

Phase One Environmental Site Assessment

Charleston Homes Residential Subdivision

Town of Collingwood, Ontario

Prepared For:

Charleston Homes
c/o C.C. Tatham & Associates Ltd.
115 Sandford Fleming Drive
Collingwood, Ontario
L9Y 5A6

SPL Project No.:10001514-210 (rev1)
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Attention: Mr. Charlie Kuiken

Phase One Environmental Site Assessment
Charleston Homes Residential Subdivision, Town of Collingwood, ON

1. EXECUTIVE SUMMARY

SPL Consultants Limited (SPL) was retained by Charlie Kuiken of Charleston Homes to conduct a Phase One Environmental Site Assessment (Phase One ESA) at the above noted properties. It is our understanding that the Phase One ESA is required to support residential development. The Phase One Property is located at the municipal address of 7972 & 8004 Poplar Sideroad and CON 10 E PT LOT 40, Town of Collingwood, Ontario, and is currently operating as agricultural land. The Phase One Property is located on the northwest side of Poplar Sideroad and High Street.

We are pleased to enclose a summary of the findings of this Phase One Environmental Site Assessment (ESA):

1. The area under assessment, the Phase One Property, is an irregular shaped parcel of land approximately 77.6 acres (33.4 hectares) in area. Currently, the Phase One Property is used to cultivate vegetables. Historically, the Phase One Property was an apple orchard until 2010. An environmental impact on the Phase One Property as a result of the historical use of pesticides application to the apple orchard is considered to be moderate to high.
2. Based on the Natural Heritage Information Centre, the Shining-branch Hawthorn, Stiff Yellow Flax and a Lichen were identified as species at risk on the Phase One Property.
3. No underground storage tanks (USTs) were identified on the Phase One Property or Phase One Study Area. No aboveground storage tanks were observed on the Phase One Property at the time of the site visit. One (1) aboveground storage tank (AST) was observed on the south adjoining property with the municipal address of 7914 Poplar Sideroad located approximately 90 m southeast from the Phase One Property. The tank had a capacity between 900L to 1000L and historically held gasoline. An environmental impact on the Phase One Property as a result of fuel storage on the Phase One Property is considered to be low as it is considered to be cross-gradient to the Phase One Property.
4. The Phase One Property adjoins municipal & private roadways; these areas may have been subject to de-icing activities. As a result, electrical conductivity (EC) and sodium adsorption ratio

(SAR) impacts may exist in the subsurface soils to various degrees. An environmental impact on the Phase One property is considered to be low.

Based on the information gathered during the interviews and records review it was determined that there are potentially contaminating activities (PCAs) on the Phase One Property and the Phase One Property Study Area.

Phase One Property

- Application of pesticides and herbicides

A soil sampling program was completed in conjunction with a geotechnical investigation drilling program at the site in March 2015, and included collection of twelve soil samples and two duplicate samples. The samples were collected by SPL and submitted for analysis of metals and inorganics, and OC pesticides, as set out in O.Reg. 153/04 as amended. The results of the analysis indicate OC pesticide concentration above applicable MOE standards were identified in top soils collected as part of the geotechnical investigation and appear to be isolated to the top soil. Off-site disposal of impacted soils will be required to meet MOE standards for residential development.

A Phase Two ESA is required to further evaluate the environmental quality of the groundwater on the Phase One Property. Our recommendations for a Phase Two ESA will include:

- A groundwater sampling program should be completed to address potential OC pesticide impacts in groundwater on the Phase One Property.

It should be noted that general environmental management and housekeeping practices were reviewed as part of this assessment with respect to their impact on the environmental condition of the property; however, a detailed review of regulatory compliance issues was beyond the scope of our investigation. This Phase One ESA does not constitute an audit of environmental management practices, indicate geotechnical conditions or identify geologic hazards.

Information used in this report was reviewed based on proximity of potentially contaminating activities to the Phase One Property as well as based on anticipated direction of local groundwater flow. This investigation was completed in accordance to O.Reg 153/04 as amended.

2. INTRODUCTION

SPL Consultants Limited (SPL) was retained by Charlie Kuiken of Charleston Homes to conduct a Phase One Environmental Site Assessment (Phase One ESA) at the above noted properties. It is our understanding that the Phase One ESA is required to support residential development and that a Record of Site Condition is not required.

Information used to prepare this report was gathered from the following sources: SPL's site visit; previous investigations; maps; geological publications; information obtained from city directories, and information provided to SPL by the client.

The scope of this Phase One ESA conforms to the requirements outlined in O. Reg 153/04 as amended.

The purpose of this Phase One ESA was to identify the presence or absence of potentially contaminating activities within the Phase One Study Area and based on this information; assess the requirements for additional investigation in the form of a Phase Two Environmental Site Assessment. This Phase One ESA does not include physical sampling or testing, and is based solely on visual observations and a review of available or supplied factual data.

