



December 2010



## REPORT ON

# Phase I Environmental Site Assessment Part of Northeast Half and Southwest Half of Lot 25, Concession 10 Geographic Township of Goulbourn City of Ottawa, Ontario

**Submitted to:**  
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REPORT

**Report Number:** 10-1121-0176 (1000/2000)

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### Executive Summary

Golder Associates Ltd. (hereafter referred to as “Golder Associates”) was retained by Tartan Land Corporation (hereafter referred to as “Tartan”) to conduct a Phase I Environmental Site Assessment (hereafter referred to as “Phase I ESA”) of the property located as part of the northeast half and the southwest half of Lot 25 Concession 10 in Geographic Township of Goulbourn, within City of Ottawa, Ontario (hereafter referred to as the “Site”). The Site is currently occupied by vacant lands in the east portion and densely covered by trees at the west end. The Site is proposed to be used for future residential development.

*The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.*

The Phase I ESA was completed in general accordance with the November 2001 Canadian Standards Association document entitled Phase I Environmental Site Assessment, Z768 01 (R2006). The scope of work was described in the Golder Associates Proposal nNo. P0-1121-0176 dated July 15, 2010.

Based on the information obtained during the Phase I ESA, there are no issues of potential environmental concern identified related to potential subsurface impacts on soil and/or groundwater.



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# 1.0 INTRODUCTION AND BACKGROUND

## 1.1 General

Golder Associates Ltd. (hereafter referred to as “Golder Associates”) was retained by Tartan Land Corporation (hereafter referred to as “Tartan”) to conduct a Phase I Environmental Site Assessment (hereafter referred to as “Phase I ESA”) of the property located as part of the northeast half and the southwest half of Lot 25 Concession 10 in Geographic Township of Goulbourn, within City of Ottawa, Ontario (hereafter referred to as the “Site”), as shown on Figures 1 and 2. The Site is currently occupied by vacant lands on the east portion and densely covered by trees at the west side. The Site is proposed to be used for future residential development.

The Phase I ESA was completed in general accordance with the November 2001 Canadian Standards Association document entitled Phase I Environmental Site Assessment, Z768 01 (R2006). The objective of the Phase I ESA is to document current Site conditions and to identify existing and former operations/activities in the site and its vicinity that could potentially impact on construction planning and costs in terms of their potential environmental condition as it pertains to contaminants.

Appendix A includes resumes of Golder Associates staff involved with this Phase I ESA.

## 1.2 Scope of Work

The Phase I ESA was completed based on the scope of work described in the Golder Associates Proposal No. P0-1121-0176 dated July 15, 2010. The Phase I ESA consisted of the following components:

- A records review;
- Review of a previous Phase I ESA report for the Site;
- Requests to the regulatory bodies (City of Ottawa, MOE and the Technical Standards and Safety Authority);
- A site visit;
- An evaluation of information obtained; and,
- Preparation of this report.

This Phase I ESA report is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of the site visit. This Phase I ESA did not include an evaluation of operational or management systems compliance. Furthermore, Golder did not conduct a health and safety, engineering or structural evaluation of the Site.

No intrusive sampling or analytical testing for materials/substances of potential environmental concern (i.e., polychlorinated biphenyls, lead, mercury, asbestos-containing materials, mould, etc.) was undertaken as part of this Phase I ESA. No soil, water, liquid, gas, product or chemical sampling and analytical testing at or in the vicinity of the Site were conducted as part of this assessment.

A “designated substance”, as defined in The Occupational Health and Safety Act (hereafter referred to as “OHSA”) and the Workplace Hazardous Material Information System (hereafter referred to as “WHMIS”) regulation (1990) is a “biological, chemical or physical agent or combination thereof prescribed as a designated substance to which the exposure of a worker is prohibited, regulated, restricted, limited, or controlled.” Sections of this report discuss the designated substances normally reviewed as part of a Phase I ESA.



