



*The new identity of Trow Associates Inc.*

- **Catalina Developments Inc.**

**Phase I Environmental Site Assessment**

**FINAL**

**Project Name**

8 and 10 Lindsay Court and 13758 & 13764 Hwy 7,  
Georgetown, Ontario

**Project Number**

BRM-00201415-A0

**Prepared By:**

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**Date Submitted**

December 21, 2011

## Executive Summary

**Exp Services Inc. (exp)** was retained by Mr. Brian Tilley of Catalina Developments Inc. to complete a Phase I Environmental Site Assessment (ESA) of the property located at 8 and 10 Lindsay Court and 13758 & 13764 Hwy 7, Georgetown, Ontario, hereinafter referred to as the 'Site'. It was **exp's** understanding that the Phase I ESA was required in order to obtain the necessary permits required for the redevelopment of the Site and that a Record of Site Condition was not required.

The objective of this Phase I ESA was to identify potential sources of environmental concern to the Site. **Exp** has prepared this report in support of the redevelopment of the Site.

A Phase I ESA is a systematic qualitative process to assess the environmental condition of a Site based on its historical and current uses. The Phase I ESA was completed in general accordance to CSA Standard Z768-01, November 2001. Subject to this standard of care, **exp** makes no express or implied warranties regarding its services and no third party beneficiaries are intended. Limitation of liability, scope of report and third party reliance are outlined in Section 10 of this report.

The Site was located on the south side of Lindsay Court and Highway 7, at 8 and 10 Lindsay Court and 13758 and 13764 Highway 7, Georgetown, Ontario. The Site measured approximately 2.85 hectares (7.04 acres). The property located at 8 Lindsay Court was occupied by a two-storey residential dwelling with a basement. This property was vacant at the time of **exp's** Phase I ESA Site visit. The property located at 10 Lindsay Court was also occupied by a two-storey residential dwelling with a basement, an out of service pool and a small gazebo like building with two additional buildings associated with the RV dealership; a minor service and repair and office building and a showroom building both located on the southern portion of the Site. The eastern and southern portion of this property was asphalt covered and used for storage of RV vehicles. The properties located at 13758 and 13764 Highway 7 were occupied by two-storey residential dwellings and a separate building reportedly used as a garage located on the southern or eastern portion of the properties, respectively. The remainder of the properties were asphalt covered, landscaped and/or tree covered. The Site buildings were reportedly constructed circa the 1970s. A Canadian National (CN) railway line was observed directly south of the Site. Black Creek, a tributary of The Credit River is located within 30 metres of the Site boundary. As such, a portion of the Site is considered to be a "sensitive site" according to Ontario Regulation (O.Reg) 153/04.

Based on the Phase I ESA findings, the potential environmental concerns associated with the Site are summarized in the following table:

Areas of Potential Environmental Concern	Media and Potential Contaminants of Concern	Comments
<b>Site</b>		
Presence of abandoned Aboveground Storage Tanks (ASTs)	Soil and groundwater Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs) and metals	<p>One AST, approximately 1,000 Litres (L) in volume, was observed within the basement of the Site building located at 8 Lindsay Court. In addition, two ASTs similar in volume were also observed near the southwest exterior corner and northeast exterior corner of the garage buildings observed at 13758 and 13796 Hwy 7, respectively. Secondary spill containment for these ASTs was not provided. No vent pipes were observed in close proximity of the ASTs. No evidence of spillage or staining was observed on the concrete/grass floors surrounding the tanks. No cracks were noted on the concrete/grass covered floors in the vicinity of the ASTs. The contents of the tanks are unknown, but reportedly, the ASTs contained heating oil and were previously used for heating purposes. The ASTs appeared to be empty at the time of exp's Phase I ESA Site visit.</p> <p>In addition, a large propane filled AST, approximately 5,000 L in volume, was observed near the northwest exterior corner of the Site building observed at 13764 Highway 7. Secondary spill containment for this AST was not provided. No vent pipes were observed in close proximity of the AST. No evidence of spillage or staining was observed on the grass floor surrounding the tank. It is not known if this is AST is used for heating purposes.</p>
Regulated Building Materials	Air Asbestos Containing Materials (ACMs)	<p>Based on the age of the Site buildings (reportedly constructed circa the 1970s), there is a potential for the presence of asbestos-containing materials (ACMs) in the subject Site buildings.</p> <p>All potential ACMs noted in the buildings were observed to be in good condition. These materials, if present, do not pose a risk to current occupants as long as they are in good condition.</p>
Regulated Building Materials	Air, Soil and Groundwater Polychlorinated Biphenyls (PCBs)	Based on the age of the Site buildings (reportedly constructed circa the 1970s), there is a potential for the presence of PCBs in light ballasts within the Site buildings.

Areas of Potential Environmental Concern	Media and Potential Contaminants of Concern	Comments
Regulated Building Materials	Air, Soil and Groundwater  Lead and Mercury	Lead and /or mercury-containing paints may have historically been used in the subject Site buildings. The painted surfaces noted during exp's Site visit were observed to be in good condition with no evidence of peeling or flaking.  Thermostats may also contain mercury. This material does not pose a risk to occupants as long as the thermostats remain serviceable and in good condition.

