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SUPPLEMENTAL SUBSURFACE ENVIRONMENTAL INVESTIGATION - FINAL REPORT

Allandale Station Lands, Barrie, Ontario

Submitted to:
City of Barrie
70 Collier Street
P.O. Box 400
Barrie, Ontario
L4M 4T5

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REPORT

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Executive Summary

Golder Associates Ltd. ("Golder") was retained by The Corporation of the City of Barrie ("the City"), to carry out supplemental subsurface environmental investigations on the property known as the Allandale Station Lands in Barrie, Ontario (the "Site"). Written authorization to proceed with this investigation was received from the City on June 1, 2010.

The work was carried out in general accordance with Golder's proposal dated May 7, 2010. These investigations were completed in preparation for the redevelopment of the Site for a variety of land uses. Golder also understands that the land use in portions of the Site may be altered in the future to include residential/parkland/institutional land use; however, the zoning is not anticipated to change.

Previous Phase I and II Environmental Site Assessments ("ESAs") were carried out at the Site. The following recommendations, among others, were outlined in the Phase II ESA report:

- Complete additional test pits within the berm running along the northern property boundary to characterize the extent of mercury impact reported in soil sample TP16-1.5;
- Based on the variable chromium results in groundwater on-Site, carry out additional groundwater monitoring prior to Site redevelopment to better assess and determine potential risks associated with this issue; and,
- Decommission the on-Site monitoring wells in accordance with O. Reg. 903 when no longer required.

The current scope of work was based on the Phase II ESA recommendations. Based on the results of the current field investigations, the following is of note:

- During the excavation of the test pits located within the berm running along the northern property boundary, utility wires and lines were encountered. The concentration of several metals and PAH parameters exceeded the industrial/commercial/community and/or residential/parkland/institutional MOE Table 2 SCS in soil samples collected from the previously excavated TP16-1.5 and the current test pits TP101, TP102, TP104, TP107, and TP108. Removal of soil within the berm from test pit TP104 eastward to east of TP13 is likely required to satisfy the proposed land use distribution;
- The volume of soil required to be disposed off-Site will likely be approximately 1,020 m^3 (i.e. a total length of approximately 170 m, an average depth of 2 m, and an average width of approximately 3 m);
- The previous exceedances of chromium in the groundwater samples collected from monitoring wells MW1 and MW4 (located southeast of the buildings and in the vicinity of the former lawn bowling property, respectively) may be associated with off-Site activities; however, the results of the current work program could not duplicate these results as concentrations of chromium in the five (5) existing monitoring wells were less than the respective MOE Table 2 SCS of 50 µg/L during both groundwater sampling events;
- The previous sodium and chloride results (i.e. in exceedance of the MOE Table 2 SCS in MW 1 through MW4) are exempt under Part XV.1 of the Environmental Protection Act based on the following observations:

- It is Golder's opinion that these concentrations are present on-Site due to road salt application on adjacent roadways for the purpose of keeping the roadway safe for traffic under conditions of snow or ice or both (O. Reg. 153/04, Section 48 [3], which is based on Section 2 of Regulation 339, R.R.O. 1990; Classes of Contaminants – Exemptions). This opinion is based on the following;

    1. The Site is bordered on three (3) sides by public roads with road salt application;
    2. There is no known recent (i.e. within the past 10 years) application or storage of de-icing salt on Site; and,
    3. Relatively coarse grained shallow sand deposits exist on Site with a relatively high horizontal groundwater flow velocity (i.e. in the order of 150 m/year) which would imply that impacts related to historical salt use on-Site (if any), which would not be exempt under the regulation, would have since migrated off-Site; and,

- Site clean-up would be necessary to satisfy the generic, Table 2 SCS leading to an RSC and/or current and new site specific standards and engineered controls would have to be developed through a risk assessment process for Parcel A and the future GO Station.

The following items are recommended prior to redevelopment of the Site:

- Remove the soil berm from TP104 eastward to east of TP13 (i.e. establish a clean line to the east, within Parcel E);
- Determine the desired approach for site evaluation and/or clean-up to best satisfy the proposed future development on Site;
- If a RSC is required for the Site and the City would like to use the current applicable site condition standards, notify the MOE, in writing, between July 1, 2010 and December 31, 2010 of your intent and include their authorization with your RSC submission; and,
- Decommission the on-Site monitoring wells in accordance with O. Reg. 903 when no longer required. Golder will provide costs under separate cover.

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1.0 INTRODUCTION

Golder Associates Ltd. ("Golder") was retained by The Corporation of the City of Barrie ("the City"), to carry out supplemental subsurface environmental investigations on the property known as the Allandale Station Lands in Barrie, Ontario (the "Site"). The Site is bounded to the south by the Canadian National Railway ("CNR"), with Gowan Street beyond, to the west by Essa Road with commercial properties beyond, to the north by Tiffin Street and Lakeshore Drive, and to the east by GO Train rail lines. The location of the Site is shown on Figure 1, following the text of the report. Written authorization to proceed with this investigation was received from the City on June 1, 2010.

The work was carried out in general accordance with Golder's proposal dated May 7, 2010. These investigations were completed in preparation for the redevelopment of the Site for a variety of land uses. Golder also understands that the land use in portions of the Site may be altered in the future to include residential/parkland/institutional land use; however, the zoning is not anticipated to change.

A Phase I Environmental Site Assessment ("ESA") was carried out previously at the request of the City (Golder, 2010a). A summary of issues of potential environmental concern for the Site identified during the Phase I ESA is provided below:

- Former presence of railway lines, including the use of rail ballasts and the placement of fill. Contaminants of concern include metals and inorganics and polycyclic aromatic hydrocarbons ("PAHs") relating to the rail ballast, rail ties, and coal ash within the berm, and in the surficial fill;
- Previously identified gasoline underground storage tank ("UST") in the vicinity of the south-central portion of the Site, the former fuel oil above ground storage tank ("AST") to the southwest of the office building, and the former fuel oil AST on the north side of the former lawn bowling clubhouse. The concrete pad, with bollards, to the west of the office building may have previously housed an AST. Contaminants of concern include petroleum hydrocarbon fractions F1 to F4 ("PHC F1 to F4"), benzene, toluene, ethylbenzene, and xylenes ("BTEX"), and PAHs;
- A previous exceedance of Total Extractable Hydrocarbons ("TEH") in soil sample BH96-6 SS5, at a depth ranging between 3.1 m to 3.5 m below grade from the vicinity of the former AST, southwest of the office building (Thurber Environmental Consultants Ltd., 1996);
- The presence of metal pipes on the exterior of the office buildings; however, these are likely associated with the former boiler, and to the east of the former passenger depot (use unknown; however, may also be associated with the former boiler); and,
- Vehicle maintenance (metals and inorganics, PHC F1 to F4, VOCs), USTs, gas stations (PHC F1 to F4, BTEX), and/or dry cleaners ("VOCs") located on properties to the southwest since at least 1961. These properties are upgradient of the Site.

A Phase II ESA was completed concurrently with the Phase I ESA. A summary of the results of the Phase II ESA is provided below:

- During the excavation of a test pit located within the berm running along the northern property boundary, ballast, metal, wire, coal ash, and a rail tie were encountered. The concentration of mercury exceeded the industrial/commercial/community Ministry of Environment ("MOE") Table 2 site condition standard ("SCS") in soil sample TP16-1.5. These results may indicate that additional exceedances may exist throughout the

fill within this berm. In addition to the buried debris, a buried 0.05 m (2") diameter metal pipe running east-west was also encountered within berm. The use of this pipe was unknown;

- Exceedances of chromium were reported in groundwater samples collected from monitoring wells MW1 and MW4 (located southeast of the buildings and in the vicinity of the former lawn bowling property, respectively) and were reportedly possibly attributed to off-Site activities; however, the source of the exceedances could not be determined with any certainty based on the information provided to Golder during the Phase I ESA;
- Electrical conductivity ("EC"), sodium, and chloride impact was identified in groundwater samples collected throughout the Site and was reportedly indicative of salt impact possibly related to de-icing salt. It is likely that there is existing EC impact related to road salt application in the vicinity of the surrounding roadways and impact related to de-icing salt on public highways is exempt under Ontario Regulation 153/04 ("O. Reg. 153/04"). The source of the impact was not identified; however, in the Phase I ESA, no historical bulk storage of salt on Site was identified; and,
- Golder indicated that if the Site is to be used for more sensitive land use in the future (i.e. for residential or parkland use), lead in test pit soil samples TP2-0.4 (located on the west side of the Site, adjacent to Essa Road), TP8-0.1 (located along the south fence line, southeast of the on-Site buildings) and TP16-1.5 (located within the berm to the east of the on-Site buildings) is of concern for users of more sensitive land uses. Lead in these samples exceeded the residential/parkland/institutional MOE Table 2 SCS and occurred within a large area of the Site and would require further investigations and/or removal prior to these portions of the Site being transformed to parkland use.

The following recommendations, among others, were outlined in the Phase II ESA report:

- Complete additional test pits within the berm running along the northern property boundary to characterize the extent of mercury impact reported in soil sample TP16-1.5;
- Based on the variable chromium results in groundwater on-Site, carry out additional groundwater monitoring prior to Site redevelopment to better assess and determine potential risks associated with this issue; and,
- Decommission the on-Site monitoring wells in accordance with O. Reg. 903 when no longer required.

Previous sampling locations are provided on Figure 2.

1.1 Scope of Work

The scope of work for the follow-up subsurface environmental investigations consisted of the following:

- Excavation of eight (8) additional test pits within the berm running along the northern property boundary;
- Completion of two additional groundwater monitoring events to better assess and determine potential risks associated with the previously identified chromium impact;
- A breakdown and comparison of the compiled analytical data by proposed development block according to the anticipated land use to identify environmentally constrained or unconstrained blocks;

- A comparison of the analytical data to both the current regulations (i.e. O. Reg. 153/04) and the new regulations, to be adopted fully in July, 2011 (i.e. O. Reg. 511/09);
- To provide costs for the decommissioning of the five (5) existing monitoring wells; and,
- Preparation of this report which documents the field investigation methods and the findings of the study.

2.0 FIELD INVESTIGATION METHODS

The following sections describe the field investigation methods employed during the work program carried out at the Site. The field work was completed between June 22, 2010 and July 12, 2010. The field work described herein was carried out under the supervision of members of Golder's Environmental Division staff.

2.1 Health and Safety

Prior to initiating the field work, Golder developed and implemented study area-specific protocols to protect the health and safety of its employees and subcontractors through the preparation of a Site-specific Health and Safety Plan. An assessment of potential health and safety hazards within the study area and those associated with the proposed work was completed each day of the field program. A health and safety tailgate meeting was held with Golder's subcontractors each day prior to commencement of the field work.

Golder coordinated utility clearances with the local utility companies prior to the initiation of the field work.

2.2 Test Pit Excavation

Morris Shelswell & Sons Excavating & Grading Ltd. ("Shelswell") of Hawkestone, Ontario provided the services of an SK 210 track mounted excavator to excavate eight test pits on June 29, 2010. The test pit locations are shown on Figure 2. The test pits were completed within the berm to better characterize the extent of previously identified metals, inorganics, and PAH impact as well as to assess waste materials within the berm to better estimate removal and management costs. The test pits were advanced to the native soil beneath the berm, if possible. The test pits ranged in depth from approximately 1.6 metres below ground surface ("mbgs") to 2.5 mbgs. The soil and groundwater conditions in the test pits were logged in the field by an environmental scientist from our staff. All test pits were loosely backfilled and compacted with the bucket of the excavator upon completion of the excavation.

2.3 Soil Sampling

Soil samples were obtained at regular depth intervals and from representative stratigraphic units in the test pits and were logged in the field noting subsurface conditions and visual evidence of contamination (if any). A portion of each soil sample was placed in a sealed plastic bag, and, if analysed, laboratory supplied sample jars. Bagged portions of the samples were subsequently screened for combustible vapours using a RKI Eagle Gastechtor ("Gastechtor"), operated in the methane elimination mode and calibrated to hexane gas standards. Headspace readings were taken in the plastic soil sample bags' headspace shortly after sample collection. Conditions encountered in the test pits are summarized on the Record of Test Pit sheets provided in Appendix A.

Soil samples selected for chemical analysis were immediately placed in coolers with ice and submitted to AGAT Laboratories Ltd. ("AGAT") under chain-of-custody. The selection of samples for laboratory analysis was based on the identified issues of potential environmental concern, visual and olfactory observations (i.e. odour or

staining) during test pitting, and headspace readings. Table 2.1 provides a summary of the soil samples submitted to AGAT for analysis.

Table 2.1: Summary of Analysed Soil Samples

Location	Sample I.D.	Sample Depth (mbgs)	Issue of Environmental Concern	Gastechtor Reading (ppm)	Requested Analysis
TP101	TP101-1	0.50 – 0.65	Unknown fill quality	<25	Metals, inorganics, PAHs
TP102	TP102-1	0.50 – 0.65	Unknown fill quality	<25	Metals, inorganics, PAHs
	TP102-3	1.45 – 1.60	Adjacent to 0.25 m diameter utility line located within the test pit	<25	Metals, inorganics, PAHs
TP103	TP103-2	0.60 – 0.75	Base of clear stone, top of fill	<25	Metals, inorganics, PAHs
	TP103-5	2.25 – 2.40	Top of native soil	<25	Metals, inorganics, PAHs
TP104	TP104-1	0.80 – 0.95	Unknown fill quality	<25	Metals, inorganics, PAHs
	TP104-4 Field replicate TP104-4D	1.80 – 1.95	Top of native soil	<25	Metals, inorganics, PAHs
TP105	TP105-1	0.50 – 0.65	Unknown fill quality	<25	Metals, inorganics, PAHs
TP106	TP106-1	0.50 – 0.65	Unknown fill quality	<25	Metals, inorganics, PAHs
	TP106-4	2.00 - 2.15	Native soil	25	Metals, inorganics, PAHs

Location	Sample I.D.	Sample Depth (mbgs)	Issue of Environmental Concern	Gastechtor Reading (ppm)	Requested Analysis
TP107	TP107-2	1.30 – 1.45	Surrounding utility pipe	25	Waste classification
	TP107-3 Field replicate TP107-3D	1.60 – 1.75	Surrounding utility pipe, metals staining	25	Metals, inorganics, PAHs
	TP107-4	1.95 – 2.10	Native soil	<25	Metals, inorganics, PAHs
TP108	TP108-1	0.20 – 0.35	Unknown fill quality	<25	Metals, inorganics, PAHs
	TP108-4	1.95 – 2.10	Native soil	<25	Metals, inorganics, PAHs

Notes:

ppm = parts per million by volume PAHs = polynuclear aromatic hydrocarbons

2.4 Groundwater Sampling

Five (5) monitoring wells were previously installed at the Site and labelled as MW1 to MW5 (see Figure 2). The groundwater levels were measured in the monitoring wells on June 22, 2010 and again on July 12, 2010 using an electronic water level tape. Water levels ranged from 2.91 mbgs (MW3) to 3.49 mbgs (MW1) on June 22, 2010 and from 2.94 mbgs (MW3) to 3.48 mbgs (MW1) on July 12, 2010. These water levels are slightly elevated from the previous sampling events completed in January 2010 and February, 2010 during which depths to groundwater ranged from 3.18 mbgs to 3.75 mbgs and from 3.18 mbgs to 3.74 mbgs, respectively; however, the interpreted shallow groundwater flow direction remains northeast toward Kempenfelt Bay.