## 2.0 SITE DESCRIPTION

### 2.1 Site Setting and Activities

The general location of the Site is shown on the Key Plan, Figure 1 and the general Site configuration is shown on the Site Plan, Figure 2. Characteristics of the Site, based on the Golder Associates Site visit carried out on November 11, 2010 are as follows:

Site Characteristics	
<b>Use</b>	Currently undeveloped occupied by vacant lands in the east half portion and thick tree coverage in the west half portion.
<b>Address or Location</b>	north of Fernbank Road and west of Shea Road in Ottawa, Ontario
<b>Setting</b>	The Site is bounded by Shea Road to the east and Fernbank Road to the south; The Site's north boundary is defined by the easterly extension of Evelyn Street followed by the parking lot of Goulbourn Recreation Complex; The Site is adjoining residential lands in the west; Two small parcels of land on the south side of the Site are not included in the development; and, Site access is via Shea Road in the east and via the dead end of Evelyn Street or Samuel Mann Avenue in the west.
<b>Legal Description</b>	Part of the northeast half and the southwest half of Lot 25, Concession 10, Geographic Township of Goulbourn, City of Ottawa, Ontario.
<b>Configuration</b>	Irregular shaped, refer to Figure 1 for details.
<b>Services</b>	The Site is currently not developed, therefore, is currently not serviced.
<b>Presence of Fill Material</b>	Several piles of fill material were observed on Site during the Site visit on November 12, 2010.
<b>Other Comments</b>	None
Exterior Areas	
<b>Gravel Areas</b>	None
<b>Landscaped/Grassed Areas</b>	Natural wooded areas are present in the west half of the Site.
<b>Paved Areas</b>	None
<b>Treed Areas</b>	Naturally treed areas are present in the west half of the Site.
<b>Exterior Storage Tanks</b>	None
<b>Other Exterior Observations</b>	The Site is generally flat. The east half of the Site is at grade with Shea Road; it is approximately 1 – 2 m lower along the west Site boundary compared to the residential area to the west.

There are no buildings on Site.



## 2.2 Regional Geological Setting

The following maps/reports were reviewed to determine the general geological and topographical conditions in the area of the Site:

- *Golder Associates Ltd. GIS Database* (Reference - Digital Basemap Data supplied by DMTI Spatial Inc., Canmap, 2009);
- Map 1506A, *Surficial Geology*, Ottawa, Ontario, Belanger J. R., Urban Geology of the National Capital Area, Geological Survey of Canada, Open file D3256, 2001; and,
- Map 1508A. *Generalized Bedrock Geology*, Ottawa, Ontario, Belanger J. R., Urban Geology of the National Capital Area, Geological Survey of Canada, Open file D3256, 2001.

Geological information within the Site [200 metres (m)], based on the above, is as follows:

Geological Information	
<b>Native Subsurface Soils (expected)</b>	<ul style="list-style-type: none"> <li>■ Bedrock (limestone, dolomite and sandstone) in the central part of the Site along the diagonal line from north to south;</li> <li>■ Near shore sediments (fine to medium grained sand) in the east corner of the Site;</li> <li>■ Till, plain with local relief (&lt;5 m) in the east portion of the Site; and,</li> <li>■ Organic Deposits (muck and peat) in the west portion of the Site</li> </ul>
<b>Depth to Bedrock (approximately)</b>	<ul style="list-style-type: none"> <li>■ 0 – 1 m along the Site diagonal line from north to south;</li> <li>■ 3 – 5 m in the west and east corners of the Site; and,</li> <li>■ 2 – 3 m at other parts of the Site.</li> </ul>
<b>Type of Bedrock (expected)</b>	Gull River Formation (interbedded silty dolomite, lithographic to fine crystalline limestone, oolitic limestone, shale, and fine-grained calceous quartz sandstone)
<b>Topography (expected)</b>	The Site is generally flat. The east half of the Site is at grade with Shea Road; it is approximately 1 – 2 m lower along the west Site boundary compared to the residential development to the west.
<b>Regional Groundwater Flow (inferred)</b>	Northwest, towards a creek with unknown name
<b>Nearest Open Water Body</b>	A creek with unknown name approximately 1.6 km northwest of the Site
<b>Prominent Physical Features</b>	None

It should be noted that local groundwater flow may be influenced by underground utilities (i.e., service trenches) and building structures. For example, the gravel pack used around utilities, such as water lines, can act as interceptors and redirect groundwater flow along the direction of the pipe. If a more accurate description of geology, groundwater flow and groundwater quality is required, a subsurface investigation would be necessary.