2.a. PHASE ONE PROPERTY INFORMATION

The area under assessment, the Phase One Property, is an irregular shaped parcel of land located on the northwest corner of Poplar Sideroad and High Street in the Town of Collingwood. Black Ash Creek borders the northwest side and meanders through the south west side of the Phase One Property. The parcel has an area of approximately 77.6 acres (33.4 hectares). The Phase One Property has two municipal addresses consisting of 7972 Poplar Sideroad and 8004 Poplar Sideroad in Collingwood, Ontario. The Phase One Property also has an area without a municipal address which has a legal address of Concession 10 E, Part Lot 40 RP. A site location plan is presented in **Drawing 1**.

A legal description for the Phase One Property is as follows;

Legal Description: PART OF LOT 40, CONCESSION 10, GEOGRAPHIC TOWNSHIP OF NOTTAWASAGA, TOWNSHIP OF COLLINGWOOD, COUNTY OF SIMCOE

The table below lists the current owners and the contact information of the persons interviewed as part of this investigation.

TABLE 1: SUMMARY OF CURRENT OWNERS AND PROPERTY USE

Property	Current Owner	Property Use
<i>PART OF LOT 40, CONCESSION 10, GEOGRAPHIC TOWNSHIP OF NOTTAWASAGA, TOWNSHIP OF COLLINGWOOD, COUNTY OF SIMCOE</i>	<i>Charleston Homes Residential Development</i>	Agricultural

3. SCOPE OF INVESTIGATION

The scope of the assessment included:

- (i) A site reconnaissance on May 15, 2015;
- (ii) A review of municipal directories and Fire Insurance Plans (FIP) to determine previous occupants of the Phase One Property and adjoining properties and to determine the first developed use of the phase one properties;
- (iii) Search available databases to determine potentially contaminating activities that may have taken place within the study area;
- (iv) Interpretation of available aerial photographs;
- (v) Interpretation of available topographic and geological maps;
- (vi) An interview with a representative from the Phase One Property;
- (vii) Conclusions based on information obtained during the investigation regarding the need for a Phase Two Environmental Site Assessment.

4. RECORDS REVIEW

4.a. GENERAL

4.a.i. Phase One Study Area Determination

The Phase One Study Area was determined by a 250m offset from the Phase One Property boundaries, in accordance with O.Reg.153/04 as amended. Potentially contaminating activities were identified within the 250 m Phase One Study Area; it is unlikely that potentially contaminating activities beyond 250 m of the Phase One Property would have a detrimental environmental impact on the Phase One Property. As such, the need to extend the boundary of the Phase One Study Area is not warranted.

Properties within the Phase One Study Area consist of residential and agricultural use. The properties within the Phase One Study area were a part of the site reconnaissance and our historical review. Potentially contaminating activities identified during our review are discussed within this report. A conceptual site model is provided in **Drawing 2**.

4.a.ii. First Developed Use Determination

Based on our review of the historical data of the property, first developed use appears to have been agricultural based on the 1881 County Atlas. Surrounding properties also appear to have been used for agricultural purposes.

4.a.iii. Fire Insurance Plans

A review of the Catalogue of Canadian Fire Insurance Plans (FIPs) 1875-1975 indicated no maps were created for the area of the Phase One Property. FIP generally cover areas where there are development.

4.a.iv. City Directory

A search of the city directories available for review at the Toronto Reference Library, Simcoe County Archives and the Collingwood Public Library was undertaken in order to determine historical occupants of the Phase One Property as well as adjoining properties. It was indicated that directories were not available for the Phase One Property or Phase One Study Area.

4.a.v. Environmental Reports

A total of one (1) report was previously conducted for the Phase One Property as follows:

- Geotechnical Investigation, Charleston Homes Residential Development, Town of Collingwood, Ontario prepared for Charleston Homes c/o C.C. Tatham & Associates Ltd., by SPL Consultants Limited, dated December 2015.

The results of a soil sampling program that was completed in conjunction with the geotechnical investigation drilling program indicate:

- All samples analyzed are below the MOECC Table 1 property use criteria, with the exception of cyanide from sample BH9 SS2 (0.8-1.5 mbg); Dichlorodiphenyldichloroethane (DDD) and/or Dichlorodiphenyldichloroethylene (DDE) in sample BH3 TS, BH9 TS, BH11 TS, BH16 TS and BH21 TS (0-0.2 mbg).
- All samples analyzed are below the MOECC Table 2 and 3 RPI property uses, with the exception of cyanide that exceeded in sample BH9 SS2 (0.8-1.5 mbg); and DDE in sample BH21 TS, BH3 TS and BH9 TS (0-0.2 mbg).