The monitoring wells were equipped with dedicated low density polyethylene (LDPE) tubing and a foot valve (Waterra system) for subsequent well purging and water quality sampling. A minimum of approximately three (3) well water volumes were purged from the wells prior to groundwater sample collection. Groundwater samples were collected on June 22, 2010. Additional groundwater samples were collected on July 12, 2010 (see Section 2.7 below). Purged groundwater was distributed onto the ground surface in the vicinity of the monitoring wells. The collected groundwater samples were placed in coolers with ice and submitted to AGAT under chain-of-custody. Table 2.2 provides a summary of the groundwater samples submitted for laboratory analysis.

Table 2.2: Summary of Analysed Groundwater Samples

Well Number and I.D.	Date Sampled	Gastechtor Reading in Well Headspace (ppm)	Final Field pH	Final Field Temp. (ºC)	Final Field Cond. (mS/cm)	Total Volume Purged (L)	Analysis Requested
MW1; field duplicates MW100 and MW200	June 22/10	<25	7.61	11.0	3450	11.5	Chromium
	July 12/10	nm	7.29	11.9	2963	12	Chromium
MW2	June 22/10	<25	7.67	12.8	2968	11.5	Chromium
	July 12/10	nm	7.10	14.2	3086	12	Chromium
MW3	June 22/10	<25	7.34	11.3	2016	11	Chromium
	July 12/10	nm	7.15	12.3	1745	12	Chromium
MW4	June 22/10	25	7.42	12.3	1152	11	Chromium
	July 12/10	nm	7.37	14.1	1595	10	Chromium
MW5	June 22/10	25	7.60	10.7	853	12	Chromium
	July 12/10	nm	7.39	13.3	787	13	Chromium

Notes:

ppm = parts per million by volume nm = not measured

2.5 Analytical Program

Golder retained the services of AGAT of Mississauga, Ontario for the chemical analysis of soil and groundwater samples. AGAT is accredited by the Standards Council of Canada/Canadian Association of Environmental Analytical Laboratories ("CAEAL") program. Analytical methods are reported by AGAT on the Laboratory Certificates of Analysis provided in Appendices B and C. The standard analytical methods and procedures used, as well as internal laboratory method blanks, duplicates and surrogate recoveries for organic analyses are also provided on the AGAT Laboratory Certificates of Analysis.

A minimum of one (1) soil sample was submitted from each test pit for laboratory analysis of metals and inorganics, and PAHs. One waste classification sample (labelled as TP107-2) of soil from within the berm was collected from test pit TP107 and submitted for analysis of O. Reg. 558/00 Toxicity Characteristic Leaching Procedure ("TCLP") leachate analysis for VOCs, metals/inorganics, polychlorinated biphenyls ("PCBs"), benzo(a)pyrene, and ignitability to determine waste classification and an appropriate disposal facility. The results were obtained prior to the commencement of the excavation program in order to remove the soil immediately from the Site upon future excavation. The analysed waste classification sample collected on June 29, 2010 was below the O.Reg.558/00, Schedule 4 Leachate Toxicity Criteria and can be classified as

non-hazardous waste for disposal purposes. Waste classification results and associated Leachate Toxicity Criteria are provided in Table 1 (attached).

Groundwater samples were collected from the monitoring wells on June 22, 2010 and again on July 12, 2010 and submitted for laboratory analysis of chromium.

AGAT has an in-house quality assurance/quality control ("QA/QC") program to govern sample analysis. Standard QA/QC protocols include the analysis of method blanks, matrix spikes and 10% replicates for every sample batch. In addition to the quality control employed by AGAT, the following QA/QC samples were also submitted during the work program:

- Two (2) blind soil replicate samples (TP104-4D, a replicate of TP104-4, and TP107-3D, a replicate of TP107-3, were submitted for analysis of metals, inorganics, and PAHs);
- One (1) groundwater duplicate sample (MW100, a duplicate of monitoring well MW1) was submitted for analysis of chromium during the June 22, 2010 groundwater sampling event and one (1) groundwater duplicate sample (MW200, also a duplicate of monitoring well MW1) was submitted for analysis of chromium during the July 12, 2010 groundwater sampling event;
- One (1) blind field blank sample was submitted for analysis of chromium during the July 12, 2010 groundwater sampling event; and,
- One (1) trip blank sample was submitted for analysis of chromium during the July 12, 2010 groundwater sampling event.

3.0 PHYSICAL CHARACTERISTICS

3.1 Utilities and Water Supply

The Site is not serviced and, according to the City, has not been serviced with municipal water and sewers since 2002.

3.2 Site Specific Geologic Conditions

Details of the conditions encountered in the test pits are presented on the Record of Test Pit sheets provided in Appendix A. Subsurface conditions encountered are specific to the test pit and monitoring well locations and will vary between and beyond test pit and sampling locations.

Based on water well records provided for the area in the vicinity of the Site, the overburden consists of thick layers of alternating sand and finer grained materials, overlying limestone bedrock. The soil conditions encountered at the test pit locations generally consisted of surficial fill underlain by fine sand. The area to the north of the buildings had increased silt content. A grain size analysis previously completed on one sample from the representative fine sand encountered throughout the Site indicated that the sample consisted mainly (i.e. approximately 90%) of fine grained sand, with a trace amount of silt. Based on information obtained from the Site, more than two-thirds of the Site consists mainly of native sand, which consists of more than 50 percent by mass, of particles that are 75 µm or larger in mean diameter, and therefore, based on O.Reg.153/04, the study area soil texture would likely be classified as coarse grained for the purpose of applying the Site conditions standards set out in O. Reg. 153/04 and O. Reg. 511/09.

At least one (1) of three (3) steel utility lines (0.15 m, 0.20 m, and 0.25 m in diameter) were encountered in the test pits completed during the work program. The utility lines ran in an east/west orientation.

No hydrocarbon-related staining or odours were noted in the test pits. Headspace readings in the soil samples were less than, or equal to, 25 parts per million by volume ("ppm").

3.3 Site Hydrogeology

The depth to groundwater in the monitoring wells, as measured on June 22, 2010, ranged from 2.91 mbgs (MW3) to 3.49 mbgs (MW1) with groundwater elevations ranging from 220.33 m above sea level ("masl") in monitoring well MW5 to 221.97 masl in monitoring well MW4. The depth to groundwater in the monitoring wells, as measured on July 12, 2010, ranged from 2.94 mbgs (MW3) to 3.48 mbgs (MW1) with groundwater elevations ranging from 220.36 masl in monitoring well MW5 to 221.94 masl in monitoring well MW4. Based on the topography, regional groundwater flow is likely to be northeast toward Kempenfelt Bay. A summary of monitoring well data obtained during the June 22 and July 12, 2010 groundwater sampling events is provided in Tables 3.1 and 3.2, respectively. No sheen or odours were noted in groundwater purged from the monitoring wells. The interpreted shallow horizontal groundwater flow direction is to the northeast toward Kempenfelt Bay; however, it is possible that buried underground utilities are causing a groundwater sink in the vicinity of monitoring well MW5.

Table 3.1: Summary of Monitoring Well Details – June 22, 2010

Well	Monitoring Pipe Elev. (masl)	Ground Surface Elev. (masl)	Top of Screen Elevation (masl)	Bottom of Well Elevation (masl)	Depth to Groundwater (mbgs)	Groundwater Elevation (masl)
MW1	224.95	224.09	221.81	218.76	3.49	220.60
MW2	225.15	224.30	222.47	219.42	3.14	221.16
MW3	224.66	223.73	221.90	218.85	2.91	220.82
MW4	226.06	225.18	223.35	220.30	3.21	221.97
MW5	224.45	223.45	221.32	218.27	3.13	220.33

mbgs = metres below ground surface
masl = metres above sea level

Table 3.2: Summary of Monitoring Well Details – July 12, 2010

Well	Monitoring Pipe Elev. (masl)	Ground Surface Elev. (masl)	Top of Screen Elev. (masl)	Bottom of Well Elevation (masl)	Depth to Groundwater (mbgs)	Groundwater Elevation (masl)
MW1	224.95	224.09	221.81	218.76	3.48	220.61
MW2	225.15	224.30	222.47	219.42	3.14	221.16
MW3	224.66	223.73	221.90	218.85	2.94	220.79
MW4	226.06	225.18	223.35	220.30	3.25	221.97
MW5	224.45	223.45	221.32	218.27	3.09	220.36

mbgs = metres below ground surface
masl = metres above sea level

4.0 CHEMICAL ANALYTICAL FINDINGS

4.1 Applicable Site Condition Standards

As determined in the previous Phase II ESA, the analytical results for soil and groundwater were compared to the full depth site condition standards for commercial/industrial/community land use, coarse textured soil, listed in Table 2 (potable groundwater situation) of the "*Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated March 4, 2004 (i.e. MOE Table 2 SCS).

The MOE issued an amendment to the "*Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*" (i.e. O.Reg.153/04, amended with O.Reg.511/09) on December 29, 2009. There will be an 18 month transition period prior to the amendments coming into full effect on July 11, 2010. Until that time, the current standards are appropriate for use; however, if a Record of Site Condition ("RSC") is required for the Site, the MOE must be notified in writing between July 1, 2010 and December 31, 2010, that the assessment for the property has already been initiated and to allow the current regulations to be utilized during the preparation of the RSC. The receipt of written authorization from the MOE must then be attached to the RSC upon submission. To that end, we have also included the revised full depth site condition standards for commercial/industrial/community land use, coarse textured soil, listed in Table 2 (potable groundwater situation) of the "*Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated July 27, 2009 (i.e. New MOE Table 2 SCS) in the analytical tables (attached) for information purposes.

4.2 Analytical Results

The soil and groundwater analytical results, and both sets of associated MOE Table 2 site condition standards, are provided in Tables 2 to 4 (attached).

The test pitting activities were completed on June 29, 2010. As stated in Section 1.1 above, eight (8) test pits were completed to assess the environmental quality of the fill located within the berm running along the north side of the property. Groundwater monitoring and sampling was completed on June 22 and July 12, 2010. The test pit soil samples were submitted for laboratory analysis of metals, inorganics, and PAHs and the groundwater samples were submitted for laboratory analysis of chromium.

None of the concentrations of chromium in the groundwater samples collected from the five existing monitoring wells on June 22 or July 12, 2010 exceeded the MOE Table 2 SCS of 50 µg/L.

The following exceedances of the MOE Table 2 SCS (industrial/commercial/community land use) were reported in soil samples collected from the test pits:

- Copper in soil sample TP101-1, collected near the east limit of the berm, was 269 µg/g, slightly higher than the MOE Table 2 SCS of 225 µg/g; and,
- Benzo(a)anthracene and benzo(a)pyrene in soil sample TP102-1, collected approximately 50 m west of TP101, were 17 µg/g and 11 µg/g, respectively, slightly higher than their respective MOE Table 2 SCS of 6.6 µg/g and 1.9 µg/g.

When compared to the New MOE Table 2 SCS (industrial/commercial/community land use), the following additional exceedances were reported:

- Arsenic and lead in soil sample TP101-1 were 23 µg/g and 720 µg/g, respectively which exceeded their respective New MOE Table 2 SCS of 18 µg/g and 120 µg/g;

- Lead, acenaphthylene, phenanthrene, anthracene, fluoranthene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene in soil sample TP102-1 were 171 µg/g, 1.4 µg/g, 15 µg/g, 2.9 µg/g, 25 µg/g, 16 µg/g, 6.8 µg/g, 4.2 µg/g, 2.7 µg/g, and 1.5 µg/g which exceeded their respective New MOE Table 2 SCS of 120 µg/g, 0.15 µg/g, 12 µg/g, 0.67 µg/g, 9.6 µg/g, 9.6 µg/g, 0.96 µg/g, 0.96 µg/g, 0.76 µg/g, and 0.1 µg/g;
- Benzo(a)pyrene in soil sample TP104-1 was 0.40 µg/g which exceeded the New MOE Table 2 SCS of 0.3 µg/g; and,
- Benzo(a)pyrene in soil sample TP107-3 was 0.74 µg/g which exceeded the New MOE Table 2 SCS of 0.3 µg/g.

When the test pit results were compared to the MOE Table 2 SCS for residential/parkland/institutional land use, the following exceedances were reported:

- Antimony, arsenic, copper, and lead in soil sample TP101-1 were 20.8 µg/g, 23 µg/g, 269 µg/g, and 720 µg/g, respectively which exceeded their respective MOE Table 2 SCS of 13 µg/g, 20 µg/g, 225 µg/g, and 200 µg/g; and,
- Benzo(a)anthracene, benzo(a)pyrene, and dibenzo(a,h)anthracene in soil sample TP102-1 were 17 µg/g, 11 µg/g, and 1.5 µg/g, respectively, which exceeded their respective MOE Table 2 SCS of 6.6 µg/g, 1.2 µg/g, and 1.2 µg/g.

When compared to the New MOE Table 2 SCS (residential/parkland/institutional land use), the following additional exceedances were reported:

- Mercury and naphthalene in soil sample TP101-1 were 0.65 µg/g and 1.8 µg/g, respectively, which exceeded their respective New MOE Table 2 SCS of 0.27 µg/g and 0.6 µg/g;
- Lead, acenaphthylene, phenanthrene, anthracene, fluoranthene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene in soil sample TP102-1 were 171 µg/g, 1.4 µg/g, 15 µg/g, 2.9 µg/g, 25 µg/g, 16 µg/g, 6.8 µg/g, 4.2 µg/g, and 2.7 µg/g, which exceeded their respective New MOE Table 2 SCS of 120 µg/g, 0.15 µg/g, 12 µg/g, 0.67 µg/g, 9.6 µg/g, 9.6 µg/g, 0.96 µg/g, 0.96 µg/g, and 0.76 µg/g;
- Benzo(a)pyrene in soil sample TP104-1 was 0.40 µg/g which exceeded the New MOE Table 2 SCS of 0.3 µg/g;
- Fluoranthene, benzo(a)anthracene and benzo(a)pyrene in soil sample TP107-3 were 1.2 µg/g, 0.80 µg/g, and 0.74 µg/g, respectively, which exceeded their respective New MOE Table 2 SCS of 0.69 µg/g, 0.5 µg/g, and 0.3 µg/g; and,
- Mercury in soil sample TP108-4 was 0.36 µg/g, which exceeded the New MOE Table 2 SCS of 0.27 µg/g.

Relative percent difference (“RPD”) calculations are completed on samples where both the original and replicate/duplicate concentrations are greater than five (5) times the laboratory detection limits. With the exception of concentrations of copper (130%) and lead (147%) in soil sample TP107-3 and its field replicate TP107-3D, RPD calculations for replicate soil samples were within the alert limit of 100%. The variability of these parameters is likely due to sample heterogeneity and results of the report do not significantly change

based on these RPD values. RPD calculations for the duplicate groundwater samples were within the alert limit of 50%.