### 3.0 RECORDS REVIEW

#### 3.1 Historical Information Review

Historical information for the Site was obtained from the following sources:

##### Summary of Historical Information Sources

##### Aerial Photograph Review

Year	1945	1959	1976	1984	1996	2002	2005	2008
No.	A9558-39	A16525-11	A24332-62	A26459-221	A31734-75	--	--	--
Scale	1:20,000	1:17,000	1:12000	1:12,000	1:15,000	1:9,700	1:13,600	1:9,700
Source	National Air Photo Library (NAPL)					City of Ottawa eMap website		

##### Chain of Title Search

Not included in the scope of work

##### Review of Fire Insurance Plan Records

Source	National Archives, Ottawa
Year(s)	None available for the Site

##### Review of Street Directories

1999/2000, 2004/2005, 2009/2010

##### Previous Environmental Report

Report # 03-1120-407 entitled "Phase I ESA, Part of Northeast Half and Southwest Half of Lot 25, Concession 10, Goulbourn, Ottawa, Ontario", prepared for Tartan Development Corporation by Golder Associates, dated February 2003.

#### 3.1.1 Aerial Photograph Review

Selected aerial photographs for the Site were obtained from the NAPL in Ottawa, Ontario by Golder personnel. The review of the aerial photographs was conducted to develop a general history of the development of the alignments and surrounding properties. Aerial photographs may be at a scale that limits a detailed review of the Site and its vicinity. Information obtained from the aerial photographs is summarized as follows:

Year Scale	Site	Surrounding Property Direction			
		North	East	South	West
1945 1:20,000	The Site is primarily occupied by agriculture lands with some tree coverage in the northeast and west portions. The two off-site parcels of land are present on the north side of Fernbank Road. A farm and associated building are	Treed land.	Agriculture lands.	Fernbank Road followed by agriculture lands.	Agriculture lands.





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Year Scale	Site	Surrounding Property Direction			
		North	East	South	West
	present in the eastern of the two southern off-site parcels.				
1958 1:30,000	As per 1945.	As per 1945.	As per 1945.	As per 1945.	As per 1945.
1976 1:12,000	As per 1958.	As per 1958.	As per 1958.	As per 1958.	As per 1958.
1984 1:12,000	The Site is occupied by farm lands in the south and thick treed area in the north. The two off-site cut-out parcels of land are visible on the north side of Fernbank Road. A farm and associated buildings are present in the eastern of the two southern off-site parcels.	Densely treed area followed by residential houses.	Agriculture lands and treed area.	As per 1976.	Residential houses.
1996 1:15,000	The Site is primarily occupied by treed lands. A farm and associated building are present in the eastern of the two southern off-site cut-out parcels.	As per 1984.	Densely treed areas and a hydro corridor.	As per 1984.	As per 1984.
2002 1:9,700	As per 1996.	An institution with sports fields is present immediately north of the Site.	As per 1996.	As per 1996.	As per 1996.
2005 1:13,600	As per 2002.	As per 2002.	As per 2002.	As per 2002.	As per 2002.
2008 1:9,700	As per 2005, except that the trees on eastern half of the Site are cleared and that parcel of land is now vacant.	As per 2005.	As per 2005.	As per 2005.	As per 2005.

The review of aerial photographs of the Site indicates that the Site has never been developed. Properties west adjacent to the Site were developed in the 1980's as residential area and land immediately northeast of the Site was developed in early 2000's as institutional area. Trees in the eastern portion of the Site were cleared between 2005 and 2008. The aerial photographs review did not indicate issues of potential environmental concern.



3.1.2 Chain of Title Search

A chain of title search was not included in the scope of work.

3.1.3 Review of Fire Insurance Plan (FIP) Records

Research was carried out at the National Archives in Ottawa, Ontario to review fire insurance plans or drawings for the Site. No fire insurance plans are available for the Site.

3.1.4 Review of Street Directories

Golder conducted a review of relevant and available City Directories available at the National Archives to assess the occupancy history of the Site. There is no civic address registered for the Site. Based on the review of street directories there are no issues of potential environmental concern with regard to the historical occupancy of the surrounding lands.

Street directory listings are based on voluntary responses from property owners and/or occupants. As such, a non-response or non-listing for an address does not necessarily indicate that the address was vacant or unoccupied at that time. Furthermore, municipal numbers are subject to change over time, particularly when large lots of land are legally severed.