A copy of the soil characterization letter, which was included in the geotechnical report is included as **Appendix B**.

National Pollutant Release Inventory – Environment Canada (1993-2010)

A search of the National Pollutant Release Inventory, published by Environmental Canada, indicated that the Phase One Property and properties within the Phase One Study Area were not registered in the National Pollutant Release Inventory database.

National Heritage Information Center– Ontario MNR

A search of the National Heritage Information Center Database published by the Ministry of Natural Resources indicated that the following Species at Risk were observed on the Phase One Property and/or properties within the Phase One Study Area:

TABLE 2: SUMMARY OF NHIC DATABASE RESULTS

Species at Risk	Scientific Name	Status	Last Observation Date
Shining-branch Hawthorn	<i>Crataegus magniflora</i>	Species at Risk	1958
Stiff Yellow Flax	<i>Linum medium</i> var. <i>medium</i>	Species at Risk	Not Listed
A Lichen	<i>Melanelia subargentifera</i>	Species at Risk	1976

Ontario Inventory of PCB Storage Sites – Ontario MOE (1999, 2003)

A review of the Ontario MOE Inventory of PCB Storage Sites in Ontario (1999, 2003) indicated that the Phase One Property and adjoining properties were not registered as a PCB storage sites.

Certificates of Approval – Ontario MOE (1985-2011)

A search for certificates of approval (CofA) indicated that the Phase One Property and properties within the Phase One Study Area were not registered with CofA.

Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario - Ontario MOE

A review of a Waste Disposal Site Inventory published by the MOE lists former coal gasification plants and industrial sites producing and using coal tar and related tars. Given that none of these sites were located in the expected up-gradient direction from the Phase One Property and all sites were located outside of the Phase One Study Area, no environmental impacts from these sites on the Phase One Property are anticipated.

Dangerous Goods Accident Information System (DGAIS) Database 1988-2002

A review of the DGAIS Database indicated no incidents in which a spill occurred within the Phase One Study Area.

MOE Hazardous Waste Information System (HWIS) 1986-Apr 2012

The MOE Hazardous Waste Information System database was searched for the years of 1994, 1999, 2001, 2003, 2005, 2006, 2007, 2008 and 2009, 2010, 2011, 2012. Based on a review of the MOE HWIS results, the Phase One Property and properties within the Phase One Study Area were not registered in the database for the generation, use and/or storage of hazardous wastes.

MOE Freedom of Information Request

A request was submitted to the MOE Freedom of Information and Protection of Privacy Office (**Appendix C**) to determine if there were any environmental incidents or violations associated with the subject property; whether any Control Orders have been issued; whether there have been any other environmental concerns associated with the Phase One Property such as complaints, inspections, etc.; whether any environmental investigations have been carried out regarding the Phase One Property; and, to determine if the Ministry's Spills Action Centre's (SAC's) files contain any reported spills in the Phase One Property vicinity. Note that the SAC's database dates back only to 1988 and many of the occurrences on file have only been reported voluntarily. In addition, the MOE was requested to search their files (all years) regarding the following parameters: air emissions, water, sewage, wastewater and pesticides.

Files pertinent to this investigation would include, though are not limited to: regulatory permits, records; material safety data sheets; underground utility drawings; inventories of chemicals, chemical usage and chemical storage areas; inventory of aboveground and underground storage tanks (ASTs and USTs);

monitoring data, including that done at the request of the MOE; historical and current waste management, receiver and generator records; process, production and maintenance documents related to areas of potential environmental concern; spills/discharge records; emergency and contingency plans; environmental audit reports; site plan of facility showing areas of production and manufacturing.

A response has not yet been received from the MOE. The client will be made aware of any records identified by the file search, when a response is received from the MOE. Additional fees may be charged if a large volume of records are found.

EcoLog ERIS TSSA/UST Search

No underground storage tanks (USTs) were identified on the Phase One Property or Phase One Study Area. An environmental impact on the Phase One Property is not considered.

Environmental Registry – Government of Ontario

A review of the Environmental Registry website did not identify the Phase One Property or the Phase One Study Area in the database.

Oak Ridges Moraine Conservation Plan Land Use Designation Map (2002)

A review of this map indicated that the Phase One Property and the Phase One Study Area are not located within a natural core area or a natural linkage area of the Oak Ridges Moraine.

Niagara Escarpment Plan Maps (2005)

A review of these maps indicated that the Phase One Property and the Phase One Study Area are not located within an area designated as an escarpment natural area or an escarpment protection area of the Niagara Escarpment.

Waste Disposal Sites - Ontario MOE (1991)

A review of a Waste Disposal Site Inventory published by the MOE indicated that the Phase One Property has no active or closed waste disposal site located within a 1 km radius.