No chromium was reported in the field blank or trip blank analysed during the July 12, 2010 groundwater sampling event.

Based on the above, the associated analytical results generally appear to be representative and reproducible.

5.0 COMPARISON OF ANALYTICAL RESULTS WITH THE PROPOSED SITE REDEVELOPMENT PLAN

As outlined in our proposal, Golder obtained the most current redevelopment plan for the Site from the City and compared the current and previously reported analytical results with the proposed land use to assess possible Record of Site Condition ("RSC") requirements. The Site is currently zoned for commercial use. Based on the Allandale Lands Study figure, completed by McKnight Charron Laurin Inc. Architects, entitled, "Site Plan – Preliminary Concept" revised on May 20, 2010, the Site may be divided into smaller parcels of property as shown on Figure 3. For the following discussion, the names Parcel A, Parcel B, etc. correspond to the labelled areas in Figure 3. Key information is as follows:

- A proposed roadway runs south from the intersection of Tiffin Street and Lakeshore Drive to the future GO station located along the southern portion of the Site. Another roadway is proposed approximately 230 m to the east running south from Lakeshore Drive. Roadways are considered industrial/commercial/community land use. Underground parking is proposed for the majority of the Site and, with the exception of Parcel F, is proposed for a portion of all Parcels;
- Parcel A consists of 0.57 Ha (1.4 acres) located in the west-central portion of the Site, west of the proposed roadway running south from the intersection of Tiffin Street and Lakeshore Drive, north of the future GO station, east of Essa Road, and south of the commercial properties located on the southeast corner of Tiffin Street and Essa Road. There are two proposed buildings within Parcel A; however, the land use has not been identified. Parkland may be proposed in the northern portion of this parcel and, if so, residential/parkland/institutional land use standards would apply;
- Parcel B consists of 0.53 Ha (1.3 acres) located west of Parcel C, north of the future GO station, east of the proposed roadway running south from the intersection of Tiffin Street and Lakeshore Drive, and south of Parcel G (station building lands). There is a proposed roundhouse building and retail space proposed for this Parcel (i.e. industrial/commercial/community land use);
- Parcel C consists of 0.22 Ha (0.6 acres) located west of the proposed roadway running south from Lakeshore Drive, north of the future GO station, east of Parcel B, and south of Parcel G (station building lands). A loft condo/hotel is proposed for this Parcel (i.e. residential/parkland/institutional land use);
- Parcel D consists of 0.26 Ha (0.6 acres) located west of Parcel E, north of the future GO station, east of the proposed roadway running south from Lakeshore Drive, and south of Lakeshore Drive. A condo/hotel is proposed for this Parcel (i.e. residential/parkland/institutional land use);
- Parcel E consists of 0.31 Ha (0.8 acres) located in the east portion of the Site, west of the GO station parking area to the east of the Site, north of the GO tracks, east of Parcel D, and south of Lakeshore Drive. A condo/hotel is proposed for this Parcel (i.e. residential/parkland/institutional land use);

- Parcel F consists of 0.15 Ha (0.4 acres) located in the northwest corner of the Site, west of the proposed roadway running south from the intersection of Tiffin Street and Lakeshore Drive, north of the east portion of Parcel A, east of the commercial properties located on the southeast corner of Tiffin Street and Essa Road, and south of Tiffin Street. Re/Max Realty is proposed for the Parcel (i.e. industrial/commercial/community land use);
- Parcel G consists of 0.90 Ha (2.2 acres) located in the north-central portion of the Site and contains the existing Allandale Station buildings. The Parcel is located west of the proposed roadway running south from Lakeshore Drive, north of Parcels B and C, east of the proposed roadway running south from the intersection of Tiffin Street and Lakeshore Drive, and south of Lakeshore Drive. The land use will remain unchanged (i.e. industrial/commercial/community land use); and,
- The remainder of the Site is located along the southern boundary of the Site and will consist of the future GO Station with a platform, railway tracks, and parking. The land use will remain unchanged (i.e. industrial/commercial/community land use).

The following tables (i.e. Tables 5.1A through 5.1H) outline the results of the analytical testing completed to date at the Site in comparison to the current and pending site condition standards for each proposed Parcel. Based on proposed future land use, RSCs would likely be required for any Parcel that would be utilized for a more stringent land use (i.e. Parcels A, C, D, and E). It should be noted that the Site was assessed as a whole prior to being issued the proposed land use and parcel breakdown. Therefore, Parcel E, currently used by GO Transit, and Parcel F, Re/Max Realty have not yet been directly investigated. According to Figure 3 and the current property fabric, only the east portion of Parcel F (east of the existing building) was included in the Phase I and II ESAs. The closest sampling locations to these Parcels have been used to assess the likely subsurface conditions on these Parcels. Appendix D outlines the analytical results versus the new and current site condition standards.

Table 5.1A: Analytical Results Vs. Parcel A (Proposed Residential/Parkland/Institutional Land Use)

Parcel A Sample Locations	Standard	Sample Exceedance Location	Depth (mbgs)	Parameters	Soil or Groundwater
TP1, TP2, TP9, and, BH4/MW4	Current MOE Table 2 ind./com./comm. land use	MW4	NA	Sodium, chloride	Groundwater
	New MOE Table 2 SCS ind./com./comm. land use	TP2	0.40 – 0.55	Lead	Soil
		MW4	NA	Sodium, chloride	Groundwater
	Current MOE Table 2 res./park./inst. land use	TP1-0.40	0.40 – 0.55	Electrical conductivity	Soil
		TP2-0.40	0.40 – 0.55	Lead	Soil
		MW4	NA	Sodium, chloride	Groundwater
	New MOE Table 2 res./park./inst. land use	TP1-0.40	0.40 – 0.55	Electrical conductivity	Soil
		TP2-0.40	0.40 – 0.55	Lead, mercury	Soil
		MW4	NA	Sodium, chloride	Groundwater

Based on the proposed future land use (i.e. parkland in the north portion of the Parcel in the vicinity of test pit TP1), Site clean-up would be necessary to satisfy the generic, Table 2 SCS leading to an RSC and/or current

and new site specific standards and engineered controls would have to be developed through a risk assessment process.

Table 5.1B: Analytical Results Vs. Parcel B (Proposed Industrial/Commercial/Community Land Use)

Parcel B Sample Locations	Standard	Sample Exceedance Location	Depth (mbgs)	Parameters	Soil or Groundwater
TP6, TP7, and BH1/MW1 (at limit between Parcels B and G)	Current MOE Table 2 ind./com./comm. land use	MW1	NA	Sodium, chloride	Groundwater
	New MOE Table 2 SCS ind./com./comm. land use	MW1	NA	Sodium, chloride	Groundwater
	Current MOE Table 2 res./park./inst. land use	MW1	NA	Sodium, chloride	Groundwater
	New MOE Table 2 res./park./inst. land use	TP6-0.60	0.60 – 0.75	Mercury	Soil
		MW1	NA	Sodium, chloride	Groundwater

Based on the analytical results, no additional investigations would be required on this Parcel prior to the preparation of a RSC as sodium and chloride are exempt under Part XV.1 of the Environmental Protection Act. Site specific rationale are provided in Section 6.0, which illustrate that these concentrations are present on-Site due to road salt application on adjacent roadways for the purpose of keeping the roadway safe for traffic under conditions of snow or ice or both.

Table 5.1C: Analytical Results Vs. Parcel C (Proposed Residential/Parkland/Institutional Land Use)

Parcel C Sample Locations	Standard	Sample Exceedance Location	Depth (mbgs)	Parameter	Soil or Groundwater
TP10 and TP16 (both at limit between Parcels C and G), TP103, TP107, and BH3/MW3	Current MOE Table 2 ind./com./comm. land use	TP16-1.50	1.50 – 1.65	Mercury	Soil
		MW3	NA	Sodium, chloride	Groundwater
	New MOE Table 2 SCS ind./com./comm. land use	TP16-1.50	1.50 – 1.65	Lead, mercury, benzo(a)pyrene	Soil
		TP107-3	1.60 – 1.75	Benzo(a)pyrene	Soil
	Current MOE Table 2 res./park./inst. land use	TP16-1.50	1.50 – 1.65	Lead, mercury	Soil
		MW3	NA	Sodium, chloride	Groundwater
	New MOE Table 2 res./park./inst. land use	TP16-1.50	1.50 – 1.65	Antimony, cadmium, copper, lead, mercury	Soil
		TP107-3	1.60 – 1.75	Fluoranthene, benzo(a)anthracene, benzo(a)pyrene	Soil

Upon removal of this portion of the berm, the samples located at TP16 and TP107 would no longer exist and the only remaining identified exceedance would be sodium and chloride in groundwater, likely due to road salt application, which would be exempt under Part XV.1 of the Environmental Protection Act. Site specific rationale are provided in Section 6.0, which illustrate that these concentrations are present on-Site due to road salt

application on adjacent roadways for the purpose of keeping the roadway safe for traffic under conditions of snow or ice or both.

Table 5.1D: Analytical Results Vs. Parcel D (Proposed Residential/Parkland/Institutional Land Use)

Parcel D Sample Locations	Standard	Sample Exceedance Location	Depth (mbgs)	Parameter	Soil or Groundwater
TP101, TP102 (in the roadway between Parcels C and D), TP108, TP13 and BH2/MW2 (both at limit between Parcels D and E)	Current MOE Table 2 ind./com./comm. land use	TP101-1	0.50 – 0.65	Copper	Soil
		TP102-1	0.50 – 0.65	Benzo(a)anthracene, benzo(a)pyrene	Soil
		MW2	NA	Sodium, chloride	Groundwater
	New MOE Table 2 SCS ind./com./comm. land use	TP13-0.25	0.25 – 0.40	Lead, acenaphthylene, benzo(a)pyrene	Soil
		TP101-1	0.50 – 0.65	Arsenic, copper, lead	Soil
		TP102-1	0.50 – 0.65	Lead, acenaphthylene, phenanthrene, anthracene, fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene	Soil
	Current MOE Table 2 res./park./inst. land use	TP101-1	0.50 – 0.65	Antimony, arsenic, copper, lead	Soil
		TP102-1	0.50 – 0.65	Benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene	Soil
		MW2	NA	Sodium, chloride	Groundwater
	New MOE Table 2 res./park./inst. land use	TP13-0.25	0.25 – 0.40	Lead, acenaphthylene, benzo(a)pyrene	Soil
		TP101-1	0.50 – 0.65	Antimony, arsenic, copper, lead, mercury, naphthalene	Soil
		TP102-1	0.50 – 0.65	Lead, acenaphthylene, phenanthrene, anthracene, fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene	Soil
		TP108-4	1.95 – 2.10	Mercury	Soil

Upon removal of the berm and soil along the northern property boundary in the vicinity of TP13, the samples located at TP13, TP101, TP102, and TP108 would no longer exist and related exceedances would not likely remain in soil or groundwater in the analysed samples collected from this Parcel (subject to confirmation).

Table 5.1E: Analytical Results Vs. Parcel E (Proposed Residential/Parkland/Institutional Land Use)

Parcel E Sample Locations	Standard	Sample Exceedance Location	Depth (mbgs)	Parameter	Soil or Groundwater
None	Current MOE Table 2 ind./com./comm. land use	No samples analysed			
	New MOE Table 2 SCS ind./com./comm. land use	No samples analysed			
	Current MOE Table 2 res./park./inst. land use	No samples analysed			
	New MOE Table 2 res./park./inst. land use	No samples analysed			

No samples were collected from Parcel E during the previous soil investigations. The closest sample locations to Parcel E are TP13 to the northwest, BH2/MW2 to the west, and TP14 to the southwest. Test pit TP13 exceeds the new MOE Table 2 industrial/commercial/community and residential/parkland/institutional land uses for lead, acenaphthylene, and benzo(a)pyrene (see Table 5.1D). During the impacted soil removal program of the berm along the northern property boundary, a confirmatory sampling location with concentrations less than the applicable MOE Table 2 SCS (i.e. a “clean” line) would be required to be established, as impacts may extend into Parcel E.

Table 5.1F: Analytical Results Vs. Parcel F (Proposed Industrial/Commercial/Community Land Use)

Parcel F Sample Locations	Standard	Sample Exceedance Location	Depth (mbgs)	Parameter	Soil or Groundwater
None	Current MOE Table 2 ind./com./comm. land use	No samples analysed			
	New MOE Table 2 SCS ind./com./comm. land use	No samples analysed			
	Current MOE Table 2 res./park./inst. land use	No samples analysed			
	New MOE Table 2 res./park./inst. land use	No samples analysed			

No samples were collected from this Parcel during the previous soil investigations. It should be noted; however, that the closest sample locations (i.e. TP9 to the south, TP7 to the southeast, and BH5/MW5 to the northeast) do not exceed the current or new site condition standards for either land use. Test pit TP1 located to the southwest exceeds the current and new MOE Table 2 residential/parkland/institutional land use site condition standards for

electrical conductivity; however, this Parcel is proposed to remain under industrial/commercial/community land use. Electrical conductivity does not exceed either the current or new MOE Table 2 SCS for industrial/commercial/community land use.

Table 5.1G: Analytical Results Vs. Parcel G (Proposed Industrial/Commercial/Community Land Use)

Parcel G Sample Locations	Standard	Sample Exceedance Location	Depth (mbgs)	Parameter	Soil or Groundwater
TP10 and TP16 (both at limit between Parcels C and G), TP104, TP105, TP106, BH1/MW1 (at limit between Parcels C and G), and BH5/MW5	Current MOE Table 2 ind./com./comm. land use	TP16-1.50	1.50 – 1.65	Mercury	Soil
		MW1	NA	Sodium, chloride	Groundwater
	New MOE Table 2 SCS ind./com./comm. land use	TP16-1.50	1.50 – 1.65	Lead, mercury, benzo(a)pyrene	Soil
		TP104-1	0.80 – 0.95	Benzo(a)pyrene	Soil
		MW1	NA	Sodium, chloride	Groundwater
	Current MOE Table 2 res./park./inst. land use	TP16-1.50	1.50 – 1.65	Lead, mercury	Soil
		MW1	NA	Sodium, chloride	Groundwater
	New MOE Table 2 res./park./inst. land use	TP16-1.50	1.50 – 1.65	Antimony, cadmium, copper, lead, mercury	Soil
		TP104-1	0.80 – 0.95	Benzo(a)pyrene	Soil
		MW1	NA	Sodium, chloride	Groundwater

Upon removal of the impacted portion of the berm (i.e. TP104 eastward to the east property boundary), the samples located at TP16 and TP104 would no longer exist and the only remaining identified exceedance would be sodium and chloride in groundwater, likely due to road salt application, which would be exempt under Part XV.1 of the Environmental Protection Act. Site specific rationale are provided in Section 6.0, which illustrate that these concentrations are present on-Site due to road salt application on adjacent roadways for the purpose of keeping the roadway safe for traffic under conditions of snow or ice or both.