Based on the Phase I ESA conclusions, no further investigation or Phase II ESA is warranted at this time. However, for best management practices, the following recommendations are provided:

Issue Identified	Recommendation	Rationale
Presence of abandoned Aboveground Storage Tanks (ASTs) on-Site	If the ASTs observed on-Site are no longer in use, they should be removed and disposed off-Site, in accordance with the Ontario's Technical Standards and Safety Authority's (TSSA) protocols. In addition, any potential vent and/or fill pipes in connection with the ASTs observed should be sealed.	Prevent any potential soil and groundwater impacts in the vicinity of the ASTs.
There is a potential for the presence of ACMs in the Site buildings.	If renovations or demolition of the buildings is planned, it is recommended that these materials be managed in accordance with the applicable regulations and guidelines.  An Asbestos Management Program (AMP) should be implemented as per Ontario Regulation 278/05 (O. Reg. 278/05).	Once ACMs are disturbed, asbestos fibres may be airborne and pose health concerns.  An AMP is required under O. Reg. 278/05 and should be implemented. An asbestos survey should be completed to identify the type, quantity, and location of all ACMs
There is a potential that PCBs-containing light ballasts may be present on-Site.	If renovations or demolition of the buildings is planned, it is recommended that light fixtures be assessed and managed in accordance with the applicable regulations and guidelines.	Once PCBs are released they may pose health and environmental concerns.
Regulated Building Materials (ACMs, Lead and/or mercury)	If renovations or demolition of the buildings is planned, it is recommended that these materials be managed in accordance with the applicable regulations and guidelines.  Conduct a Designated Substances Survey (DSS) prior to any demolition or renovation activities.	Once disturbed, these materials may be released into the environment and pose environmental and/or health concerns.

**This executive summary is a brief synopsis of the report and should not be read in lieu of reading the report in its entirety. Limitation of liability, scope of report and third party reliance are outlined in Section 10 of this report.**

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# 1 Introduction

**Exp Services Inc. (exp)** was retained by Mr. Brian Tilley of Catalina Developments Inc. to complete a Phase I Environmental Site Assessment (ESA) of the property located at 8 and 10 Lindsay Court and 13758 & 13764 Hwy 7, Georgetown, Ontario, hereinafter referred to as the 'Site'. It was **exp's** understanding that the Phase I ESA was required in order to obtain the necessary permits required for the redevelopment of the Site and that a Record of Site Condition was not required.

## 1.1 Objective

Exp understands that Mr. Brian Tilley of Catalina Developments Inc. require this Phase I ESA in order to obtain the necessary permits required for the redevelopment of the Site and that a Record of Site Condition was not required. Consequently, the objective of this Phase I ESA was to identify potential sources of environmental concern to the Site. **Exp** has prepared this report for due diligence purposes in support of the redevelopment of the Site.

A Phase I ESA is a systematic qualitative process to assess the environmental condition of a Site based on its historical and current uses. The Phase I ESA was completed in general accordance to CSA Standard Z768-01, November 2001. Subject to this standard of care, **exp** makes no express or implied warranties regarding its services and no third party beneficiaries are intended. Limitation of liability, scope of report and third party reliance are outlined in Section 10 of this report.

## 1.2 Site Description

The Site was located on the south side of Lindsay Court and Highway 7, at 8 and 10 Lindsay Court and 13758 and 13764 Highway 7, Georgetown, Ontario (Figures 1 and 2). The Site measured approximately 2.85 hectares (7.04 acres). The property located at 8 Lindsay Court was occupied by a two-storey residential dwelling with a basement. This property was vacant at the time of **exp's** Phase I ESA Site visit. The property located at 10 Lindsay Court was also occupied by a two-storey residential dwelling with a basement, an out of service pool and a small gazebo like building with two additional buildings associated with the Recreational Vehicle (RV) dealership; a minor service and repair and office building and a showroom building both located on the southern portion of the Site. The eastern and southern portion of this property was asphalt covered and used for storage of RV vehicles. The properties located at 13758 and 13764 Highway 7 were occupied by two-storey residential dwellings and a separate building reportedly used as a garage located on the southern or eastern portion of the properties, respectively. The remainder of the properties were asphalt covered, landscaped and/or tree covered. The Site buildings were reportedly constructed circa the 1970s.

A CN railway line was observed directly south of the Site. Black Creek, a tributary of The Credit River is located within 30 metres of the Site boundary. As such, a portion of the Site is considered to be a "sensitive site" according to O.Reg 153/04.

A Site plan is provided as Figure 3. Photographs of the Site are included in Appendix A.



## 2 Scope of Investigation

The scope of work the Phase I ESA consisted of the following activities:

- Reviewing the historical occupancy of the Site through the use of available archived and relevant municipal and business directories, fire insurance plans (FIPs), topographical maps, and aerial photographs;
- Contacting municipal and/or provincial agencies to determine the existence of records of environmental regulatory non-compliance, if any, and reviewing such records where available;
- Reviewing available geological maps, well records and utility maps for the vicinity of the Site;
- Conducting a Site reconnaissance of the Site and Site infrastructure in order to identify the presence of actual and/or potential environmental contaminants or concerns of significance;
- Conducting interviews with designated Site representative(s) as a resource for current and historical Site information, as well as to provide **exp** staff with unrestricted access to all areas of the Site and Site buildings;
- Reviewing the current uses of the Site and any land use practices that may have impacted the environmental conditions at the Site;
- From the Site and publically accessible areas, reviewing the current use of the surrounding properties and any land use practices that may have impacted the environmental condition of the Site; and,
- Preparing a report to document the findings.

In completing the scope of work, **exp** did not conduct any intrusive investigations, including sampling, analyses or monitoring of materials. In addition, general environmental management and housekeeping practices were reviewed as part of this assessment insofar as they could impact the environmental condition of the property; however, a detailed review of regulatory compliance issues was beyond the scope of this investigation.

**Exp** personnel who conducted assessment work for this project included Ms. Gagandip Singh, B.A.Sc. and Mr. Jacky So, P.Eng. An outline of their qualifications is provided in Section 8.

## 3 Records Review

### 3.1 General

The Phase I ESA study area consisted of the neighbourhood extending a distance of 250 metres from the Site. For the purpose of this assignment, the Phase I ESA study area consisted of neighbouring properties within a distance of approximately 250 metres from the Site boundaries. The Phase I ESA study area was bounded by Factory Crescent to the north, McCullough and Ruddell Crescent to the east, Berton Boulevard the south, and Trafalgar Road to the west as shown on Figure 2.

Based on a review of historical aerial photographs, historical maps, and other records review, the Site was first developed circa 1972 for use as residential dwellings.