3.1.5 Previous Environmental Reports

A previous Phase I ESA report (03-1120-407) for the same property was prepared by Golder Associates for Tartan Development Corporation, dated February 2003 and was reviewed as part of this Phase I ESA. The review of the above-noted report indicated that a suspect area of surficial fill was presented in the west central portion of the Site, adjacent to the dead end of Samuel Mann Avenue. The presence of the fill was an issue of potential environmental concern related to subsurface impacts on soil and/or groundwater.

3.2 Regulatory Information Review

Regulatory information requests and reviews for the Site included the following sources:

Summary of Regulatory Information

Regulatory Agencies and/or Government Departments Contacted

- Ontario Ministry of Environment (MOE)
Technical Standards Safety Authority (TSSA)
City of Ottawa (City)

MOE Databases

- MOE Database on PCB Storage Sites, 2000\*;
Waste Disposal Site Inventory, June 1991;
MOE Database on Brownfields Environmental Site Registry – Records of Site Condition (RSC), October 2004;
Inventory of Coal Gasification Plant Waste Sites in Ontario, April 1987; and,
MOE Database on Registered Waste Generators 2001\*.

\*Note: The information extracted from the MOE PCB Storage Sites and Waste Generator databases was used by Golder under license with the Ontario Ministry of Environment, Queens Printer for Ontario (2000 and 2001).



### 3.2.1 Ontario Ministry of Environment Correspondence

The Ontario Ministry of Environment (MOE) was contacted (refer to copy of correspondence in Appendix B) to provide an Index Report with respect to active orders and approvals for the Site as detailed below:

- Active orders under the Environmental Protection Act (EPA), the Ontario Water Resources Act (OWRA), and the Pesticides Act (PA); and,
- Approvals under Sections 9 and 39 of the EPA as well as Sections 52 and 53 of the OWRA.

A formal response from the MOE was received on December 6, 2010. Given that the Site does not have a civic address, the request was made based on the Site's legal description. The response indicated that no Active Orders have been issued for Lot 25 Concession 10, Township of Goulbourn and no Approvals (for air emissions, Waste Management, Water and Municipal/Private/Industrial Sewage) have been issued for Lot 25 Concession 10, Township of Goulbourn.

### 3.2.2 Technical Standards and Safety Authority Correspondence

The Technical Standards Safety Authority (TSSA) was contacted (refer to copy of correspondence in Appendix B) to determine if any bulk fuel underground storage tanks (USTs) were registered for the Site and for addresses adjacent to the Site where existence of USTs were suspected. In addition, inquiries were made to determine if there are records of fuel spills, accidents or incidents on or near those addresses. The TSSA has maintained records since 1987 but it should be noted that there is currently no requirement in Ontario to register private underground fuel oil storage tanks for heating purposes.

The TSSA responded that there is no record in the database of any fuel storage tanks on the Site and for addresses adjacent to the Site except for a record of an incident report for 1500 Shea Road, the property north of the Site. The incident report was ordered from the TSSA and received by Golder Associates on December 8, 2010. The review of the incident report indicated that a natural gas leak caused by valves not being closed properly occurred at 1500 Shea Road and TSSA was called to scene on April 6, 2001. Based on email correspondence from TSSA, *Class 02* in the incident report refers to "investigation"; *Reason 06* refers to "vapour release" and *Trigger 01* refers to "Fuels Safety Branch". This incident report was made into the TSSA database on July 10, 2004. Details on the incident report is provided in Appendix B.

The occurrence of the natural gas leak does not constitute a potential environmental concern to the Site as natural gas is a vapour and would have been released to the atmosphere and not have impacted the soil or groundwater.

### 3.2.3 City of Ottawa Correspondence

Golder forwarded a request (refer to copy of correspondence in Appendix B) to the City of Ottawa (City), for the following information:

- Active orders under the EPA, the OWRA, and the PA;
- Approvals;
- Reports relating to environmental concerns;
- Records of non-compliance or regulatory concerns;
- Dumping infractions, spills or discharges to the environment;



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- Violations of sewer use or environmental by-laws;
- Historic information related to landfill or dump sites on or in proximity to the Site; and,
- Any other environmental information.