Table 5.1H: Analytical Results Vs. Future GO Station (Proposed Industrial/Commercial/Community Land Use)

GO Station Sample Locations	Standard	Sample Exceedance Location	Depth (mbgs)	Parameter	Soil or Groundwater
TP3, TP4, TP5, TP8, TP14, and TP15, and BH4/MW4 (at limit between Parcel A and the future GO Station)	Current MOE Table 2 ind./com./comm. land use	MW4	NA	Sodium, chloride	Groundwater
	New MOE Table 2 SCS ind./com./comm. land use	TP8-0.10	0.10 – 0.25	Lead	Soil
		MW4	NA	Sodium, chloride	Groundwater
	Current MOE Table 2 res./park./inst. land use	TP8-0.10	0.10 – 0.25	Lead	Soil
		MW4	NA	Sodium, chloride	Groundwater
	New MOE Table 2 res./park./inst. land use	TP5-0.50	0.50 – 0.65	Barium	Soil
		TP8-0.10	0.10 – 0.25	Lead	Soil
		MW4	NA	Sodium, chloride	Groundwater

With the exception of sodium and chloride in groundwater, there are no exceedances of current MOE Table 2 SCS for industrial/commercial/community land use. Site specific rationale are provided in Section 6.0, which illustrate that the sodium and chloride in groundwater are likely due to road salt application, and would be exempt under Part XV.1 of the Environmental Protection Act. If the new industrial/commercial/community SCS were to be used, Site clean-up would be necessary to satisfy the generic, Table 2 SCS leading to an RSC and/or current and new site specific standards and engineered controls would have to be developed through a risk assessment process.

6.0 SUMMARY AND DISCUSSION

- During the excavation of the test pits located within the berm running along the northern property boundary, utility wires and lines were encountered. The concentration of several metals and PAH parameters exceeded the industrial/commercial/community and/or residential/parkland/institutional MOE Table 2 SCS in soil samples collected from the previously excavated TP16-1.5 and the current test pits TP101, TP102, TP104, TP107, and TP108. Removal of soil within the berm from test pit TP104 eastward to east of TP13 is likely required to satisfy the proposed land use distribution;
- The volume of soil required to be disposed off-Site will likely be approximately 1,020 m^3 (i.e. a total length of approximately 170 m, an average depth of 2 m, and an average width of approximately 3 m);
- The previous exceedances of chromium in the groundwater samples collected from monitoring wells MW1 and MW4 (located southeast of the buildings and in the vicinity of the former lawn bowling property, respectively) may be associated with off-Site activities; however, the results of the current work program could not duplicate these results as concentrations of chromium in the five (5) existing monitoring wells were less than the respective MOE Table 2 SCS of 50 µg/L during both groundwater sampling events;
- The previous sodium and chloride results (i.e. in exceedance of the MOE Table 2 SCS in MW 1 through MW4) are exempt under Part XV.1 of the Environmental Protection Act based on the following observations:
  - It is Golder's opinion that these concentrations are present on-Site due to road salt application on adjacent roadways for the purpose of keeping the roadway safe for traffic under conditions of snow or ice or both (O. Reg. 153/04, Section 48 [3], which is based on Section 2 of Regulation 339, R.R.O. 1990; Classes of Contaminants – Exemptions). This opinion is based on the following;
    1. The Site is bordered on three (3) sides by public roads with road salt application;
    2. There is no known recent (i.e. within the past 10 years) application or storage of de-icing salt on Site; and,
    3. Relatively coarse grained shallow sand deposits exist on Site with a relatively high horizontal groundwater flow velocity (i.e. in the order of 150 m/year) which would imply that impacts related to historical salt use on-Site (if any), which would not be exempt under the regulation, would have since migrated off-Site; and,
- Site clean-up would be necessary to satisfy the generic, Table 2 SCS leading to an RSC and/or current and new site specific standards and engineered controls would have to be developed through a risk assessment process for Parcel A and the future GO Station.

7.0 RECOMMENDATIONS

The following items are recommended prior to redevelopment of the Site:

- Remove the soil berm from TP104 eastward to east of TP13 (i.e. establish a clean line to the east, within Parcel E);
- Determine the desired approach for site evaluation and/or clean-up to best satisfy the proposed future development on Site;
- If a RSC is required for the Site and the City would like to use the current applicable site condition standards, notify the MOE, in writing, between July 1, 2010 and December 31, 2010 of your intent and include their authorization with your RSC submission; and,
- Decommission the on-Site monitoring wells in accordance with O. Reg. 903 when no longer required. Golder will provide costs under separate cover.

8.0 LIMITATIONS

This report was prepared for the exclusive use of the City and has been prepared as part of environmental due diligence activities and is not intended to be utilized as supporting documentation for a Record of Site Condition under Ontario Regulation 153/04. If a Record of Site Condition is required for the Site and this report is to be used as part of the supporting documentation, it must be reviewed and updated by Golder. Additional Environmental Site Assessment activities may be required to comply with Ontario Regulation 153/04.

Golder's professional services for this assignment addressed only the geo-environmental (chemical) aspects of the subsurface conditions at this Site. The geotechnical (physical) aspects, including engineering recommendations for the design and construction of building foundations, pavements, underground servicing and the like are outside the terms of reference for this report and have not been investigated or addressed.

This report is based on data and information collected during the subsurface environmental investigation conducted by Golder and is based solely on Site conditions encountered at the time of the field work (i.e. January 4, 2010 through July 12, 2010), as described in this report.

In evaluating the Site, Golder has relied in good faith on information provided by others and evaluated only conditions at a limited number of test locations. Only limited chemical analyses of soil samples were carried out. It should be noted that the results of an investigation of this nature should, in no way, be construed as a warranty that the Site is free from any and all contamination from past or current practices.

We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this report as a result of omission, misinterpretations or fraudulent acts of the persons interviewed. Golder accepts no responsibility for any reduction in property value, either real or perceived, as a result of the reporting of factual information herein.

This assessment was carried out using existing historical information as available from various agencies and no assurance is made regarding the accuracy or completeness of this information.

If additional information is obtained during future work at the Site, including excavations, borings, or other studies, and/or if conditions exposed during construction are different from those encountered in this

assessment, Golder should be requested to re-evaluate the conclusions presented in this report and provide amendments as required.

9.0 CLOSURE

We trust that this report meets with your current requirements. Please do not hesitate to call should you have any questions regarding this report.

Yours truly,

GOLDER ASSOCIATES LTD.

Christi Groves, B.Sc.
Environmental Scientist

Shawn Lytle, P.Geo.
Managing Principal

CLG/SDL/plc

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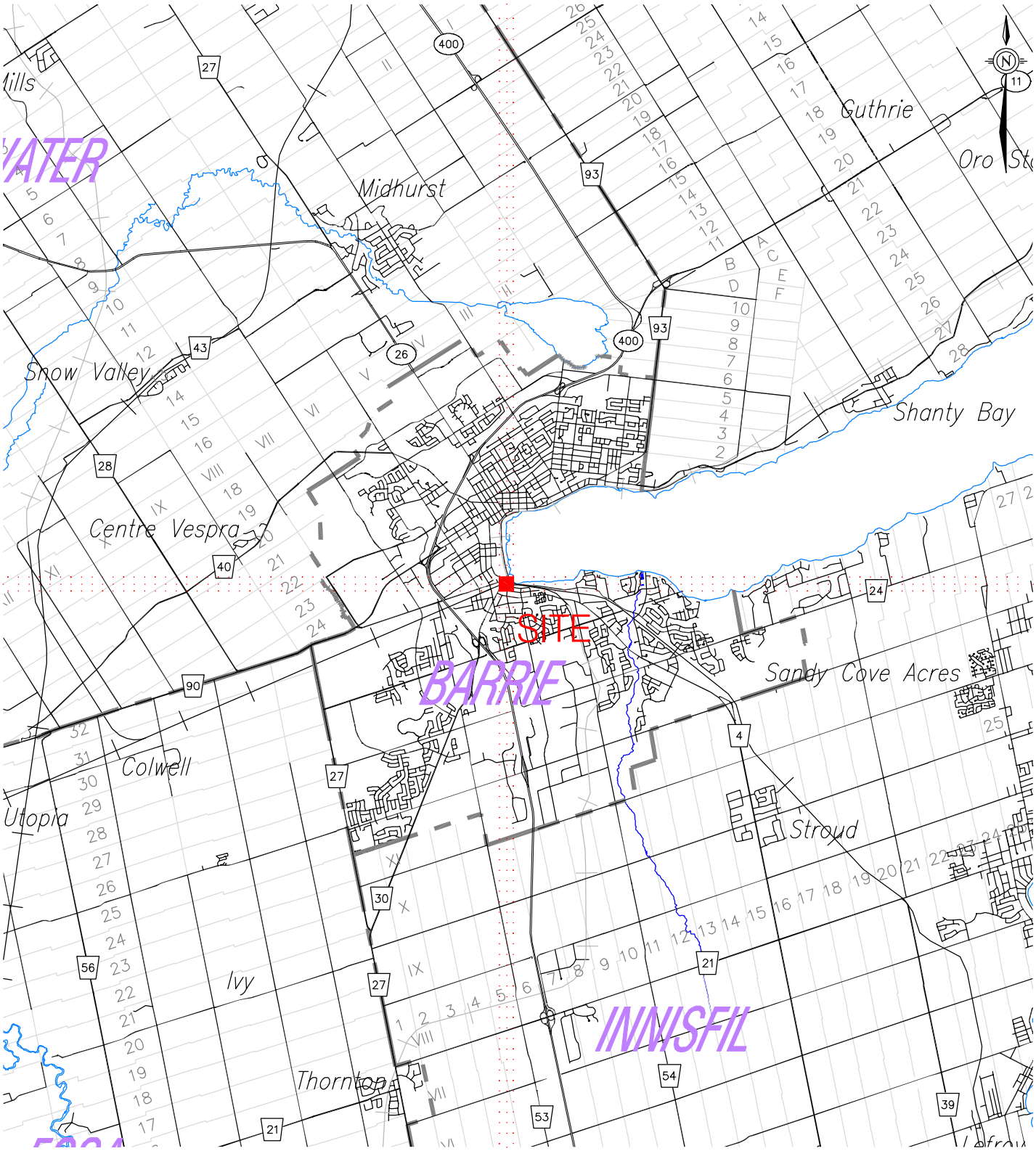
10.0 REFERENCES

Golder Associates Ltd., 2010a. "Phase I Environmental Site Assessment, Allandale Station Lands, Barrie, Ontario". Report completed for the City of Barrie and dated February 18, 2010.

Golder Associates Ltd., 2010b. "Final Phase II Environmental Site Assessment, Allandale Station Lands, Barrie, Ontario". Report completed for the City of Barrie and dated April, 2010.

FIGURES



NOTES:

1. DATUM IS NAD UTM 83 ZONE 17

REFERENCES:

1. MAPPING BASED ON COUNTY OF SIMCOE MUNICIPAL BASE

km

0 1 2.5 5 10

SCALE 1:125000

Golder Associates
Mississauga, Ontario, Canada

SCALE	AS SHOWN
DATE	21 JUL 2010
DESIGN	
CAD	J REGIER
CHECK	
REVIEW	

TITLE

REGIONAL LOCATION MAP

FILE No. 0911706024CAREG.dwg : Figure 1

PROJECT No. 09-1170-6024 REV.

ALLANDALE STATION
SUPPLEMENTAL SUBSURFACE ENVIRONMENTAL INVESTIGATIONS

FIGURE 1

PLOT DATE: July 21, 2010
FILENAME: T:\Projects\2009\09-1170-6024 (Barrie, Allandale EA)\CA\0911706024CAREG.dwg

TIFFIN STREET

ESSA ROAD

WILLIAM STREET

GOWAN STREET

CUMBERLAND STR

LAKESHORE DRIVE

Kempenfelt Bay

N

GS#16
96-3
TP2
TP1
96-1
BH5
GS#17
96-6
96-4
TP9
BH4
96-5
TP7
TP3
96-2
96-7
96-8
96-10
96-9
TP17
TP6
GS#18
TP106
GS#19
TP105
GS#2
TP4
TP104
BH1
GS#20
TP5
GS#4
TP10
TP16
TP103
TP107
BH3
TP102
TP8
GS#6
TP108
TP12
TP101
TP11
TP13
TP15
BH2
TP14

4 8 11 21 24 268 274 285 155 70

5 9 13 17 19 21 27 31 33 35 37 39 41 43 45 47 49 51 53 57 59 63 65 69 71 73 75 28 30 18

SITE PROPERTY BOUNDARY
PREVIOUS BOREHOLE INVESTIGATION BY OTHERS
GOLDER MONITORING WELLS
GOLDER TEST PITS JANUARY 2010
GOLDER TEST PITS JUNE 2010

0 5 10 25 50
SCALE 1:1250 metres
Plotted Tabloid 11x17

NOTES:
Projection UTM NAD 83 Zone 17
City of Barrie Municipal Mapping 2007

Golder Associates
Barrie, Ontario, Canada

SCALE	AS SHOWN
DATE	21 JUL 2010
DESIGN	
CAD	J REGIER
CHECK	
REVIEW	

FILE No. 0911706024CASITE.dwg
PROJECT No. 09-1170-6024 REV.