The records review is summarised below.

### 3.2 Aerial Photographs

An aerial photograph for the Site dated 1972 was obtained from Northway Survey Corporation Limited. In addition, the aerial photographs dated 2004 and 2009 was obtained from Google Earth. The aerial photographs were collected in order to review the development and land use history of the Site and surrounding area. Copies of the aerial photographs are included in Appendix D.

The development and land use history of the Site and adjacent properties as depicted on the reviewed aerial photographs is summarized below.

Aerial Photograph	Details
1972	<ul style="list-style-type: none"> <li>• The Site appeared to be developed with a rectangular shaped residential building located at the northern portion of the property at 8 Lindsay Court and 13758 Highway (HWY) 7. The southern portion of the Site was landscaped. The Site located at 10 Lindsay Court was occupied by a rectangular shaped residential dwelling on the northern portion of the property and the minor repair and office building on the eastern portion of the Site. Several Recreational Vehicles (RVs) were observed on the northeast portion of the Site. The Site located at 13764 Highway 7 was occupied by a rectangular shaped residential dwelling on the northern portion of the property and a smaller garage building to the east. The remainder of the properties were landscaped and/or covered in trees.</li> <li>• Lindsay Court was observed directly north of the Site.</li> <li>• A CN railway line was observed directly south of the residential dwellings.</li> <li>• Vacant land used most likely for agricultural purposes was observed further to the north and west of the Site, beyond HWY 7 and Trafalgar Road, respectively.</li> <li>• Limited residential development was observed to the east of the Site.</li> </ul>
2004	<ul style="list-style-type: none"> <li>• The Site appeared to be developed with four (4) rectangular shaped residential buildings at 8 and 10 Lindsay Court and 13758 and 13764 Hwy 7. In addition, two smaller buildings were observed to the south</li> </ul>

Aerial Photograph	Details
	<p>and east of 13758 and 13764 Hwy 7. The property located at 10 Lindsay Court consisted of two buildings in association with the RV dealership located on-Site, the minor repair building and showroom building. Several RVs were observed directly east and/or south of the buildings located at 10 Lindsay Court.</p> <ul style="list-style-type: none"> <li>• The southern portion of the Site appeared to be landscaped and/or covered in trees.</li> <li>• A CN railway line and a water body, Black Creek, was observed directly south of the residential dwellings.</li> <li>• Residential development was observed in all directions directly surrounding the Site.</li> <li>• Limited residential development and/or vacant land used most likely for agricultural purposes was observed further to the north and west of the Site, beyond Highway (HWY) 7 and Trafalgar Road, respectively.</li> </ul>
2009	<ul style="list-style-type: none"> <li>• No significant changes were noted between the 2004 and 2009 aerial photographs.</li> </ul>

### 3.3 Fire Insurance Plans

A search of Canadian Underwriter's Association Fire Insurance Plans (FIPs) for historic maps of the Site and surrounding area was completed at the Metropolitan Toronto Reference Library (MTRL). Based on the search, no FIPs area were available for review for the Site and the adjoining properties.

### 3.4 City Directories

The available Halton Peel Directories dated 1965, 1970, 1975, 1981, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1998, and 2001, were reviewed at the Metropolitan Toronto Reference Library in order to identify the occupancy history of the Site and adjacent properties. Based on the street directory review, summarized in Appendix B, the following pertinent information was noted:

- The Site was not listed in the 1965, 1970, 1975, 1981, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, and street directories.
- The historical record review of the Site revealed that the Site has been used for residential purpose since at least 1995.
- The record review of the few adjoining properties revealed that the surrounding properties and addresses are currently and have historically been used for residential purposes. As such, it is considered unlikely that the surrounding properties have posed an environmental impact towards the Site.

### 3.5 Previous Reports

No prior environmental or geotechnical reports were available for review at the time of this Phase I ESA.

### 3.6 Chain of Title

A chain of title was not completed for the Site as the Site history was established using historical information available from other sources.

### 3.7 Regulatory Requests

The appropriate regulatory agencies at the provincial and municipal levels were contacted to obtain information regarding environmental permits, past or pending environmental control orders or complaints, outstanding environmental regulatory non-compliance issues and Sewer Use By-Law infractions. Exp did not identify the need to contact any federal agencies.

#### 3.7.1 Ministry of the Environment

On December 12, 2011, a request for information was submitted to the Ontario Ministry of the Environment (MOE) Freedom of Information, Protection of Privacy Office for information in their files regarding the Site that pertain to any Environmental Concerns, Orders and Spills. A copy of the request is included in Appendix C.

A written response from the MOE typically requires several months. If upon receipt of the response from the MOE, any significant environmental issues are identified, exp will forward their response to the client as an addendum to this report.

#### 3.7.2 Technical Standards and Safety Authority

The Technical Standards and Safety Authority (TSSA) is the Provincial regulatory agency responsible for overseeing the storage of fuels in Ontario. As such, the TSSA maintains a database (approximately 1987 to present) of all registered fuel storage tanks in Ontario.

On December 12, 2011, Ms. Sarah Png, a Customer Service Representative for the TSSA, was contacted by email and requested to search the TSSA database for records of fuel storage at the Site. Based on the review of their database, the TSSA indicated that there was no record of fuel storage at the Site.

### 3.8 Maps

The following maps were reviewed:

- Ontario Base Map, Sheet 10 17 5850 48300, Ministry of Natural Resources, Ontario (based on 1982 air photography).
- "Quaternary Geology of Ontario"; Southern Sheet Map 2556, Scale 1:100,000. Issued 1991.
- "Bedrock Geology of Ontario, Southern Sheet," Ontario Geological Survey, Map 2544. Scale 1: 1 000 000 Issued 1991.