Response from the City was received by Golder Associates on December 7, 2010. Based on the review of the response the following was noted:

- The information obtained from the Internal Department Circulation indicated that there is a waste management facility located at 2301 Carp Road.
- According to the information obtained from the City of Ottawa Historical Land Use Inventory (“HLUI”) there are three activities associated with properties located within 50 m of the Site as follows:
  - Emeritus Engraving (stamped, pressed and coated metal products), from 1998 to 1999, at 25 Caribou Avenue, Goulbourn, approximately 15 m west of the Site
  - Ruitter Construction Limited (residential building and development), in 2005, at 5870 Abbott Street East, less than 50 m north of the Site
  - OCCSB – Sacred Heart High School (elementary and secondary education), in years 2000, 2001, 2003 and 2005, at 5870 Abbott Street, Stittsville, less than 50 m north of the Site

The waste management facility is approximately 4.8 kilometres (km) northwest (down-gradient) of the Site and is buffered by various streets, parking lots and underground utilities. Therefore, it is not considered an issue of potential environmental concern to the Site.

Review of the air photos indicated that 25 Caribou Avenue has been a residential house since 1996. It is inferred that Emeritus Engraving is a small scale family business. There is no waste generator number associated with this address. Any waste generated at this location would be in small quantities. In addition, Emeritus Engraving was located down-gradient of the Site. Therefore, it is not considered an issue of potential environmental concern.

The Ruitter Construction Limited in 2005 is located down-gradient of the Site. As such, the likelihood of impacts to the Site is considered low.

There is an Ontario waste generator number (ON0426425) associated with Sacred Heart High School. A search in the MOE Database on Registered Waste Generators (2001) indicated that there is 136 kilograms (kg) of petroleum distillates – ignitable at Sacred Heart High School. This type of waste is commonly found in elementary and secondary education facilities. In Ontario, registered waste generators have recognized hauler and proper means of waste disposal. In addition, Sacred High School is located down-gradient of the Site. Therefore, there is not enough evidence that the identified waste at Sacred Heart High School is potential environmental concern to the Site.

### 3.2.4 Ontario Ministry of Environment Document Review

#### *MOE Database on PCB Storage Sites, 2000*

Based on a search of the MOE database of PCB Storage Sites, there are no registered PCB Storage Sites known to be located within approximately 200 m of the Site.



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### ***Waste Disposal Site Inventory, June 1991***

Based on a review of the waste disposal site inventory, there is no active or closed waste disposal site located within 200 m of the Site.

### ***Inventory of Coal Gasification Plant Waste Sites in Ontario, April 1987***

A review of the (*Inventory of Coal Gasification Plant Waste Sites in Ontario*) (200 m radius from the Site) was carried out. The latter classification includes tar distillation plants, creosoting plants, roofing felt and tarred paper products manufacturers, by-product charcoal and coke oven plants of the iron and steel industry, industrial manufactured gas plants, and wood distillation plants.

The review indicated that there are no registered former coal gasification plants or industrial sites producing and/or using coal tar or related tars within 200 m of the subject Site.

### ***MOE Database on Registered Waste Generators, 2001***

A review of the MOE database on registered waste generators (within 200 m of the Site), indicated that the Site was not registered (using “Shea” and “Fernbank” as the search criteria). Sacred High School (5870 Abbott Street) is a registered waste generator with generator number of ON0426425. Discussion on this facility is provided in detail in Section 3.2.3. It is concluded that this waste generator is not considered an issue of potential environmental concern.

### ***MOE Database on Brownfields Environmental Site Registry – Records of Site Condition October 2004***

A search of the brownfields environmental site registry was carried out for the Site to determine whether a record of site condition (RSC) has been filed for the Site. The search indicated that no RSC has been filed for the Site.



### 4.0 SITE VISIT

A site visit was carried out by Golder staff on November 12, 2010. Golder was not accompanied during the site visit.

The visit was documented with photographs and additional notes where warranted. The Site was examined for visual and olfactory indications of potential environmental concern. The site visit also included a cursory inspection of adjacent properties from the Site and publicly accessible areas. The approximate limits of the Site are noted on Figure 2. Refer to the Site Characteristics table in Section 2.1 for a general description of the Site.

Photographs taken during the site visit are included in Appendix A.