TITLE

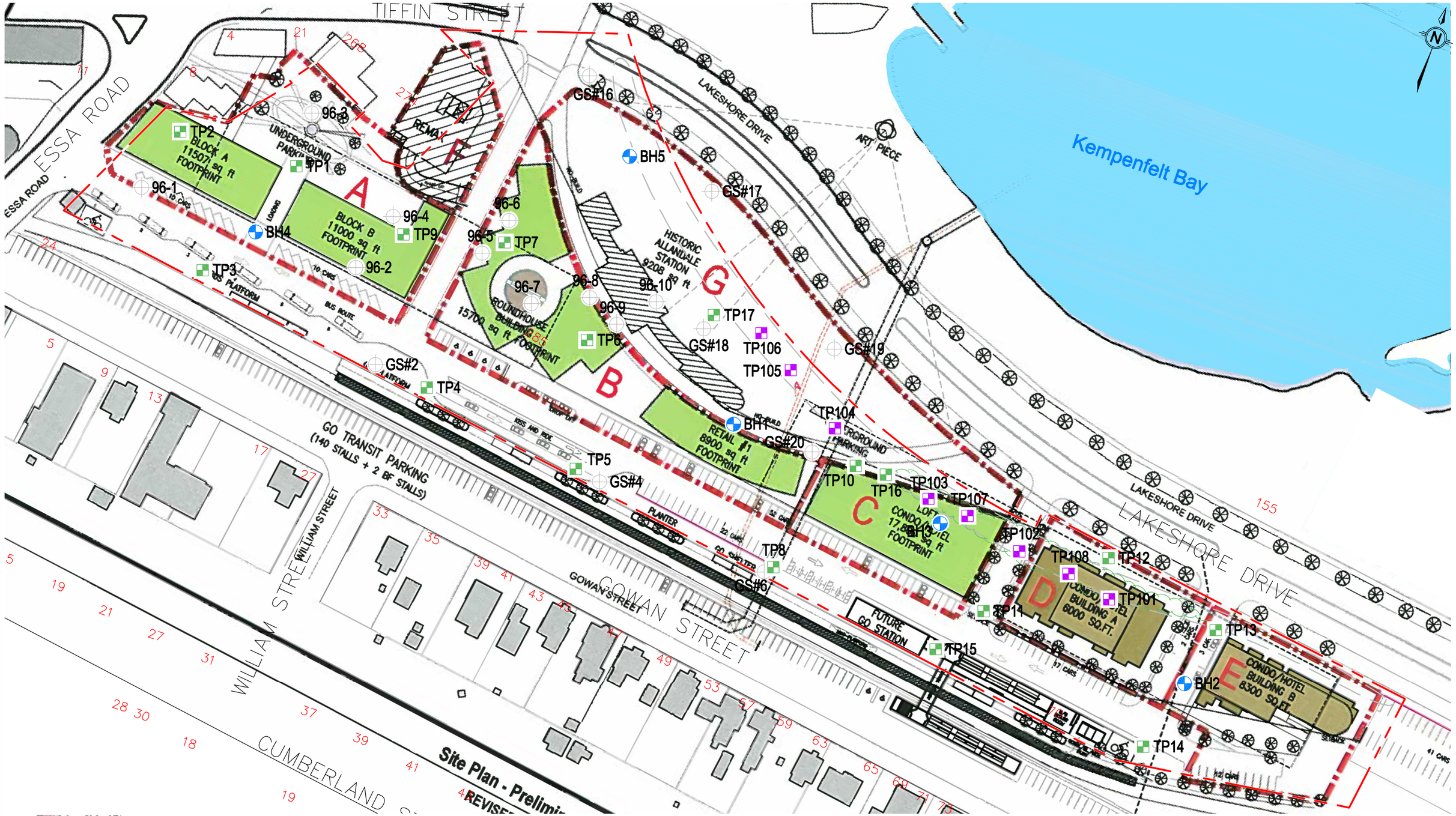
SITE LOCATION MAP

The City of BARRIE

ALLANDALE STATION
SUPPLEMENTAL SUBSURFACE
ENVIRONMENTAL INVESTIGATIONS

FIGURE 2

PLOT DATE: July 21, 2010
FILENAME: T:\Projects\2009\09-1170-6024 (Barrie, Allandale EA)\-CA-\0911706024CASITE.dwg



PROPOSED PARCEL BOUNDARY
SITE PROPERTY BOUNDARY
PREVIOUS BOREHOLE INVESTIGATION BY OTHERS
GOLDER MONITORING WELLS
GOLDER TEST PITS JANUARY 2010
GOLDER TEST PITS JUNE 2010

REFERENCE:

Site Plan from Strasman Architechs Inc. May 2010.

Site Plan Boundaries are Approximated to City of Barrie Municipal Mapping.

NOTES:

Projection UTM NAD 83 Zone 17
City of Barrie Municipal Mapping 2007

Golder Associates
Barrie, Ontario, Canada

SCALE	AS SHOWN
DATE	20 JUL 2010
DESIGN	
CAD	J REGIER
CHECK	
REVIEW	

FILE No. 0911706024CASITE.dwg
PROJECT No. 09-1170-6024 REV.

TITLE

PARCEL BREAKDOWN MAP

The City of BARRIE

ALLANDALE STATION
SUPPLEMENTAL SUBSURFACE
ENVIRONMENTAL INVESTIGATIONS

FIGURE 3

PLOT DATE: July 21, 2010
FILENAME: T:\Projects\2009\09-1170-6024 (Barrie, Allandale EA)\-CA-\0911706024CASITE.dwg

TABLES

Table 1
Waste Classification Results
Allandale Station Lands,
Barrie, Ontario

Sample ID	**RDL**	**Units**	**Leachate**	**TP107-2**
Laboratory ID	*na*	*na*	**Toxic**	1727641
Sampling Date	*na*	*na*	**Criteria**[1]	*29-Jun-10*
VOCs				
Benzene	0.020	mg/L	0.5	<0.020
Carbon Tetrachloride	0.020	mg/L	0.5	<0.020
Chlorobenzene	0.010	mg/L	8.0	<0.010
Chloroform	0.020	mg/L	10.0	<0.020
1,2-Dichlorobenzene	0.010	mg/L	20.0	<0.010
1,4-Dichlorobenzene	0.010	mg/L	0.5	<0.010
1,2-Dichloroethane	0.020	mg/L	0.5	<0.020
1,1-Dichloroethylene	0.020	mg/L	1.4	<0.020
Methylene Chloride	0.030	mg/L	5.0	<0.030
Methyl Ethyl Ketone	0.090	mg/L	200	<0.090
Tetrachloroethylene	0.050	mg/L	3.0	<0.050
Trichloroethylene	0.020	mg/L	5.0	<0.020
Vinyl Chloride	0.030	mg/L	0.2	<0.030
Inorganics				
Fluoride Leachate	0.05	mg/L	150	0.06
Cyanide Leachate	0.05	mg/L	20.0	<0.05
(Nitrate + Nitrite) as N Leachate	0.70	mg/L	1000	<0.70
Mercury Leachate	0.005	mg/L	0.1	<0.005
Arsenic Leachate	0.010	mg/L	2.5	<0.010
Barium Leachate	0.100	mg/L	100	0.389
Boron Leachate	0.050	mg/L	500	<0.050
Cadmium Leachate	0.010	mg/L	0.5	0.073
Chromium Leachate	0.010	mg/L	5.0	<0.010
Lead Leachate	0.010	mg/L	5.0	0.108
Selenium Leachate	0.010	mg/L	1.0	<0.010
Silver Leachate	0.010	mg/L	5.0	<0.010
Uranium Leachate	0.050	mg/L	10.0	<0.050
Polychlorinated Biphenyls	0.005	mg/L	0.3	<0.005
Benzo(a)pyrene	0.001	mg/L	0.001	<0.001
Ignitability	na	na	not ignitable	No

[1] Leachate Toxic Criteria - Schedule 4, O.Reg.558

RDL	Reportable Detection Limit
na	Not Applicable
1234	Exceeds the Leachate Toxic Criteria

Prepared by: CLG
Checked by: SMF

Table 2
Soil Analytical Results
Metals and Inorganics
Allandale Station Lands,
Barrie, Ontario

Sample I.D.					TP101-1	TP102-1	TP102-3	TP103-2	TP103-5	TP104-1	TP104-4	TP104-4D	TP105-1
Test Pit Number					TP101	TP102	TP102	TP103	TP103	TP104	TP104	TP104	TP105
Sampling Depth (m)					0.50 - 0.65	0.50 - 0.65	1.45 - 1.60	0.60 - 0.75	2.30 - 2.40	0.80 - 0.95	1.80 - 1.95	1.80 - 1.95	0.50 - 0.65
Gastechtor Reading (ppm)					<25	<25	<25	<25	<25	<25	<25	<25	<25
Sampling Date					29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10
Parameter	**Units**	**RDL**	**MOE Table 2 (ind/com/comm) Standard**	**New MOE Table 2 (ind/com/comm) Standard**								Field Replicate of TP104-4	
Metals													
Antimony	µg/g	0.8	40	40	20.8	4.9	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	1.3
Arsenic	µg/g	1	40	18	***23***	8	1	<1	<1	1	<1	<1	2
Barium	µg/g	2	1500	670	151	49	65	22	13	23	20	21	20
Beryllium	µg/g	0.5	1.2	52	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	5	-	120	22	7	7	<5	<5	<5	<5	<5	<5
Boron (Hot Water Extractable)	µg/g	0.10	2.0	2	0.99	0.60	0.61	0.12	0.15	0.12	<0.10	<0.10	0.22
Cadmium	µg/g	0.5	12	1.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	2	750	160	16	8	7	5	4	6	5	5	6
Cobalt	µg/g	0.5	80	80	7.7	4.1	1.6	1.8	1.4	2.2	1.8	1.8	1.9
Copper	µg/g	1	225	230	***269***	118	18	5	2	11	4	4	14
Lead	µg/g	1	1000	120	***720***	***171***	54	4	1	12	2	2	24
Molybdenum	µg/g	0.5	40	40	2.4	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	1	150	100	20	9	3	3	3	4	3	3	4
Selenium	µg/g	0.4	10	5.5	2.3	1.0	<0.4	0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Silver	µg/g	0.2	40	40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	0.4	32	3.3	0.8	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	ug/g	0.5	-	33	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	1	200	86	21	15	14	13	12	13	14	14	14
Zinc	µg/g	5	600	340	172	132	47	12	9	14	10	10	16
Chromium, Hexavalent	µg/g	0.2	8.0	8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.05	100	0.051	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mercury	µg/g	0.01	10	3.9	0.65	0.17	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Inorganics													
Electrical Conductivity (2:1)	mS/cm	0.002	1.4	1.4	0.188	0.164	0.137	0.084	0.090	0.089	0.075	0.074	0.093
Sodium Adsorption Ratio (2:1)	N/A	na	12	12	0.747	0.232	0.162	0.150	0.164	0.104	0.088	0.092	0.085
pH, 2:1 CaCl2 Extraction	pH Units	na	NV	NV	7.70	7.47	7.70	7.90	7.92	7.93	7.99	8.03	7.85

Notes:

1. Gastechtor Reading - measured in ppm (parts per million by volume)
2. mS/cm = MicroSiemens per Centimeter
3. µg/g = Microgram per Gram
4. RDL = Laboratory Reportable Detection Limit
5. na = not applicable
6. nr = not recorded (insufficient sample volume)
7. MOE Table 2 Standard = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, March 9, 2004" full depth generic site condition standards for industrial/commercial/community land use in a potable groundwater condition, coarse textured soil
8. New MOE Table 2 Standard = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, July 27, 2009" full depth generic site condition standards for industrial/commercial/community land use in a potable groundwater condition, coarse textured soil
9. Bold type and shaded indicates an exceedance of the old MOE Table 2 site condition (industrial/commercial/community) standard
10. Bold type and italicized indicates an exceedance of the new MOE Table 2 (industrial/commercial/community) site condition standard

Prepared by: CLG
Checked by: SMF

Table 2
Soil Analytical Results
Metals and Inorganics
Allandale Station Lands,
Barrie, Ontario

Sample I.D.					TP106-1	TP106-4	TP107-3	TP107-3D	TP107-4	TP108-1	TP108-4
Test Pit Number					TP106	TP106	TP107	TP107	TP107	TP108	TP108
Sampling Depth (m)					0.50 - 0.65	2.00 - 2.15	1.60 - 1.75	1.60 - 1.75	2.00 - 2.10	0.20 - 0.35	2.10 - 2.20
Gastechtor Reading (ppm)					<25	25	25	25	<25	<25	<25
Sampling Date					29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10
Parameter	**Units**	**RDL**	**MOE Table 2 (ind/com/comm) Standard**	**New MOE Table 2 (ind/com/comm) Standard**				Field Replicate of TP104-4			
Metals											
Antimony	*µg/g*	*0.8*	*40*	*40*	1.6	<0.8	<0.8	<0.8	<0.8	3.2	<0.8
Arsenic	*µg/g*	*1*	*40*	*18*	4	<1	1	2	<1	5	1
Barium	*µg/g*	*2*	*1500*	*670*	74	15	19	23	15	57	24
Beryllium	*µg/g*	*0.5*	*1.2*	*52*	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	*µg/g*	*5*	*-*	*120*	7	<5	<5	<5	<5	5	<5
Boron (Hot Water Extractable)	*µg/g*	*0.10*	*2.0*	*2*	0.38	0.28	0.20	0.23	0.20	0.35	0.34
Cadmium	*µg/g*	*0.5*	*12*	*1.9*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	*µg/g*	*2*	*750*	*160*	16	5	6	6	5	10	7
Cobalt	*µg/g*	*0.5*	*80*	*80*	5.5	1.5	1.7	1.7	1.6	6.1	2.0
Copper	*µg/g*	*1*	*225*	*230*	29	6	4	19	5	65	29
Lead	*µg/g*	*1*	*1000*	*120*	42	4	4	26	4	82	13
Molybdenum	*µg/g*	*0.5*	*40*	*40*	0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5
Nickel	*µg/g*	*1*	*150*	*100*	11	3	3	3	3	20	4
Selenium	*µg/g*	*0.4*	*10*	*5.5*	0.6	<0.4	<0.4	<0.4	<0.4	0.6	<0.4
Silver	*µg/g*	*0.2*	*40*	*40*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	*µg/g*	*0.4*	*32*	*3.3*	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	*ug/g*	*0.5*	*-*	*33*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	*µg/g*	*1*	*200*	*86*	26	11	16	15	14	20	16
Zinc	*µg/g*	*5*	*600*	*340*	56	10	14	21	10	136	29
Chromium, Hexavalent	*µg/g*	*0.2*	*8.0*	*8*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, Free	*µg/g*	*0.05*	*100*	*0.051*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mercury	*µg/g*	*0.01*	*10*	*3.9*	0.09	0.02	0.01	0.07	0.01	0.13	0.36
Inorganics											
Electrical Conductivity (2:1)	*mS/cm*	*0.002*	*1.4*	*1.4*	0.136	0.075	0.093	0.088	0.062	0.117	0.134
Sodium Adsorption Ratio (2:1)	*N/A*	*na*	*12*	*12*	0.112	0.116	0.086	0.108	0.104	0.192	0.192
pH, 2:1 CaCl2 Extraction	*pH Units*	*na*	*NV*	*NV*	7.71	7.86	7.73	7.69	7.76	7.51	7.73

Notes:

1. Gastechtor Reading - measured in ppm (parts per million by volume)
2. mS/cm = MicroSiemens per Centimeter
3. µg/g = Microgram per Gram
4. RDL = Laboratory Reportable Detection Limit
5. na = not applicable
6. nr = not recorded (insufficient sample volume)
7. MOE Table 2 Standard = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, March 9, 2004" full depth generic site condition standards for industrial/commercial/community land use in a potable groundwater condition, coarse textured soil
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Prepared by: CLG
Checked by: SMF