The review of these maps indicated the following:

- The review of the topographic map indicated that the Site and surrounding area were generally flat, with a slight slope to the south and southeast towards Black Creek, a tributary of The Credit River, located directly south and within 30 m of the Site.
- The Site and surrounding areas were dominated by Halton Till deposits which predominantly consist of silt to silty clay.
- The bedrock in the general area was part of a group belonging to the Queenston Formation consisting of red shale.

### 3.9 Company Records

No company records, such as drawings, Certificates of Approvals, Material Safety Data Sheets (MSDSs) were made available to **exp** at the time of this Phase I ESA.

### 3.10 Environmental Source Information

Environmental source information includes documents published by the MOE and online databases maintained by the MOE. These documents and databases were reviewed to determine if waste disposal, coal tar, coal gasification, PCB storage sites or sites that generate hazardous wastes were located on or in the immediate vicinity of the Site. The review of the Environmental source information is provided below.

#### 3.10.1 Waste Disposal Sites

The MOE maintains an inventory of all known active and closed waste disposal sites in Ontario. The review of Waste Disposal Site Inventory published by the MOE indicated the following:

- The Site and adjoining properties were not identified as former waste disposal facilities; and,
- No active waste disposal MOE Hazardous Waste sites were identified within a 1 km radius of the Site.

#### 3.10.2 Inventory of Coal Gasification Plant Waste Sites in Ontario

This inventory was published by the MOE in 1988 to document the industrial facilities in Ontario that produced or used coal tar and other related tars. The information included in this inventory includes: facility type, size, land use, soil condition, site operators/occupants, site description, and potential environmental impacts.

Based on the review, no coal gasification sites were identified within 1 km of the Site.

#### 3.10.3 Ontario Inventory of PCB Storage Sites

The MOE maintains an inventory of all known PCB storage sites in Ontario. The review of the Ontario MOE Inventory of PCB Storage Sites in Ontario (1999, 2003, and 2004) indicated the following:

- The Site was not a registered PCB storage site; and,
- No PCB storage sites were identified within 250 m of the Site.

### 3.10.4 Hazardous Waste Information Network (HWIN)

The review of the Ontario Regulation 347 Waste Generators Summary (HWIN) identifies companies listed as waste generators and/or receivers. The review of HWIN database indicated the following:

- The Site was not identified in the HWIN database from 1986 to 2005; and
- The adjoining and/or surrounding properties within a 250 m radius of the Site were not identified in the HWIN database from 1986 to 2005.

### 3.10.5 Record of Site Condition

A Record of Site Condition (RSC) summarizes the environmental conditions of a property as determined by a qualified person (QP) by conducting a Phase I ESA, a Phase II ESA and where necessary, confirmatory sampling and risk assessment. Upon completion of the necessary environmental Site assessments, a RSC for an assessed property can be filed with the MOE and added to the Environmental Brownfields Site Registry database. This online, publically available database can be searched to identify what properties may have potential environmental concerns.

Based on the search of the MOE's Environmental Brownfields Site Registry database, no RSCs have been filed for the Site or the adjacent properties.

## 3.11 Utility Company Records

No utility company records were reviewed at the time of this Phase I ESA.

## 3.12 Public Health Concerns

No public health concerns were identified at the time of **exp's** Phase I ESA.

## 4 Interviews

Interviews were conducted by **exp** with the individuals identified to be the most knowledgeable about both the current and historical Site uses. The interviews were conducted in order to obtain information to assist in identifying areas of potential environmental concern and identify details of potentially contaminating activities or potential contaminant pathways, in, on or below the Site.

During the completion of this Phase I ESA, the following individuals were interviewed:

1. A representative for the client was interviewed during the Site visit on December 14, 2011.

## 5 Site Reconnaissance

On December 14, 2011, Ms. Gagandip Singh of **exp** conducted the Site visit in accordance with **exp**'s internal health and safety protocols and with the Ministry of Labour health and safety regulations. The purpose of the Site visit was to assess the current conditions of the Site.

The general environmental management and housekeeping practices at the Site were reviewed as part of this assessment insofar as they could impact the environmental condition of the property; however, a detailed review of regulatory compliance issues was beyond the scope of **exp**'s investigation.

The Site and the adjoining properties were observed from the Site and/or publically accessible areas. Photographs documenting the Site visit are included in Appendix A.

### 5.1 Site

#### 5.1.1 Property Use

The Site buildings located at 8 Lindsay Court, 13758 and 13764 Highway 7 were occupied by residential dwellings. In addition, the Site buildings located at 10 Lindsay Court were occupied by one residential dwelling and Georgetown RV, a recreational vehicle (RV) dealership. Reportedly, the Site will be re-constructed for the development of condominium townhouses.

#### 5.1.2 Buildings and Structures

The Site was located on the south side of Lindsay Court and Highway 7, at 8 and 10 Lindsay Court and 13758 and 13764 Highway 7, Georgetown, Ontario. The Site measured approximately 2.85 hectares (7.04 acres). The property located at 8 Lindsay Court was occupied by a two-storey residential dwelling with a basement. This property was vacant at the time of **exp**'s Phase I ESA Site visit. The property located at 10 Lindsay Court was also occupied by a two-storey residential dwelling with a basement, an out of service pool and a small gazebo like building with two additional buildings associated with the RV dealership; a minor service and repair and office building and a showroom building both located on the southern portion of the Site. The eastern and southern portion of this property was asphalt covered and used for storage of RV vehicles. The properties located at 13758 and 13764 Highway 7 were occupied by two-storey residential dwellings and a separate building reportedly used as a garage located on the southern or eastern portion of the properties, respectively. The remainder of the properties were asphalt covered, landscaped and/or tree covered. The Site buildings were reportedly constructed circa the 1970s.

The residential Site buildings were constructed of bricks, metal sheeting and/or concrete. The interior walls and ceilings of the residential areas consisted of drywall and suspended ceiling tiles. The residential areas were covered by hardwood, carpeting and/or ceramic tiles. The interior walls and ceilings in the basement areas and the remaining buildings observed on-Site consisted of concrete blocks. The floor within these areas was covered with concrete.