#### 4.1 General Site Observations

The Site is generally flat and at grade with adjacent property in the north, with Shea Road in the east and with Fernbank Road in the south. However, it is approximately 1 – 2 m lower than the residential area to the west. The site is thickly wooded in the western half (Photograph 10) and its eastern half is now cleared of trees with piles of topsoil in preparation for the residential development (Photograph 9). Concern of the source of the topsoil was raised to Mr. Pierre Dufresne at Tartan, who forwarded the message to Mr. Mark Purchase at Thomas Cavanagh Construction. According to Mr. Mark Purchase, the piles observed during the site visit are screened topsoil from on-site. No materials have been brought to Site from outside sources.

Walking trails in a north-south orientation and east-west orientation were observed in the western portion of the Site (Photographs 5 and 6).

In the previous Phase I ESA report, an area of suspect surficial fill was observed in the west central portion of the Site at the dead end of the Samuel Mann roadway and was suspected to be associated with the westerly adjacent residential subdivision. During the site visit on November 12, 2010, no fill pile was observed in that area. There is an approximately 8 m by 3 m gravel area east of the dead end of Samuel Mann Avenue followed by natural slope with thick grass/weeds coverage from Samuel Mann Avenue into the wooded area (Photograph 11). No obvious issues of potential environmental concern (i.e., stains, sheens, or stressed vegetation) were observed at the time of the site visit.

The historical presence of the surficial fill may indicate an issue of potential environmental concern.

#### 4.2 Building

No buildings are currently present on the Site.

##### 4.2.1 Suspect Asbestos-Containing Materials

Since the late 1970's the manufacture and use of asbestos-containing building materials has continued to decrease. There is no firm cut-off date outlining when asbestos in building materials was discontinued. Manufacturers produced and ceased production of asbestos-containing materials at different times. It is commonly presumed that buildings constructed prior to 1980 are more likely to contain both friable and non-friable forms of asbestos such as mechanical insulations, ceiling tiles, floor tiles, ceiling textures etc. Generally, buildings constructed from 1980 to 1985/86 are more likely to contain non-friable asbestos in the form of floor tiles, sheet flooring, drywall joint compound etc. Even buildings constructed much more recently may contain asbestos-containing materials (ACM) in the form of exterior window caulking, roofing materials, fire-stop or transite piping.



Ontario Regulation (O. Reg.) 278/05, which replaced O. Reg. 838/90, became law on November 1, 2005. This regulation governs work that disturbs or is likely to disturb ACMs in provincially regulated buildings and applies to contractors in the province of Ontario (even in a federal workplace). O. Reg. 278/05 outlines the specific procedure for identification of ACMs, protocols for their removal, the requirements for building owners and asbestos management, and the training requirements for asbestos workers. Subsequent to November 1, 2007 a written asbestos management plan will be required for every building (in Ontario) with asbestos (friable and non-friable). The only method of confirming whether materials are asbestos-containing is to sample and analyze the suspect materials.

The Site has no buildings. ACMs are generally associated with building functions/material and, as such, ACM is not considered to be an issue of potential environmental concern.

### 4.2.2 Suspect PCB-Containing Materials and Equipment

In Canada, *The Federal Chlorobiphenyls Regulation, SOR/91-152* prohibits polychlorinated biphenyls (PCBs) from being used in products, equipment, machinery, electrical transformers and capacitors which were manufactured or imported into the country after July 1, 1980. However, older equipment in use after this date may still contain PCBs if the equipment's fluid has not been changed or the equipment was not decontaminated when the fluid was changed to a non-PCB-containing fluid. In general, potential PCB-containing equipment could include fluorescent, mercury and sodium vapour light ballasts, oil-filled capacitors and oil-filled transformers.

No electrical transformers were observed on the Site. The Site has no buildings. Therefore, the presence of building-related PCBs (switches, capacitors, fluorescent light ballasts, transformers) is not considered to be an issue of potential environmental concern.

### 4.2.3 Urea Formaldehyde Foam Insulation

Urea formaldehyde foam insulation (UFFI) is low-density foam, which is formed by the polymerization of urea and formaldehyde liquids. The concerns with UFFI are human health and safety, and are associated with the release of gases as the UFFI cures, ages and degrades. UFFI was widely used as an insulating material until December 1980 when a ban on the use of UFFI was enacted under the *Hazardous Products Act* (HPA). UFFI was commonly injected through walls by drilling injection holes, typically in roof structures, ceilings and overhangs. Except for residential properties, the HPA does not require the licensing, approval or registration of a property where UFFI has been identified.