Table 3
Soil Analytical Results
PAHs
Allandale Station Lands,
Barrie, Ontario

Sample I.D.					TP101-1	TP102-1	TP102-3	TP103-2	TP103-5	TP104-1	TP104-4	TP104-4D	TP105-1
Test Pit Number					TP101	TP102	TP102	TP103	TP103	TP104	TP104	TP104	TP105
Sampling Depth (m)					0.50 - 0.65	0.50 - 0.65	1.45 - 1.60	0.60 - 0.75	2.30 - 2.40	0.80 - 0.95	1.80 - 1.95	1.80 - 1.95	0.50 - 0.65
Gastechtor Reading (ppm)					<25	<25	<25	<25	<25	<25	<25	<25	<25
Sampling Date					29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10
Parameter	**Units**	**RDL**	**MOE Table 2 (ind/com/comm) Standard**	**New MOE Table 2 (ind/com/comm) Standard**								Field Replicate of TP104-4	
Naphthalene	*µg/g*	*0.03*	*4.6*	*9.6*	1.80	0.42	<0.03	<0.03	<0.03	0.08	<0.03	<0.03	0.03
Acenaphthylene	*µg/g*	*0.02*	*130*	*0.15*	0.04	***1.4***	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	<0.02
Acenaphthene	*µg/g*	*0.03*	*15*	*21*	0.11	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Fluorene	*µg/g*	*0.02*	*340*	*62*	0.03	0.46	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	*µg/g*	*0.02*	*40*	*12*	1.1	***15***	<0.02	0.03	<0.02	0.15	<0.02	<0.02	0.04
Anthracene	*µg/g*	*0.02*	*28*	*0.67*	0.26	***2.9***	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	<0.02
Fluoranthene	*µg/g*	*0.02*	*40*	*9.6*	0.43	***25***	<0.02	0.02	<0.02	0.55	<0.02	<0.02	0.03
Pyrene	*µg/g*	*0.02*	*250*	*96*	0.40	21	<0.02	0.02	<0.02	0.53	<0.02	<0.02	0.03
Benzo(a)anthracene	*µg/g*	*0.02*	*6.6*	*0.96*	0.30	***17***	<0.02	<0.02	<0.02	0.36	<0.02	<0.02	0.02
Chrysene	*µg/g*	*0.02*	*17*	*9.6*	0.44	***16***	<0.02	<0.02	<0.02	0.39	<0.02	<0.02	0.04
Benzo(b)fluoranthene	*µg/g*	*0.02*	*18*	*0.96*	0.35	***6.8***	<0.02	<0.02	<0.02	0.31	<0.02	<0.02	0.05
Benzo(k)fluoranthene	*µg/g*	*0.02*	*18*	*0.96*	0.09	***4.2***	<0.02	<0.02	<0.02	0.15	<0.02	<0.02	0.02
Benzo(a)pyrene	*µg/g*	*0.02*	*1.9*	*0.3*	0.18	***11***	<0.02	<0.02	<0.02	***0.40***	<0.02	<0.02	0.06
Indeno(1,2,3-cd)pyrene	*µg/g*	*0.02*	*19*	*0.76*	0.19	***2.7***	<0.02	<0.02	<0.02	0.19	<0.02	<0.02	0.02
Dibenzo(a,h)anthracene	*µg/g*	*0.02*	*1.9*	*0.1*	0.05	***1.5***	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	<0.02
Benzo(g,h,i)perylene	*µg/g*	*0.02*	*40*	*9.6*	0.26	2.9	<0.02	<0.02	<0.02	0.22	<0.02	<0.02	0.03

Notes:

1. Gastechtor Reading - measured in ppm (parts per million by volume)
2. µg/g = Microgram per Gram
3. RDL = Laboratory Reportable Detection Limit
4. nr = not recorded (insufficient sample volume)
5. MOE Table 2 Standard = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, March 9, 2004" full depth generic site condition standards for industrial/commercial/community land use in a potable groundwater condition, coarse textured soil
6. New MOE Table 2 Standard New = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, July 27, 2009" full depth generic site condition standards for industrial/commercial/community land use in a potable groundwater condition, coarse textured soil
7. Bold type and shaded indicates an exceedance of the old MOE Table 2 site condition (industrial/commercial/community) standard
8. Bold type and italicized indicates an exceedance of the new MOE Table 2 (industrial/commercial/community) site condition standard

Prepared by: CLG
Checked by: SMF

Table 3
Soil Analytical Results
PAHs
Allandale Station Lands,
Barrie, Ontario

Sample I.D.					TP106-1	TP106-4	TP107-3	TP107-3D	TP107-4	TP108-1	TP108-4
Test Pit Number					TP106	TP106	TP107	TP107	TP107	TP108	TP108
Sampling Depth (m)					0.50 - 0.65	2.00 - 2.15	1.60 - 1.75	1.60 - 1.75	2.00 - 2.10	0.20 - 0.35	2.10 - 2.20
Gastechtor Reading (ppm)					<25	25	25	25	<25	<25	<25
Sampling Date					29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10	29-Jun-10
Parameter	**Units**	**RDL**	**MOE Table 2 (ind/com/comm) Standard**	**New MOE Table 2 (ind/com/comm) Standard**							
Naphthalene	*µg/g*	*0.03*	*4.6*	*9.6*	<0.03	<0.03	<0.03	<0.03	<0.03	0.20	<0.03
Acenaphthylene	*µg/g*	*0.02*	*130*	*0.15*	<0.02	<0.02	0.06	<0.02	<0.02	0.04	<0.02
Acenaphthene	*µg/g*	*0.03*	*15*	*21*	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Fluorene	*µg/g*	*0.02*	*340*	*62*	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02
Phenanthrene	*µg/g*	*0.02*	*40*	*12*	0.03	<0.02	0.48	0.11	<0.02	0.26	<0.02
Anthracene	*µg/g*	*0.02*	*28*	*0.67*	<0.02	<0.02	0.15	0.03	<0.02	0.09	<0.02
Fluoranthene	*µg/g*	*0.02*	*40*	*9.6*	0.03	<0.02	1.2	0.19	<0.02	0.24	<0.02
Pyrene	*µg/g*	*0.02*	*250*	*96*	0.02	<0.02	1.1	0.17	<0.02	0.24	<0.02
Benzo(a)anthracene	*µg/g*	*0.02*	*6.6*	*0.96*	<0.02	<0.02	0.80	0.12	<0.02	0.14	<0.02
Chrysene	*µg/g*	*0.02*	*17*	*9.6*	0.03	<0.02	0.72	0.12	<0.02	0.20	<0.02
Benzo(b)fluoranthene	*µg/g*	*0.02*	*18*	*0.96*	0.04	<0.02	0.53	0.10	<0.02	0.24	<0.02
Benzo(k)fluoranthene	*µg/g*	*0.02*	*18*	*0.96*	<0.02	<0.02	0.25	0.04	<0.02	0.07	<0.02
Benzo(a)pyrene	*µg/g*	*0.02*	*1.9*	*0.3*	0.03	<0.02	***0.74***	0.11	<0.02	0.16	<0.02
Indeno(1,2,3-cd)pyrene	*µg/g*	*0.02*	*19*	*0.76*	0.02	<0.02	0.25	0.05	<0.02	0.12	<0.02
Dibenzo(a,h)anthracene	*µg/g*	*0.02*	*1.9*	*0.1*	<0.02	<0.02	0.09	<0.02	<0.02	0.02	<0.02
Benzo(g,h,i)perylene	*µg/g*	*0.02*	*40*	*9.6*	0.02	<0.02	0.33	0.07	<0.02	0.17	<0.02

Notes:

1. Gastechtor Reading - measured in ppm (parts per million by volume)

2. µg/g = Microgram per Gram

3. RDL = Laboratory Reportable Detection Limit

4. nr = not recorded (insufficient sample volume)

5. MOE Table 2 Standard = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, March 9, 2004" full depth generic site condition standards for industrial/commercial/community land use in a potable groundwater condition, coarse textured soil

6. New MOE Table 2 Standard New = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, July 27, 2009" full depth generic site condition standards for industrial/commercial/community land use in a potable groundwater condition, coarse textured soil

7. Bold type and shaded indicates an exceedance of the old MOE Table 2 site condition (industrial/commercial/community) standard

8. Bold type and italicized indicates an exceedance of the new MOE Table 2 (industrial/commercial/community) site condition standard

Prepared by: CLG
Checked by: SMF

Table 4
Groundwater Analytical Results
Chromium
Allandale Station Lands,
Barrie, Ontario

Monitoring Well Location				MW1				MW2		MW3	
Sampling Date				22-Jun-10	22-Jun-10	12-Jul-10	12-Jul-10	22-Jun-10	12-Jul-10	22-Jun-10	12-Jul-10
Parameter	**Units**	**RDL**	**MOE Table 2 Standard**		**Field Duplicate of MW1 (MW100)**		**Field Duplicate of MW1 (MW200)**				
Gastechtor Reading (ppm	na	na	na	<25	<25			<25		<25	
Metals & Inorganics											
Chromium	µg/L	2.0	50	19.0	18.7	<2.0	<2.0	17.8	2.1	12.4	<2.0

Notes:

1. na = not applicable
2. nm = not measured
3. Gastechtor Reading - measured in parts per million (ppm) by volume, unless noted
4. NV = No value
5. µg/L = Microgram per Litre
6. RDL = Laboratory Reportable Detection Limit
7. Table 2 Standard = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, March 9, 2004 and July 29, 2007" full depth generic site condition standards for all land use, coarse textured soil
8. Bold type and shaded indicates an exceedance of the MOE Table 2 site condition standard

Prepared by: CLG
Checked by: SSJ

Table 4
Groundwater Analytical Results
Chromium
Allandale Station Lands,
Barrie, Ontario

Monitoring Well Location				MW4		MW5		Field Blank	Trip Blank
Sampling Date				22-Jun-10	12-Jul-10	22-Jun-10	12-Jul-10	12-Jul-10	Jul-10
Parameter	Units	RDL	MOE Table 2 Standard						
Gastechtor Reading (ppm	na	na	na	25		25		na	na
Metals & Inorganics									
Chromium	µg/L	2.0	50	7.7	2.0	4.8	3.3	<2.0	<2.0

Notes:

1. na = not applicable
2. nm = not measured
3. Gastechtor Reading - measured in parts per million (ppm) by volume, unless noted
4. NV = No value
5. µg/L = Microgram per Litre
6. RDL = Laboratory Reportable Detection Limit
7. Table 2 Standard = Ministry of Environment (MOE) "Soil, Groundwater, and Sediment Standards, Part XV.1 Environment Protection Act, March 9, 2004 and July 29, 2007" full depth generic site condition standards for all land use, coarse textured soil
8. Bold type and shaded indicates an exceedance of the MOE Table 2 site condition standard

Prepared by: CLG
Checked by: SSJ

APPENDIX A

Record of Test Pit Sheets

RECORD OF TEST PIT

Job Number:	09-1170-6024	**Project Location:**	Allandale Station, Barrie ON
Test Pit Number:	TP101	**Test Pit Location:**	East extent of berm and treed area
Date:	29-Jun-2010	**Logged by:**	C. Groves

Depth (m) From	Depth (m) To	Soil Description	Sample No.	Sample Depth (m)	Gastechtor Reading (ppm)	Requested Analysis
0.00	1.20	Dark brown, sand and gravel FILL, roots, organics Steel 0.25 m utility line identified at 1.0 m below grade	1	0.50 – 0.65	<25	Metals, inorganics, and PAHs
1.20	2.50	Light brown, silty sand, some gravel FILL	2	1.50 – 1.65	<25	
			3	2.35 – 2.50	<25	

Notes:

1. ppm = parts per million by volume.
2. Test pit dry.

RECORD OF TEST PIT

Job Number:	09-1170-6024	**Project Location:**	Allandale Station, Barrie ON
Test Pit Number:	TP102	**Test Pit Location:**	Approx. 100 m from east fence on berm
Date:	29-Jun-2010	**Logged by:**	C. Groves

Depth (m) From	Depth (m) To	Soil Description	Sample No.	Sample Depth (m)	Gastechtor Reading (ppm)	Requested Analysis
0.00	1.00	Dark brown, sand and gravel FILL, roots, organics Garbage bags noted in vicinity of utility corridor at 0.5 m below grade	1	0.50 – 0.65	<25	Metals, inorganics, and PAHs
1.00	1.60	light brown, silty sand, some gravel FILL	2	1.40 – 1.45	<25	
		2 steel utility pipes, 0.15 m and 0.25 m, identified at 1.40 m below grade SA2 collected from top of north pipe; SA3 collected from south side of pipe	3	1.45 – 1.60	<25	Metals, inorganics, and PAHs

Notes:

1. ppm = parts per million by volume.
2. Test pit dry.

RECORD OF TEST PIT

Job Number:	09-1170-6024	**Project Location:**	Allandale Station, Barrie ON
Test Pit Number:	TP103	**Test Pit Location:**	Approx. 150 m from east fence, 15 m from north fence, on berm
Date:	29-Jun-2010	**Logged by:**	C. Groves

Depth (m) From	Depth (m) To	Soil Description	Sample No.	Sample Depth (m)	Gastechtor Reading (ppm)	Requested Analysis
0.00	0.60	West half – dark brown sand and gravel FILL, roots, organics East half – clear stone	1	0.30 – 0.45	<25	
0.60	1.80	Light brown, silty sand, some gravel FILL SA2 from base of stone	2	0.60 - 0.75	<25	Metals, inorganics, and PAHs
		3 steel utility pipes, 0.05 m and 0.15 m and 0.25 m, identified at 1.5 m below grade	3	1.50 - 1.65	<25	
			4	1.70 – 1.85	<25	
1.80	2.40	Black organics, light brown silty sand, some gravel	5	2.30 – 2.40	<25	Metals, inorganics, and PAHs

Notes:

1. ppm = parts per million by volume.
2. Test pit dry.

RECORD OF TEST PIT

Job Number:	09-1170-6024	**Project Location:**	Allandale Station, Barrie ON
Test Pit Number:	TP104	**Test Pit Location:**	Approx. 200 m from east fence, 20 m from north fence, on berm
Date:	29-Jun-2010	**Logged by:**	C. Groves

Depth (m) From	Depth (m) To	Soil Description	Sample No.	Sample Depth (m)	Gastechtor Reading (ppm)	Requested Analysis
0.0	0.75	West half – dark brown sand and gravel FILL, roots, organics East half – clear stone				
0.75	1.80	Light brown, silty sand, some gravel FILL	1	0.80 – 0.95	<25	Metals, inorganics, and PAHs
		2 steel utility pipes, 0.05 m and 0.15 m, identified at 1.50 m below grade	2	1.00 – 1.15	<25	
		SA3 taken from beneath pipes	3	1.50 – 1.65	<25	
1.80	2.40	Light brown-orangey silty sand, some gravel	4 (4D)	1.80 – 1.95	<25	Metals, inorganics, and PAHs
		Bottom of fill, top of native at 1.80 m below grade	5	2.25 – 2.40	<25	

Notes:

1. ppm = parts per million by volume.
2. Test pit dry.

RECORD OF TEST PIT

Job Number:	09-1170-6024	**Project Location:**	Allandale Station, Barrie ON
Test Pit Number:	TP105	**Test Pit Location:**	Approx. 15 m from north fence, 20 m northeast of building, on berm
Date:	29-Jun-2010	**Logged by:**	C. Groves

Depth (m)		Soil Description	Sample	Sample Depth	Gastechtor Reading	Requested Analysis
From	To		No.	(m)	(ppm)	
0.00	0.70	Dark brown, sand and gravel FILL, roots, organics	1	0.50 – 0.65	<25	Metals, inorganics, and PAHs
0.70	1.70	Light brown, silty sand, some gravel FILL	2	1.00 – 1.15	<25	
			3	1.50 – 1.65	<25	
1.70	2.10	Light brown-orangey silty sand, some gravel	4	1.95 – 2.10	<25	

Notes:

1. ppm = parts per million by volume.
2. Test pit dry.