Potable water was provided to the Site by private potable water wells located on-Site and is service by a septic sewage treatment system. Electrical service to the Site building was supplied by Halton



Hills Hydro. Lighting in the Site buildings was provided by both incandescent and fluorescent light fixtures.

The Site buildings were reportedly served by a combination of natural gas forced air furnaces. The Site buildings were reportedly served by window-mounted air-conditioning units.

### 5.1.3 Limitations at the Site

No interior observations were made in concealed spaces such as above ceilings, or behind walls in the residential subject buildings at 8 and 10 Lindsay Court and 13758 Highway 7.

Access to the interior of the Site buildings at 13764 Highway 7 and the garage buildings located at 13758 Highway 7 was not available during exp's Phase I ESA Site visit.

Access to the roof of any of the Site buildings was not available during exp's Phase I ESA Site visit.

### 5.1.4 Chemical Inventory, Storage and Handling

During the Site visit, several retail size containers of domestic cleaners and paints were observed in the buildings. There was no evidence of spills or leaks on the ground surfaces surrounding the containers.

### 5.1.5 Storage Tanks and Containers

The presence/absence and condition (if present) of Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs) at the Site were assessed during the Site visit.

One AST, approximately 1,000 Litres (L) in volume, was observed within the basement of the Site building located at 8 Lindsay Court. In addition, two ASTs similar in volume were also observed near the southwest exterior corner and northeast exterior corner of the garage buildings observed at 13758 and 13796 Hwy 7, respectively. An additional abandoned AST was also observed on the southern portion of the property located at 13758 Highway 7. This AST was not connected to anything and appeared to be empty at the time of exp's Site visit. Secondary spill containment for these ASTs was not provided. No vent pipes were observed in close proximity of the ASTs. No evidence of spillage or staining was observed on the concrete/grass floors surrounding the tanks. No cracks were noted on the concrete/grass covered floors in the vicinity of the ASTs. The contents of the tanks are unknown, but reportedly, the ASTs contained heating oil and were previously used for heating purposes. The ASTs appeared to be empty at the time of exp's Phase I ESA Site visit. A heating oil AST was also previously located within the basement of the residential dwelling located at 10 Lindsay Court. This AST was reportedly decommissioned and removed from the Site building approximately one year ago.

A large propane filled AST, approximately 5,000 L in volume, was observed near the northwest exterior corner of the Site building observed at 13764 Highway 7. Secondary spill containment for this AST was not provided. No vent pipes were observed in close proximity of the AST. No evidence of spillage or staining was observed on the grass floor surrounding the tank. It is not known if this is AST is used for heating purposes.

Vent and/or fill pipes were observed near the southwest exterior corner of the Site building located at 10 Lindsay Court. Reportedly, these pipes are exhaust pipes for the furnace observed within the basement area of the Site building.

A former underground pit was also observed within the interior of the minor service and repair building located at 10 Lindsay Court. Reportedly, the pit has been sealed with gravel, old tires and cement.

## 5.1.6 Special Attention Substances

### 5.1.6.1 Polychlorinated Biphenyls (PCBs)

The manufacture of PCBs in North America was prohibited under the Toxic Substances Control Act (1977). Their use as a constituent of new products manufactured in or imported into Canada was prohibited by regulations in 1977 and 1980. As such, sites developed or significantly renovated after 1980 are unlikely to have PCBs-containing equipment on the Site. Potential equipment, which could contain PCBs include fluorescent mercury and sodium vapour light ballasts, oil filled capacitors and transformers. A review of the Site was conducted to evaluate the potential presence of PCBs-containing equipment in use or stored at the Site.

Any electrical equipment containing PCBs must be disposed in accordance with Ontario Regulation 362 when it is removed from service. Ongoing operation of equipment containing PCBs is permissible.

Fluorescent light fixtures were observed throughout the Site buildings. Based on the age of the Site buildings (reportedly constructed circa the 1970), it was considered possible for PCBs to be present on the Site.

### 5.1.6.2 Asbestos-Containing Materials (ACMs)

Asbestos-containing materials (ACMs) are fibrous hydrated silicates, and can be found in building materials as either "unbound" or "bound" asbestos. Friable asbestos refers to materials where the asbestos fibres can be separated from the material with which it is associated. Non-Friable asbestos refers to asbestos, which is associated with a binding agent (such as tar or cement). Friable asbestos is commonly found in boiler and pipe insulation. Non-Friable asbestos is typically found in roofing tars, floor and ceiling tiles, and asbestos-containing cement.

ACMs in the workplace are defined as a Designated Substance under the Ontario Occupational Health and Safety Act (OHSA). Under OHSA, persons in the workplace are required to be notified of the presence of ACMs once they are suspected to be present, and if there is a potential for workers to be exposed. The use of ACMs was discontinued in Canada in the late 1970s/early 1980s, although friable asbestos can still be found in recently constructed buildings.

Based on the age of the Site buildings (reportedly constructed circa the 1970s), it was considered possible for ACMs to be present within the Site buildings. Exp did not conduct any sampling for asbestos during the Site reconnaissance.

#### 5.1.6.3 Ozone Depleting Substances (ODSs)

Chlorofluorocarbons (CFCs) often referred to as Freons, ceased production in Canada in 1993 as a result of their ozone-depleting characteristics. Importation of CFCs into Canada ceased in 1997 and a total ban on their use is proposed for 2020. The use of these materials is still permitted in existing equipment, but equipment must be serviced by a licensed contractor such that CFCs are contained and not released to the environment during servicing or operation.

The Site buildings were served by several air-conditioning units. The refrigerant in the air-conditioning units may contain chloro-fluorocarbon (CFC) or hydrochlorofluorocarbons (HCFC), both of which are recognized as Ozone Depleting Substances (ODSs). If present, CFCs will require replacement by 2020 and as such consideration should be given to future phase out programs.