The Site has no buildings. UFFI is generally associated with building functions/material and, as such, UFFI is not considered to be an issue of potential environmental concern.

### 4.2.4 Lead

Lead in the workplace is regulated under OHSA. As outlined in the OHSA, persons in the workplace are required to be notified of the presence of lead in the workplace. The exposure to lead in the workplace can be managed through various methods, including encapsulation and removal. Although lead-based paints were banned from use on exterior, or interior surfaces of buildings, furniture or household products in the late 1970s, various commercial paints are still known to contain lead in concentrations greater than the 0.5 percent weight to weight of lead (e.g., road paint).

The Site has no buildings. Lead is generally associated with building functions/material and, as such, lead is not considered to be an issue of potential environmental concern.



### 4.2.5 Ozone-Depleting Substances

An ozone-depleting substance (ODS) refers to any substance containing chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), halon or any other material capable of destroying ozone in the atmosphere. ODSs have been used in rigid polyurethane foam and insulation, laminates, aerosols, air conditioners, fire extinguishers, cleaning solvents and the sterilization of medical equipment. Federal regulations introduced in 1995 required the elimination of production and import of CFCs by January 1, 1996 (subject to certain essential uses) and a freeze on the production and import of HCFC-22 by January 1, 1996. These regulations also require the complete elimination of HCFC-22 by the year 2020.

Since the regulations govern only the production and import of certain ODSs, they are allowed to be used in Canada, as long as there is a supply in place. Eventually the supply will run out, and the present equipment will either need to be refitted or replaced. It is understood from several air conditioning companies, that there is a sufficient supply of CFCs and HCFC-22 in Canada for at least the next several years. The federal HPA does not require the licensing, approval or registration of a property in which ODSs have been identified. However, provincial regulations require the licensing of contractors who handle ODSs through equipment servicing.

The Site has no buildings. ODSs are generally associated with building functions/material and, as such, ODSs are not considered to be an issue of potential environmental concern.

### 4.2.6 Radon

Radon gas is a product of the decay series that begins with uranium. Radon is produced directly from radium, which can be commonly found in geological units which contain black shale and/or granite. Radon gas can migrate through the ground and enter buildings through porous concrete or fractures. In open air or locations with high air circulation, radon is not considered a health problem, due to the dilution of the gas. In confined spaces (e.g., basements) it can concentrate and become a health hazard.

Given that there are no buildings on the Site; radon is not a current issue of potential environmental concern for the Site. However, the underlying rock type (interbedded silty dolomite, lithographic to fine crystalline limestone, oolitic limestone, shale, and fine-grained calceous quartz sandstone) contains a unit that is associated with the presence of radon gas. Only actual testing of radon gas concentrations in built structures could determine if it is an actual health concern. Radon gas can be managed through appropriate air exchange.

### 4.2.7 Mercury

The Site has no buildings. Mercury is generally associated with building functions/material (thermostats) and, as such, mercury is not considered to be an issue of potential environmental concern.

### 4.2.8 Air Emissions

The Site has no buildings. Air emissions are generally associated with building functions and, as such, air emissions are not considered to be an issue of potential environmental concern.

### 4.2.9 Mould

The Site has no buildings. The presence of mould is not considered to be an issue of potential environmental concern.

### 4.2.10 Radioactive Materials

The Site has no buildings. The presence of radioactive material would generally be related to building use, and as such, is not considered to be an issue of potential environmental concern.





### 4.3 Solid Waste Disposal Practices and/or Areas of Storage/Waste

It is outside the scope of this Phase I ESA to comment on whether or not the waste disposal practices meet the requirements of applicable regulations since the Phase I ESA is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of the visit and do not include operational or management systems compliance.

No waste is generated at the Site and no areas of solid waste storage were observed during the site visit.

### 4.4 Water and Wastewater Discharges

It is outside the scope of this Phase I ESA to comment on whether or not the wastewater discharges from the Site meet the requirements of applicable regulations since the Phase I ESA is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of the site visit and do not include operational or management systems compliance. In general, it is the responsibility of individual facilities/companies to ensure that sewer discharges meet the applicable municipal requirements. If non-compliance situations arise, a “compliance program” may result which is an agreement between the municipality and the facility/company to correct the non-compliant sewer discharges.