RECORD OF TEST PIT

Job Number:	09-1170-6024	**Project Location:**	Allandale Station, Barrie ON
Test Pit Number:	TP106	**Test Pit Location:**	West extent of berm, approx. 15 m from north fence
Date:	29-Jun-2010	**Logged by:**	C. Groves

Depth (m) From	Depth (m) To	Soil Description	Sample No.	Sample Depth (m)	Gastechtor Reading (ppm)	Requested Analysis
0.00	0.70	Dark brown, sand and gravel FILL, roots, organics	1	0.50 – 0.65	<25	Metals, inorganics, and PAHs
0.70	1.80	Light brown, silty sand, some gravel FILL	2	1.00 – 1.15	<25	
			3	1.50 – 1.65	<25	
1.80	2.20	Light brown-orangey silty sand, some gravel	4	2.00 – 2.15	25	Metals, inorganics, and PAHs

Notes:

1. ppm = parts per million by volume.
2. Test pit dry.

RECORD OF TEST PIT

Job Number:	09-1170-6024	**Project Location:**	Allandale Station, Barrie ON
Test Pit Number:	TP107	**Test Pit Location:**	Approx. 20 m west of TP103
Date:	29-Jun-2010	**Logged by:**	C. Groves

Depth (m) From	Depth (m) To	Soil Description	Sample No.	Sample Depth (m)	Gastechtor Reading (ppm)	Requested Analysis
0.00	0.60	Dark brown, sand and gravel FILL, roots, organics	1	0.50 – 0.65	<25	
0.60	1.60	Light brown, silty sand, some gravel FILL	2	1.30 – 1.45	25	Waste Classification
		2 steel utility pipes, 0.05 m and 0.15 m, identified at 1.30 m and 1.60 m below grade				
		SA2 taken from vicinity of 0.05 m pipe				
		SA3 taken from vicinity of 0.15 m pipe around metals staining				
			3 (3D)	1.60 – 1.75	25	Metals, inorganics, and PAHs
1.60	2.10	Light brown-orangey silty sand, some gravel	4	2.00 – 2.10	<25	Metals, inorganics, and PAHs

Notes:

1. ppm = parts per million by volume.
2. Test pit dry.

RECORD OF TEST PIT

Job Number:	09-1170-6024	**Project Location:**	Allandale Station, Barrie ON
Test Pit Number:	TP108	**Test Pit Location:**	Approx. 20 m east of TP102, 15 m west of TP101
Date:	29-Jun-2010	**Logged by:**	C. Groves

Depth (m) From	Depth (m) To	Soil Description	Sample No.	Sample Depth (m)	Gastechtor Reading (ppm)	Requested Analysis
0.0	0.50	Black sand and gravel FILL, roots	1	0.20 – 0.35	<25	Metals, inorganics, and PAHs
0.50	1.70	Light brown silty sand, some gravel FILL	2	0.80 – 0.95	<25	
			3	1.50 – 1.65	<25	
1.70	2.20	Light brown-orangey silty sand, some gravel	4	2.10 – 2.20	<25	Metals, inorganics, and PAHs

Notes:

1. ppm = parts per million by volume.
2. Test pit dry.

APPENDIX B

Laboratory Certificates of Analysis - Soil

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 10T415993
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

O. Reg. 153 Metals & Inorganics in Soil

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 12, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP101-1 1851425	TP102-3 1851428	TP103-2 1851430	TP103-5 1851431	TP104-1 1851433	TP104-4 1851434	TP104-4D 1851436	TP102-1 1851438
Antimony	µg/g	40	0.8	20.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	4.9
Arsenic	µg/g	40	1	23	1	<1	<1	1	<1	<1	8
Barium	µg/g	1500	2	151	65	22	13	23	20	21	49
Beryllium	µg/g	1.2	0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g		5	22	7	<5	<5	<5	<5	<5	7
Boron (Hot Water Extractable)	µg/g	2.0	0.10	0.99	0.61	0.12	0.15	0.12	<0.10	<0.10	0.60
Cadmium	µg/g	12	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	750	2	16	7	5	4	6	5	5	8
Cobalt	µg/g	80	0.5	7.7	1.6	1.8	1.4	2.2	1.8	1.8	4.1
Copper	µg/g	225	1	269	18	5	2	11	4	4	118
Lead	µg/g	1000	1	720	54	4	1	12	2	2	171
Molybdenum	µg/g	40	0.5	2.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8
Nickel	µg/g	150	1	20	3	3	3	4	3	3	9
Selenium	µg/g	10	0.4	2.3	<0.4	0.4	<0.4	<0.4	<0.4	<0.4	1.0
Silver	µg/g	40	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	32	0.4	0.8	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	ug/g		0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	200	1	21	14	13	12	13	14	14	15
Zinc	µg/g	600	5	172	47	12	9	14	10	10	132
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, Free	µg/g	100	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mercury	µg/g	10	0.01	0.65	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	0.17
Electrical Conductivity (2:1)	mS/cm	1.4	0.002	0.188	0.137	0.084	0.090	0.089	0.075	0.074	0.164
Sodium Adsorption Ratio (2:1)	N/A	12	N/A	0.747	0.162	0.150	0.164	0.104	0.088	0.092	0.232
pH, 2:1 CaCl2 Extraction	pH Units		N/A	7.70	7.70	7.90	7.92	7.93	7.99	8.03	7.47

Certified By: Elizabeth Rolokowska

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 10T415993
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

O. Reg. 153 Metals & Inorganics in Soil

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 12, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP105-1 1851448	TP106-1 1851450	TP106-4 1851452	TP107-3 1851454	TP107-3D 1851456	TP107-4 1851458	TP108-1 1851460
Antimony	µg/g	40	0.8	1.3	1.6	<0.8	<0.8	<0.8	<0.8	3.2
Arsenic	µg/g	40	1	2	4	<1	1	2	<1	5
Barium	µg/g	1500	2	20	74	15	19	23	15	57
Beryllium	µg/g	1.2	0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g		5	<5	7	<5	<5	<5	<5	5
Boron (Hot Water Extractable)	µg/g	2.0	0.10	0.22	0.38	0.28	0.20	0.23	0.20	0.35
Cadmium	µg/g	12	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	750	2	6	16	5	6	6	5	10
Cobalt	µg/g	80	0.5	1.9	5.5	1.5	1.7	1.7	1.6	6.1
Copper	µg/g	225	1	14	29	6	4	19	5	65
Lead	µg/g	1000	1	24	42	4	4	26	4	82
Molybdenum	µg/g	40	0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	0.7
Nickel	µg/g	150	1	4	11	3	3	3	3	20
Selenium	µg/g	10	0.4	<0.4	0.6	<0.4	<0.4	<0.4	<0.4	0.6
Silver	µg/g	40	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	32	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	ug/g		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	200	1	14	26	11	16	15	14	20
Zinc	µg/g	600	5	16	56	10	14	21	10	136
Chromium, Hexavalent	µg/g	8	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, Free	µg/g	100	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mercury	µg/g	10	0.01	0.03	0.09	0.02	0.01	0.07	0.01	0.13
Electrical Conductivity (2:1)	mS/cm	1.4	0.002	0.093	0.136	0.075	0.093	0.088	0.062	0.117
Sodium Adsorption Ratio (2:1)	N/A	12	N/A	0.085	0.112	0.116	0.086	0.108	0.104	0.192
pH, 2:1 CaCl2 Extraction	pH Units		N/A	7.85	7.71	7.86	7.73	7.69	7.76	7.51

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(ICC)

1851425-1851460 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Elizabeth Rolokowska

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 10T415993
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

O. Reg. 153 PAHs in Soil

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 12, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP101-1 1851425	TP102-3 1851428	TP103-2 1851430	TP103-5 1851431	TP104-1 1851433	TP104-4 1851434	TP104-4D 1851436	TP102-1 1851438
Naphthalene	µg/g	4.6	0.03	1.8	<0.03	<0.03	<0.03	0.08	<0.03	<0.03	0.42
Acenaphthylene	µg/g	130	0.02	0.04	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	1.4
Acenaphthene	µg/g	15	0.03	0.11	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05
Fluorene	µg/g	340	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.46
Phenanthrene	µg/g	40	0.02	1.1	<0.02	0.03	<0.02	0.15	<0.02	<0.02	15
Anthracene	µg/g	28	0.02	0.26	<0.02	<0.02	<0.02	0.08	<0.02	<0.02	2.9
Fluoranthene	µg/g	40	0.02	0.43	<0.02	0.02	<0.02	0.55	<0.02	<0.02	25
Pyrene	µg/g	250	0.02	0.40	<0.02	0.02	<0.02	0.53	<0.02	<0.02	21
Benzo(a)anthracene	µg/g	6.6	0.02	0.30	<0.02	<0.02	<0.02	0.36	<0.02	<0.02	17
Chrysene	µg/g	17	0.02	0.44	<0.02	<0.02	<0.02	0.39	<0.02	<0.02	16
Benzo(b)fluoranthene	µg/g	18	0.02	0.35	<0.02	<0.02	<0.02	0.31	<0.02	<0.02	6.8
Benzo(k)fluoranthene	µg/g	18	0.02	0.09	<0.02	<0.02	<0.02	0.15	<0.02	<0.02	4.2
Benzo(a)pyrene	µg/g	1.9	0.02	0.18	<0.02	<0.02	<0.02	0.40	<0.02	<0.02	11
Indeno(1,2,3-cd)pyrene	µg/g	19	0.02	0.19	<0.02	<0.02	<0.02	0.19	<0.02	<0.02	2.7
Dibenz(a,h)anthracene	µg/g	1.9	0.02	0.05	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	1.5
Benzo(g,h,i)perylene	µg/g	40	0.02	0.26	<0.02	<0.02	<0.02	0.22	<0.02	<0.02	2.9
2-and 1-methyl Naphthalene	µg/g	1.2	0.05	4.3	<0.05	<0.05	<0.05	0.10	<0.05	<0.05	0.49
Moisture Content	%		0.1	16.3	18.0	7.2	4.2	6.5	5.6	7.7	14.7
Surrogate	Unit	Acceptable Limits									
Chrysene-d12	%	60-130		99	85	107	97	83	79	86	91

Certified By:

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5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Certificate of Analysis

AGAT WORK ORDER: 10T415993
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

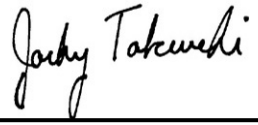
O. Reg. 153 PAHs in Soil

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 12, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP105-1 1851448	TP106-1 1851450	TP106-4 1851452	TP107-3 1851454	TP107-3D 1851456	TP107-4 1851458	TP108-1 1851460
Naphthalene	µg/g	4.6	0.03	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.20
Acenaphthylene	µg/g	130	0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	0.04
Acenaphthene	µg/g	15	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Fluorene	µg/g	340	0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
Phenanthrene	µg/g	40	0.02	0.04	0.03	<0.02	0.48	0.11	<0.02	0.26
Anthracene	µg/g	28	0.02	<0.02	<0.02	<0.02	0.15	0.03	<0.02	0.09
Fluoranthene	µg/g	40	0.02	0.03	0.03	<0.02	1.2	0.19	<0.02	0.24
Pyrene	µg/g	250	0.02	0.03	0.02	<0.02	1.1	0.17	<0.02	0.24
Benzo(a)anthracene	µg/g	6.6	0.02	0.02	<0.02	<0.02	0.80	0.12	<0.02	0.14
Chrysene	µg/g	17	0.02	0.04	0.03	<0.02	0.72	0.12	<0.02	0.20
Benzo(b)fluoranthene	µg/g	18	0.02	0.05	0.04	<0.02	0.53	0.10	<0.02	0.24
Benzo(k)fluoranthene	µg/g	18	0.02	0.02	<0.02	<0.02	0.25	0.04	<0.02	0.07
Benzo(a)pyrene	µg/g	1.9	0.02	0.06	0.03	<0.02	0.74	0.11	<0.02	0.16
Indeno(1,2,3-cd)pyrene	µg/g	19	0.02	0.02	0.02	<0.02	0.25	0.05	<0.02	0.12
Dibenz(a,h)anthracene	µg/g	1.9	0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.02	0.02
Benzo(g,h,i)perylene	µg/g	40	0.02	0.03	0.02	<0.02	0.33	0.07	<0.02	0.17
2-and 1-methyl Naphthalene	µg/g	1.2	0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	0.46
Moisture Content	%		0.1	8.0	15.4	20.9	8.1	9.7	8.5	10.1
Surrogate	Unit	Acceptable Limits								
Chrysene-d12	%	60-130		97	86	92	87	85	82	94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(ICC)
1851425-1851460 Results are based on the dry weight of the soil.

Certified By:



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Guideline Violation

AGAT WORK ORDER: 10T415993

PROJECT NO: 09-1170-6024

5835 COOPERS AVENUE
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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	GUIDEVALUE	RESULT
1851425	TP101-1	T2(ICC)	O. Reg. 153 Metals & Inorganics in Soil	Copper	225	269
1851425	TP101-1	T2(ICC)	O. Reg. 153 PAHs in Soil	2-and 1-methyl Naphthalene	1.2	4.3
1851438	TP102-1	T2(ICC)	O. Reg. 153 PAHs in Soil	Benzo(a)anthracene	6.6	17
1851438	TP102-1	T2(ICC)	O. Reg. 153 PAHs in Soil	Benzo(a)pyrene	1.9	11

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Certificate of Analysis

AGAT WORK ORDER: 10T415960
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

O. Reg. 153 Metals & Inorganics in Soil

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 09, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP108-4 1851172
Antimony	µg/g	40	0.8	<0.8
Arsenic	µg/g	40	1	1
Barium	µg/g	1500	2	24
Beryllium	µg/g	1.2	0.5	<0.5
Boron	µg/g		5	<5
Boron (Hot Water Extractable)	µg/g	2.0	0.10	0.34
Cadmium	µg/g	12	0.5	<0.5
Chromium	µg/g	750	2	7
Cobalt	µg/g	80	0.5	2.0
Copper	µg/g	225	1	29
Lead	µg/g	1000	1	13
Molybdenum	µg/g	40	0.5	<0.5
Nickel	µg/g	150	1	4
Selenium	µg/g	10	0.4	<0.4
Silver	µg/g	40	0.2	<0.2
Thallium	µg/g	32	0.4	<0.4
Uranium	ug/g		0.5	<0.5
Vanadium	µg/g	200	1	16
Zinc	µg/g	600	5	29
Chromium, Hexavalent	µg/g	8	0.2	<0.2
Cyanide, Free	µg/g	100	0.05	<0.05
Mercury	µg/g	10	0.01	0.36
Electrical Conductivity (2:1)	mS/cm	1.4	0.002	0.134
Sodium Adsorption Ratio (2:1)	N/A	12	N/A	0.192
pH, 2:1 CaCl2 Extraction	pH Units		N/A	7.73

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(ICC)

1851172 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Elizabeth Rolokowska

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 10T415960
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

O. Reg. 153 PAHs in Soil

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 09, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP108-4 1851172
Naphthalene	µg/g	4.6	0.03	<0.03
Acenaphthylene	µg/g	130	0.02	<0.02
Acenaphthene	µg/g	15	0.03	<0.03
Fluorene	µg/g	340	0.02	<0.02
Phenanthrene	µg/g	40	0.02	<0.02
Anthracene	µg/g	28	0.02	<0.02
Fluoranthene	µg/g	40	0.02	<0.02
Pyrene	µg/g	250	0.02	<0.02
Benzo(a)anthracene	µg/g	6.6	0.02	<0.02
Chrysene	µg/g	17	0.02	<0.02
Benzo(b)fluoranthene	µg/g	18	0.02	<0.02
Benzo(k)fluoranthene	µg/g	18	0.02	<0.02
Benzo(a)pyrene	µg/g	1.9	0.02	<0.02
Indeno(1,2,3-cd)pyrene	µg/g	19	0.02	<0.02
Dibenz(a,h)anthracene	µg/g	1.9	0.02	<0.02
Benzo(g,h,i)perylene	µg/g	40	0.02	<0.02
2-and 1-methyl Naphthalene	µg/g	1.2	0.05	<0.05
Moisture Content	%		0.1	8.5
Surrogate	**Unit**	**Acceptable Limits**		
Chrysene-d12	%	60-130		91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(ICC)
1851172 Results are based on the dry weight of the soil.