Maintenance of refrigerant containing equipment, if any, should continue to be completed in compliance with Ontario Regulation 189/94 by a licensed refrigeration contractor. The equipment should only be repaired, removed, or serviced by an appropriately licensed contractor.

#### 5.1.6.4 Lead

Lead has frequently been used in oil-based paints, roofing materials, cornices, tank linings, electrical conduits and soft solders for tinsplate and plumbing. The use of lead-based paints (LBPs) was phased out circa 1976. Paint that was produced or used between 1976 and 1980 may contain small amounts of lead. Paint that was produced or used prior to 1950 may contain high levels of lead. The main concern regarding lead paint is its potential to become lead dust or chips either through deterioration and/or mechanical means (i.e., sanding, abrasion, etc.). Exposure to lead dust or chips occurs by ingestion or inhalation.

Based on the age of the Site buildings (reportedly constructed circa the 1970s), it was considered possible for lead based paints to be present within the Site buildings. The painted surfaces noted during the Site visit were observed to be in good condition, with no evidence of peeling or flaking.

#### 5.1.6.5 Urea Formaldehyde Foam Insulation (UFFI)

UFFI was formerly sprayed into cavities of walls and above ceilings as an insulating material. UFFI has been discontinued from commercial use since the early 1980s.

No evidence of UFFI was noted during exp's Site visit.

#### 5.1.6.6 Mercury

Mercury was used in some batteries, light bulbs, old paints, thermostats, old mirrors, etc. Based on an investigation by Consumer and Corporate Affairs Canada, and an assessment of potential health risks by Health and Welfare Canada, in 1991 the decision was made to eliminate the use of mercury compounds in indoor latex paints. The Canadian Paint and Coatings Association (CPCA) supported the withdrawal and all Canadian manufacturers and formulators of the preservative voluntarily agreed to remove "interior uses" from their product labels.

Based on the age of the Site buildings (reportedly constructed circa the 1970s), it was considered possible for mercury based paints to be present within the Site buildings. The painted surfaces noted during the Site visit were observed to be in good condition, with no evidence of peeling or flaking.

Thermostats located inside the buildings may also contain mercury; however, none were identified during the Site visit.

#### 5.1.6.7 *Mould*

Mould is found in the natural environment and is required for the breakdown of plant debris such as leaves and wood. Mould spores are found in the air in both the indoor and outdoor environments. In order for mould to grow it requires a food source (i.e. gypsum wallboard, carpets, wallpaper, wood, etc.) and moist conditions. Mould can have an impact on human health depending on the species and concentration of the mould. Health effects can include allergies and mucous membrane irritation.

Currently there are no regulations governing mould; however, there are several guidelines addressing mould assessments and abatement. At the moment the industry standards include the Canadian Construction Association (CCA) document 82-2004 titled "Mould guidelines for the Canadian construction industry" and the Environmental Abatement Council of Ontario (EACO) guidelines titled "EACO Mould Abatement Guidelines, Edition 2 (2010)".

It is important to note that the Ontario Ministry of Labour (MOL) has governed protecting workers under the Occupational Health and Safety Act, which states that employers are required to take every precaution reasonable to protect their workers. This includes protecting workers from mould within workplace buildings.

No evidence of water damage and suspected mould was observed within the Site building.

#### 5.1.6.8 *Radon*

Radon is a colourless, odourless, radioactive gas that occurs naturally in the environment. It comes from the natural breakdown of uranium in soils and rocks. Exposure to high levels of radon increases the risk of developing lung cancer. This relationship has prompted concern that radon levels in some Canadian buildings may pose a health risk. Radon gas can move through small spaces in the soil and rock and seep into a building through cracks in concrete, sumps, joints and basement drains. Concrete-block walls are particularly porous to radon and radon trapped in water from wells can be released into the air when the water is used.

Due to the potential health concerns associated with radon, Health Canada released a guideline in June 2007 for a maximum acceptable level of radon gas of 200 becquerels per cubic metre (Bq/m<sup>3</sup>). Where radon gas is present and the annual radon concentration exceeds 200 Bq/m<sup>3</sup> in the normal occupancy area, Health Canada recommends taking the necessary actions to reduce radon levels.

Based on the overburden and bedrock materials underlying the Site, it is unlikely that radon gas emissions would be a concern.

#### 5.1.6.9 *Other Substances*

No other special attention substances (such as acrylonitrile or isocyanates) were suspected to be present at the Site at the time of this Phase I ESA.

### **5.1.7 Unidentified Substances**

No unidentified substances were present at the Site at the time of this Phase I ESA.

### **5.1.8 Drains and Sumps**

Surface water drainage from the Site was directed towards catch basins located along Lindsay Court.

A sump with a sump pump was observed within the basement of the residential Site building at 10 Lindsay Court. Reportedly, this drain collects surface water originating from rain and from snow accumulation. It is assumed that the water is pumped periodically to the either the storm or the sanitary sewer system.

No other drains or sumps were noted during the Site visit.

### **5.1.9 Building Heating and Cooling Systems**

The Site buildings were reportedly served by a combination of natural gas forced air furnaces. The Site buildings were reportedly served by window-mounted air-conditioning units.

### **5.1.10 Mechanical Equipment**

Laundry appliances were observed on the ground floor of the Site buildings.

An air compressor was observed within the interior of the RV service and repair garage located at 10 Lindsay Court.

### **5.1.11 Air Emissions**

Regulatory control of air emissions in Ontario is the responsibility of the MOE. According to the Environmental Protection Act (EPA), a Certificate of Approval (CofA) (Air) is required for the ongoing operation of any equipment that may discharge a contaminant into the natural environment if the equipment was installed, modified or altered after June 29<sup>th</sup>, 1988. Retroactive approval should be sought for equipment installed and unchanged between 1972 and June 29<sup>th</sup>, 1988 when the requirement for a CofA was added to the EPA. Unless explicitly exempted, most industrial processes or modifications to industrial processes and equipment require a CofA. The EPA provides a list of specific equipment and conditions, which are exempt from CofA (Air) requirements (i.e. fuel burning equipment for comfort heating in a building using natural gas or number 2 fuel oil at a rate of less than 1.5 million British Thermal Units per hour [BTU/hour]).