The Site is not developed. No water discharge concerns (stains, sheens) were identified or reported at the time of the site visit.

### 4.5 Odour, Noise and Vibration

Other than the nearby roadways (Shea Road and Fernbank Road), no major sources of odour, noise or vibration were noted during the site visit.

### 4.6 Electromagnetic Radiation (EMF)

Electromagnetic radiation is generally associated with high voltage power lines. High voltage power lines were observed easterly adjacent to the southern portion of the Site and within approximately 200 m of the central and northern portion of the Site.

### 4.7 Storage Tanks

#### 4.7.1 Aboveground Storage Tanks (AST)

No aboveground storage tanks were observed on the Site. No evidence of piping associates with former ASTs was observed during the site visit. No spill records on or within 200 m of the Site were found in the TSSA correspondence.

#### 4.7.2 Underground Storage Tanks (UST)

No petroleum or chemical USTs are suspected to be present within the Site. No evidence (filler/vent pipes extending through walls or slabs/ground surface, no staining or any obvious odours) was observed during the site visit to indicate the current presence or former presence of fuel or chemical USTs within the Site. Also, No spill records on or within 200 m of the Site were found in the TSSA correspondence.



### 4.8 Storage, Handling and Disposal of Hazardous Materials

It is outside the scope of this Phase I ESA to comment on whether or not the storage, handling and disposal of hazardous materials meets the requirements of applicable regulations since the Phase I ESA is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of the site visit and do not include operational or management systems compliance.

No issues of potential environmental concern were noted during the site visit with respect to the storage, handling and disposal of hazardous waste within the Site.

### 4.9 Adjacent Land Use

Based on visual observations during the site visit, adjacent property use is for residential, institutional and recreational purposes. No industrial complexes are present in the immediate vicinity of the Site.

A summary of adjacent land use is as follows:

#### *North*

- Sacred Heart High School and Goulbourn Recreation Centre

#### *South*

- Fernbank Road followed by agricultural land with a hydro corridor in a northeast-southwest orientation. There are two off-site properties cut out from the site north of Fernbank Road, both surrounded by the southern portion of the Site.

#### *East*

- Shea Road followed by undeveloped land and a hydro corridor in the northeast-southwest orientation

#### *West*

- Residential area (single houses)



## **5.0 SUMMARY AND RECOMMENDATIONS**

Based on the information obtained during the Phase I ESA, there are no issues of potential environmental concern identified related to potential subsurface impacts on soil and/or groundwater.



### 6.0 LIMITATIONS AND USE OF REPORT

This report was prepared for the exclusive use of Tartan Land Corporation, and is intended to provide an assessment of the current environmental conditions for the lands in the northeast half and southwest half of Lot 25, Concession 10 in Geographic Township of Goulbourn within City of Ottawa, Ontario. Any use which another party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the other parties. Should additional parties require reliance on this report, written authorization from Golder Associates Ltd. will be required. No assurance is made regarding the accuracy and completeness of the data obtained from other parties. Golder Associates Ltd. disclaims responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected during the Phase I ESA visit of the Site conducted by Golder Associates Ltd. It is based solely on conditions of the Site encountered at the time of the site visit on November 12, 2010, supplemented by a review of historical information and data obtained by Golder Associates Ltd. as described in this report. No soil, water, liquid, gas, mould, product or chemical sampling and analytical testing at or in the vicinity of the Site were conducted as part of this assessment.

In evaluating the Site, Golder Associates Ltd. has relied in good faith on information provided by others noted in this report. We have assumed that the information provided is factual and accurate. We accept no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons contacted.

If new information is discovered during future work, including but not limited to, site assessment, excavations, borings or other studies, Golder Associates Ltd. should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required.



## 7.0 CLOSURE

We trust that this report meets your current needs. If you have any questions, or if we may be of further assistance, please do not hesitate to contact the undersigned.

### GOLDER ASSOCIATES LTD.

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# **APPENDIX A**

## **Site Photographs**



# **APPENDIX B**

## **Regulatory Documentation**



# APPENDIX C

## Qualifications of Environmental Assessors



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.

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