Certified By: Jordy Takewaki

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Certificate of Analysis

AGAT WORK ORDER: 10T415994

PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

Ignitability (Soil)

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 08, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP107-2 1851563
Ignitability				No

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

1851563 Wet soil sample with pebbles.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 10T415994
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

O. Reg. 558 Metals and Inorganics

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 08, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP107-2 1851563
Arsenic Leachate	mg/L	2.5	0.010	<0.010
Barium Leachate	mg/L	100	0.100	0.389
Boron Leachate	mg/L	500	0.050	<0.050
Cadmium Leachate	mg/L	0.5	0.010	0.073
Chromium Leachate	mg/L	5.0	0.010	<0.010
Lead Leachate	mg/L	5.0	0.010	0.108
Mercury Leachate	mg/L	0.1	0.005	<0.005
Selenium Leachate	mg/L	1.0	0.010	<0.010
Silver Leachate	mg/L	5.0	0.010	<0.010
Uranium Leachate	mg/L	10.0	0.050	<0.050
Fluoride Leachate	mg/L	150	0.05	0.06
Cyanide Leachate	mg/L	20.0	0.05	<0.05
(Nitrate + Nitrite) as N Leachate	mg/L	1000	0.70	<0.70

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Regulation 558

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 10T415994
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

ON Regulation 558 Benzo(a) pyrene

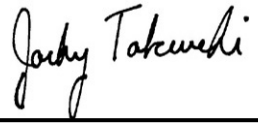
DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 08, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP107-2 1851563
Benzo(a)pyrene	mg/L	0.001	0.001	<0.001

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Regulation 558

1851563 The sample was leached according to Regulation 558 protocol. Analysis was performed on the leachate.

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 10T415994
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

ON Regulation 558 PCBs

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 08, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP107-2 1851563
Polychlorinated Biphenyls	mg/L	0.3	0.005	<0.005

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Regulation 558

1851563 The soil sample was leached using the Regulation 558 procedure. Analysis was performed on the leachate.

Certified By: Jordy Takewaki

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Certificate of Analysis

AGAT WORK ORDER: 10T415994
PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

ON Regulation 558 VOCs

DATE SAMPLED: Jun 29, 2010 | DATE RECEIVED: Jun 30, 2010 | DATE REPORTED: Jul 08, 2010 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	TP107-2 1851563
Vinyl Chloride	mg/L	0.2	0.030	<0.030
1,1 Dichloroethene	mg/L	1.4	0.020	<0.020
Dichloromethane	mg/L	5.0	0.030	<0.030
Methyl Ethyl Ketone	mg/L	200	0.090	<0.090
Chloroform	mg/L	10.0	0.020	<0.020
1,2-Dichloroethane	mg/L	0.5	0.020	<0.020
Carbon Tetrachloride	mg/L	0.5	0.020	<0.020
Benzene	mg/L	0.5	0.020	<0.020
Trichloroethene	mg/L	5.0	0.020	<0.020
Tetrachloroethene	mg/L	3.0	0.050	<0.050
Chlorobenzene	mg/L	8.0	0.010	<0.010
1,2-Dichlorobenzene	mg/L	20.0	0.010	<0.010
1,4-Dichlorobenzene	mg/L	0.5	0.010	<0.010
Surrogate	Unit	Acceptable Limits		
Toluene-d8	% Recovery	60-130		98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Reg. 558
1851563 Sample was prepared using Regulation 558 protocol and a zero headspace extractor.

Certified By: Jordy Takewaki

APPENDIX C

Laboratory Certificates of Analysis - Groundwater

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 10T414093

PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

Chromium (Water)

DATE SAMPLED: Jun 22, 2010 | DATE RECEIVED: Jun 23, 2010 | DATE REPORTED: Jun 30, 2010 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW1 1840029	MW100 1840030	MW2 1840031	MW3 1840032	MW4 1840033	MW5 1840034
Chromium	µg/L	50	2.0	19.0	18.7	17.8	12.4	7.7	4.8

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW)

Certified By:

AGAT Laboratories

small blue

5835 Coopers Avenue
Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100; Fax: 905-712-5122
Toll free: 800-856-6261
www.agatlabs.com http://webearth.agatlabs.com

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: ☑ Good ☐ Poor (complete "notes")
Arrival Temperature: 5.3°C AGAT WO #: 10741409 3
Notes:

Client Information
Company: Golder
Contact: Christi Groves
Address: 121 Commerce Park Drive Barrie, ON L4N 8X1
Phone: (705) 722 4492 Fax: (705) 722 3786
Project: 09-1170-6024 PO:
AGAT Quotation #:
Please note, if quotation number is not provided, client will be billed full price for analysis.

Invoice To Same as Above? Yes/No (circle)
Company:
Contact:
Address:
Phone: Fax:

Report Information - reports to be sent to:
1. Name: Christi Groves
Email: cgroves@golder.com
2. Name:
Email:

Regulatory Requirements
☑ Regulation 153 Table 2 (Indicate one) ☑ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (check one) ☑ Coarse ☐ Med/Fine
☐ Sewer Use Region (Indicate one) ☐ Sanitary ☐ Storm
☐ Regulation 558 ☐ CCME ☐ Other (indicate)
☐ Prov. Water Quality Objectives (PWQO)
☐ Drinking Water (circle one) 170/243/252
Is this a drinking water sample (potable water intended for human consumption)? ☐ Yes ☑ No (If "Yes" please use the Drinking Water Chain of Custody Record)

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☐ Results by fax

Turnaround Time (TAT) Required*
Regular TAT: ☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
Rush Surcharges Apply
☐ 3 to 5 Working Days
☐ 1 to 3 Working Days
☐ 1 Working Day
OR
DATE REQUIRED (Rush surcharges may apply):
*TAT is exclusive of weekends and statutory holidays

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/ Sample Information	Metals and Inorganics	Metal Scan (exclud. Hg, B, Cr6)	CCME Fractions 1 to 4	VOCs	PAHs	PCBs	TCLP Metals/Inorganics	TCLP	Storm Sewer Use	Sanitary Sewer Use	Cr					LABORATORY USE ONLY LAB SAMPLE ID
MW1	22-June-10	11:55	GW	1	metals filtered											✓					
MW100	22-June-10	11:55	GW	1												✓					
MW2	22-June-10	12:45	GW	1												✓					
MW3	22-June-10	12:35	GW	1												✓					
MW4	22-June-10	12:10	GW	1												✓					
MW5	22-June-10	1:15	GW	1												✓					

Samples Relinquished By (print name & sign): Sean Flaherty
Date/Time: 22-June-10 3:00
Samples Received By (print name & sign): Peter Paulo Bellefleros
Date/Time: June 23/10:38
Samples Relinquished By (print name & sign):
Date/Time:
Samples Received By (print name & sign):
Date/Time:

Pink Copy – Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 111615

AGAT Laboratories

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FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 10T418707

PROJECT NO: 09-1170-6024

CLIENT NAME: GOLDER ASSOCIATES LTD.

ATTENTION TO: Christi Groves

Chromium (Water)

DATE SAMPLED: Jul 12, 2010 | DATE RECEIVED: Jul 13, 2010 | DATE REPORTED: Jul 21, 2010 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW1 1868717	MW200 1868724	MW2 1868725	MW3 1868726	MW4 1868727	MW5 1868728	Field Blank 1868729	Trip Blank 1868730
Chromium	µg/L	50	2.0	<2.0	<2.0	2.1	<2.0	2.0	3.3	<2.0	<2.0

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to T2(PGW)

Certified By:

AGAT Laboratories

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Mississauga, Ontario; L4Z 1Y2
Phone: 905-712-5100; Fax: 905-712-5122
Toll free: 800-856-6261
www.agatlabs.com http://webearth.agatlabs.com

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 4.4C AGAT WO #: 10741870?
Notes:

Client Information
Company: Golder Associates Ltd.
Contact: Christi Groves
Address: 121 Commerce Park Dr.
Barrie, ON L4N 8X1
Phone: 705-722-4492 Fax: 705-722-3786
Project: 09-1170-6024 PO:
AGAT Quotation #:
Please note, if quotation number is not provided, client will be billed full price for analysis.

Invoice To Same as Above? Yes/No (circle)
Company:
Contact:
Address:
Phone: Fax:

Report Information - reports to be sent to:
1. Name: Christi Groves
Email: cgroves@golder.com
2. Name:
Email:

Regulatory Requirements
☒ Regulation 153 Table 2 (Indicate one) ☒ Ind/Com ☐ Res/Park ☐ Agriculture
☐ Sewer Use Region ____ (Indicate one) ☐ Sanitary ☐ Storm
☐ Regulation 558 ☐ CCME ☐ Other (indicate) ____
Soil Texture (check one) ☒ Coarse ☐ Med/Fine
☐ Prov. Water Quality Objectives (PWQO)
☐ Drinking Water (circle one) 170/243/252

Is this a drinking water sample (potable water intended for human consumption)? ☐ Yes ☒ No (If "Yes" please use the Drinking Water Chain of Custody Record)

Report Format
☐ Single Sample per page
☒ Multiple Samples per page
☐ Results by fax

Turnaround Time (TAT) Required*
Regular TAT: ☒ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
Rush Surcharges Apply
☐ 3 to 5 Working Days
☐ 1 to 3 Working Days
☐ 1 Working Day
OR
DATE REQUIRED (Rush surcharges may apply):
*TAT is exclusive of weekends and statutory holidays

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/ Sample Information	Metals and Inorganics	Metal Scan (exclud. Hg, B, Cr6)	CCME Fractions 1 to 4	VOCs	PAHs	PCBs	TCLP Metals/Inorganics	TCLP	Storm Sewer Use	Sanitary Sewer Use	CL	LABORATORY USE ONLY LAB SAMPLE ID
MW1	12-July-10	1:00	GW	1												X	
MW200	"	1:00	"	1												X	
MW2	"	1:20	"	1												X	
MW3	"	1:30	"	1												X	
MW4	"	1:45	"	1												X	
MW5	"	2:10	"	1												X	
Field Blank	12-July-10	1:00	—	1												X	
Trip Blank	—	—	—	1												X	

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Sean Flaherty	12-July-10 3:00		8:30 July 13/10
Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time

Pink Copy - Client
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White Copy - AGAT

PAGE 1 of 1
NO: 111616

APPENDIX D

Analytical Results Vs. Site Condition Standard

Site Condition Standard ("SCS")	Location	Exceedance	Depth (mbgs)	Soil or Groundwater	Parcel
MOE Table 2 industrial/commercial/ community SCS	TP16-1.50	Mercury	1.50 – 1.65	Soil	B/G
	TP101-1	Copper	0.50 – 0.65	Soil	D
	TP102-1	Benzo(a)anthracene, benzo(a)pyrene	0.50 – 0.65	Soil	East roadway/D
	MW1	Sodium, chloride	NA	Groundwater	B/G
	MW2	Sodium, chloride	NA	Groundwater	D/E
	MW3	Sodium, chloride	NA	Groundwater	C
	MW4	Sodium, chloride	NA	Groundwater	A/Future GO Station
New MOE Table 2 industrial/commercial/ community SCS	TP2-0.40	Lead	0.40 – 0.55	Soil	A
	TP8-0.10	Lead	0.10 – 0.25	Soil	Future GO Station
	TP13-0.25	Lead, acenaphthylene, benzo(a)pyrene	0.25 – 0.40	Soil	D/E
	TP16-1.50	Lead, mercury, benzo(a)pyrene	1.50 – 1.65	Soil	C/G
	TP101-1	Arsenic, copper, lead	0.50 – 0.65	Soil	D
	TP102-1	Lead, acenaphthylene, phenanthrene, anthracene, fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene	0.50 – 0.65	Soil	East roadway/D
	TP104-1	Benzo(a)pyrene	0.80 – 0.95	Soil	G
	TP107-3	Benzo(a)pyrene	1.60 – 1.75	Soil	C
	MW1	Sodium, chloride	NA	Groundwater	B/G
	MW4	Sodium, chloride	NA	Groundwater	A/Future GO Station

Site Condition Standard ("SCS")	Location	Exceedance	Depth (mbgs)	Soil or Groundwater	Parcel
MOE Table 2 residential/parkland/ institutional SCS	TP1-0.40	Electrical conductivity	0.40 – 0.55	Soil	A
	TP2-0.40	Lead	0.40 – 0.55	Soil	A
	TP8-0.10	Lead	0.10 – 0.25	Soil	Future GO Station
	TP16-1.50	Lead, mercury	1.50 – 1.65	Soil	B/G
	TP101-1	Antimony, arsenic, copper, lead	0.50 – 0.65	Soil	D
	TP102-1	Benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene	0.50 – 0.65	Soil	D
	MW1	Sodium, chloride	NA	Groundwater	B/G
	MW2	Sodium, chloride	NA	Groundwater	D/E
	MW3	Sodium, chloride	NA	Groundwater	C
	MW4	Sodium, chloride	NA	Groundwater	A/Future GO Station

Site Condition Standard ("SCS")	Location	Exceedance	Depth (mbgs)	Soil or Groundwater	Parcel
New MOE Table 2 residential/parkland/ institutional SCS	TP1-0.40	Electrical conductivity	0.40 – 0.55	Soil	A
	TP2-0.40	Lead, mercury	0.40 – 0.55	Soil	A
	TP5-0.50	Barium	0.50 – 0.65	Soil	Future GO Station
	TP6-0.60	Mercury	0.60 – 0.75	Soil	B
	TP8-0.10	Lead	0.10 – 0.25	Soil	Future GO Station
	TP13-0.25	Lead	0.25 – 0.40	Soil	D/E
	TP16-1.50	Antimony, cadmium, copper, lead, mercury	1.50 – 1.65	Soil	G
	TP101-1	Antimony, arsenic, copper, lead, mercury, naphthalene	0.50 – 0.65	Soil	D
	TP102-1	Lead, acenaphthylene, phenanthrene, anthracene, fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene	0.50 – 0.65	Soil	East Roadway/D
	TP104-1	Benzo(a)pyrene	0.80 – 0.95	Soil	G
	TP107-3	Fluoranthene, benzo(a)anthracene, benzo(a)pyrene	1.60 – 1.75	Soil	C
	TP108-4	Mercury	1.95 – 2.10	Soil	D
	MW1	Sodium, chloride	NA	Groundwater	B/G
	MW4	Sodium, chloride	NA	Groundwater	A/Future GO Station

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

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

Golder Associates