Based on the Site visit, a CofA would not likely be required for air emissions at the Site

### **5.1.12 Odour and Noise**

No chemical or other significant odours were detected during the Site visit.

No excessive noise was detected at the Site during the Site visit.

### **5.1.13 Sewage and Wastewater Disposal**

The Site buildings are served by a septic sewage treatment system.

### **5.1.14 Liquid Chemical Waste Generation, Storage & Disposal**

During the Site visit, no liquid chemical waste was observed at the Site.

### **5.1.15 Solid Waste Generation, Storage & Disposal**

According to the Site representative, solid domestic waste generated at the Site is disposed off-Site by the Region of Peel collection program on a regular basis.

### **5.1.16 Topographic, Geologic and Hydrogeologic Conditions**

The Site was relatively flat with no discernible slopes. The Site was relatively flat and graded to be level with the surrounding properties. There was a retaining wall along the southern property line. The surrounding properties and the CN Railway line to the south of the Site were at least approximately 3.0 m above grade relative to the Site. The subsurface soil at the Site was expected to consist of silt to silty clay.

The Black Creek, a tributary of The Credit River, was located directly south and/or east of the Site and within 30 m of the Site boundary. The Credit River was located approximately 4 km east of the Site. Lake Ontario was located approximately 40 km south of the Site. Based on the local area topography and the proximity of the Site to Black Creek and The Credit River, the inferred local groundwater flow was to the east and southeast.

The actual groundwater flow direction can only be determined by long term groundwater elevation investigation in the area. The groundwater flow direction may also be influenced by utility trenches and other subsurface structures and may migrate in the bedding stone of nearby subsurface utility trenches

### **5.1.17 Water Courses, Ditches and Site Drainage**

Black Creek, a tributary of The Credit River, was located directly south and/or east of the Site and within 30 m of the Site boundary. The Credit River was located approximately 4 km east of the Site. Lake Ontario was located approximately 40 km south of the Site. Based on the local area topography and the proximity of the Site to Black Cree and The Credit River, the inferred local groundwater flow was to the east and southeast.

### **5.1.18 Abandoned and Existing Wells**

Potable water wells were observed at the Site during the Phase I ESA.

### 5.1.19 Potable Water Sources

The Site buildings are served by private potable water wells.

### 5.1.20 Fill Material.

Based on the observations made at the time of the Site visit, **exp** did not expect a significant amount of fill material to be present at the Site. The property was generally graded at the same elevation as the surrounding properties.

### 5.1.21 Stained Materials

No staining was observed at the time of the Site visit.

### 5.1.22 Stressed Vegetation

No stressed vegetation was observed at the time of the Site visit.

### 5.1.23 Roads, Parking Facilities and Right of Ways

Lindsay Court extended along the northern Site boundary and provided access to the Site. The CN Railway line extended along the southern portion of the Site boundary. Asphalt covered parking areas were observed to the north and/or east of the Site buildings.

### 5.1.24 Pits and Lagoons

No pits or lagoons were observed on the Site at the time of the Phase I ESA.

### 5.1.25 Other Issues

No other issues were identified on the Site at the time of the Phase I ESA.

## 5.2 Neighbouring Properties

A visual inspection of the adjacent properties and properties within the Phase I ESA study area was conducted from publically accessible areas to identify the occupants and document the uses and sources of potential environmental concerns that may impact the Site.

The visual inspection of adjacent and surrounding properties within a 250 m radius of the Site did not identify any sources of potential environmental concern.

The adjoining and/or surrounding properties within a 250 m radius of the Site were occupied by vacant land used for agricultural purposes and/or residential dwellings. As such, given the nature of the land use of the adjoining and/or surrounding properties, the potential for these properties to have posed an environmental impact towards the Site was considered to be low.

A CN railway line railway line passes directly south of the Site. There was a retaining wall along the southern property line. As such, CN railway line was at least approximately 3.0 m above grade

relative to the Site. As such, given the elevation of the CN railway line with respect to the Site, the potential for the historic and current use of the railway line to have posed an environmental impact towards the Site was considered to be low.

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## 6 Conclusions

Based on the Phase I ESA findings, the potential environmental concerns associated with the Site are summarized in the following table:

Areas of Potential Environmental Concern	Media and Potential Contaminants of Concern	Comments
<b>Site</b>		
Presence of abandoned Aboveground Storage Tanks (ASTs)	Soil and groundwater Petroleum Hydrocarbons (PHCs), Volatile Organic Compounds (VOCs) and metals	<p>One AST, approximately 1,000 Litres (L) in volume, was observed within the basement of the Site building located at 8 Lindsay Court. In addition, two ASTs similar in volume were also observed near the southwest exterior corner and northeast exterior corner of the garage buildings observed at 13758 and 13796 Hwy 7, respectively. Secondary spill containment for these ASTs was not provided. No vent pipes were observed in close proximity of the ASTs. No evidence of spillage or staining was observed on the concrete/grass floors surrounding the tanks. No cracks were noted on the concrete/grass covered floors in the vicinity of the ASTs. The contents of the tanks are unknown, but reportedly, the ASTs contained heating oil and were previously used for heating purposes. The ASTs appeared to be empty at the time of exp's Phase I ESA Site visit.</p> <p>In addition, a large propane filled AST, approximately 5,000 L in volume, was observed near the northwest exterior corner of the Site building observed at 13764 Highway 7. Secondary spill containment for this AST was not provided. No vent pipes were observed in close proximity of the AST. No evidence of spillage or staining was observed on the grass floor surrounding the tank. It is not known if this is AST is used for heating purposes.</p>
Regulated Building Materials	Air Asbestos Containing Materials (ACMs)	<p>Based on the age of the Site buildings (reportedly constructed circa the 1970s), there is a potential for the presence of asbestos-containing materials (ACMs) in the subject Site buildings.</p> <p>All potential ACMs noted in the buildings were observed to be in good condition. These materials, if present, do not pose a risk to current occupants as long as they are in good condition.</p>
Regulated Building	Air, Soil and	Based on the age of the Site buildings (reportedly constructed circa the 1970s), there is a potential for the

<b>Areas of Potential Environmental Concern</b>	<b>Media and Potential Contaminants of Concern</b>	<b>Comments</b>
Materials	Groundwater Polychlorinated Biphenyls (PCBs)	presence of PCBs in light ballasts within the Site buildings.
Regulated Building Materials	Air, Soil and Groundwater Lead and Mercury	Lead and /or mercury-containing paints may have historically been used in the subject Site buildings. The painted surfaces noted during exp's Site visit were observed to be in good condition with no evidence of peeling or flaking.  Thermostats may also contain mercury. This material does not pose a risk to occupants as long as the thermostats remain serviceable and in good condition.

## 7 Recommendations

Based on the Phase I ESA conclusions, no further investigation or Phase II ESA is warranted at this time. However, for best management practices, the following recommendations are provided:

Issue Identified	Recommendation	Rationale
Presence of abandoned Aboveground Storage Tanks (ASTs) on-Site	If the ASTs observed on-Site are no longer in use, they should be removed and disposed off-Site, in accordance with the Ontario's Technical Standards and Safety Authority's (TSSA) protocols. In addition, any potential vent and/or fill pipes in connection with the ASTs observed should be sealed.	Prevent any potential soil and groundwater impacts in the vicinity of the ASTs.
There is a potential for the presence of ACMs in the Site buildings.	If renovations or demolition of the buildings is planned, it is recommended that these materials be managed in accordance with the applicable regulations and guidelines.  An Asbestos Management Program (AMP) should be implemented as per Ontario Regulation 278/05 (O. Reg. 278/05).	Once ACMs are disturbed, asbestos fibres may be airborne and pose health concerns.  An AMP is required under O. Reg. 278/05 and should be implemented. An asbestos survey should be completed to identify the type, quantity, and location of all ACMs
There is a potential that PCBs-containing light ballasts may be present on-Site.	If renovations or demolition of the buildings is planned, it is recommended that light fixtures be assessed and managed in accordance with the applicable regulations and guidelines.	Once PCBs are released they may pose health and environmental concerns.
Regulated Building Materials (ACMs, Lead and/or mercury)	If renovations or demolition of the buildings is planned, it is recommended that these materials be managed in accordance with the applicable regulations and guidelines.  Conduct a Designated Substances Survey (DSS) prior to any demolition or renovation activities.	Once disturbed, these materials may be released into the environment and pose environmental and/or health concerns.

## 8 Qualifications of Assessors

The records review and Site visit were conducted by Ms. Gagandip Singh, who has been trained to conduct Phase I ESAs in accordance with the CSA Standard. Ms. Gagandip Singh is a graduate Civil Engineer from the University of Toronto.

The report was reviewed by Mr. Jacky So is a senior project manager in the Environmental Division. Mr. So obtained his Bachelor of Applied Science degree in Environmental Engineering in 2002 from the University of Waterloo in Waterloo, Ontario. Mr. So joined **exp** (formerly Trow Associates Inc.) in 2007 and has over nine years of professional experience in environmental site assessments and remediation. At **exp**, he has acted as project manager on several large scale remediation projects in the Greater Toronto Area. His main responsibilities as project manager included contract administrations, cost and timeline control, coordination of interdisciplinary project teams, communication with the clients, attending technical and public meetings, providing technical advice to the project team, conducting technical evaluations and studies and report preparations. Prior to joining **exp**, Mr. So was employed with Conestoga-Rovers & Associates for four years where he was responsible for implementing various ESAs in Canada and in the United States

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## 9 References

1. Canadian Standards Association. November 2001. *Z768-0 Phase I Environmental Site Assessment*.
2. *Occupational Health and Safety Act* - Ministry of Labour (MOL).
3. Ontario Base Map, Ministry of Natural Resources, Ontario (based on 1983 air photography).
4. "Quaternary Geology of Ontario"; Southern Sheet Map 2556, Scale 1:100,000. Issued 1991.
5. "Bedrock Geology of Ontario, Southern Sheet," Ontario Geological Survey, Map 2544. Scale 1: 1 000 000 Issued 1991.
6. Inventory of Coal Gasification Plant Waste Sites in Ontario. Ontario Ministry of the Environment, April 1987.
7. Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario. Ontario Ministry of the Environment, November 1988.
8. Waste Disposal Site Inventory. Waste Management Branch Ontario Ministry of the Environment, June 1991.
9. Ontario Inventory of PCB Storage Sites. Ontario Ministry of the Environment, 1993- 2003-2004.
10. Hazardous Waste Information Systems (HWIS, 1986-2005).

## 10 Limitations and Use of Report

### BASIS OF REPORT

This report ("Report") is based on site conditions known or inferred by the investigation undertaken as of the date of the Report. Should changes occur which potentially impact the condition of the site the recommendations of **exp** may require re-evaluation. Where special concerns exist, or the Client has special considerations or requirements, these should be disclosed to **exp** to allow for additional or special investigations to be undertaken not otherwise within the scope of investigation conducted for the purpose of the Report.

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### STANDARD OF CARE

The Report has been prepared in a manner consistent with the degree of care and skill exercised by engineering consultants currently practicing under similar circumstances and locale. No other warranty, expressed or implied, is made. Unless specifically stated otherwise, the Report does not contain environmental consulting advice.

### COMPLETE REPORT

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We trust this report satisfies your immediate requirements. If you have any questions regarding the information in this report, please do not hesitate to contact this office.

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