4.b. PHYSICAL SETTING SOURCES

4.b.i. Aerial Photographs

Aerial photographs for the years 1938, 1969, and 1987 were obtained from the National Archives Collection. Satellite images for the years 2002, 2008 and 2013 were obtained from the Simcoe County GIS Map. The Simcoe County Atlas was utilized to obtain a more historical image from 1881. Due to the scale of the aerial photographs, general descriptions of the Phase One Property and adjacent properties are discussed. Copies of these aerial photographs are presented in **Appendix D**.

TABLE 3: SUMMARY OF AERIAL PHOTOGRAPHS

Aerial Photos	Phase One Property	Adjacent Properties	Phase One Study Area
1881 Simcoe County Atlas	- Black Ash Creek appears in a similar configuration as it appears today. No structures were depicted on the Phase One Property at this time	-The adjoining properties appear to be undeveloped at this time and consist of agricultural fields	-The Phase One Study area appears to have been undeveloped at this time with the exception of Campbell Street located on the northeast border of the site
1938 Aerial Photograph	- The Phase One Property appears to be developed as agricultural lands growing a variety of crops along Black Ash Creek, including use as an orchard. It appears that High Street has yet to be connected to Poplar Sideroad at this time.	-The adjoining properties appear to be agricultural/residential land. -The Black Ash Creek and its surrounding forested areas appear to be in a configuration similar to the present.	-The remaining Phase One Study area appears to be agricultural/residential land -Clark Street is not present at this time.
1969 Aerial Photograph	- The Phase One Property appears to be in a similar configuration as the 1938 aerial photograph. The barn structure observed during SPL site reconnaissance and located on 7914 Poplar Sideroad is present in the 1938 aerial photograph	-The adjoining properties appear to be agricultural and residential -The cemetery located on the southwest corner is shown -The Black Ash Creek and its surrounding forested areas appear to be in a configuration similar to the present.	-The remaining Phase One Study area appears to be in similar configuration as the 1938 aerial photograph.
1987 Aerial Photograph	-The Phase One Property is similar to the 1969 aerial photograph. High Street has still yet to be connected to Poplar Sideroad at this time.	-The adjoining properties appear to be agricultural and residential -The Black Ash Creek and its surrounding forested areas appear to be in a configuration similar to the present.	-The remaining Phase One Study area appears to be in similar configuration as the 1969 aerial photograph.
2002 Satellite Image	-Orchard trees are visible on the Phase One property. High Street has been connected to Poplar Sideroad at this time.	-The adjoining properties appear to be agricultural and residential -The Black Ash Creek and its surrounding forested areas appear to be in a configuration similar to the present.	-The remaining Phase One Study area appears to be in similar configuration as the 1987 aerial photograph. There appears to be a few more residential dwellings along Poplar Sideroad.
2008 Satellite Image	- Orchard trees are visible on the Phase One property.	-The adjoining properties appear to be agricultural and residential	-The remaining Phase One Study area appears in similar

Aerial Photos	Phase One Property	Adjacent Properties	Phase One Study Area
		-The Black Ash Creek and its surrounding forested areas appear to be in a configuration similar to the present.	configuration to the 2002 Satellite Image. -The property to the east appears to have been graded for a residential subdivision.
2013 Satellite Image	-The Phase One Property is similar to how it appears currently.	-The adjoining properties appear to be agricultural and residential and similar to how they appear currently -The Black Ash Creek and its surrounding forested areas appear to be in a configuration similar to the present.	-The remaining Phase One Study area appears similar to how they appear currently -Clark Street and residential dwellings have been constructed

4.b.ii. Topography, Hydrology, Geology

According to a topographic map provided by C.C. Tatham & Associates, the Phase One Property has an elevation ranging from approximately 199 to 210 meters above sea level (masl) and gradually in a northeast direction. A copy of the topographic map can be found in **Appendix E**.

Based on bedrock mapping provided by the OGS Earth website, published by the Ontario Ministry of Northern Development, Mines and Forestry, bedrock in the area of the Phase One Property is divided into two formations. The west side of the Phase One Property straddles the Georgian Bay Formation, which consists of shale, limestone, dolostone and siltstone. The east side of the Phase One Property straddles the Simcoe Group Formation, which in the area consists of limestone, dolostone and shale. Based on the Ontario Division of Mines Bedrock Topography Series Preliminary Map P. 924 for Collingwood-Nottawasaga Area, dated 1974, the depth to bedrock is expected to be about 10 m below ground level.

Surficial geology mapping provided by the OGS Earth website, published by the Ontario Ministry of Northern Development, Mines and Forestry, the surficial soils on the Phase One Property consist of coarse-textured glaciolacustrine deposits of sand, gravel, minor silt and clay with foreshore and basinal deposits, which are underlain by sandy silt to silty sand textured till.

The Phase One Property is located within the Nottawasaga Basin of the Simcoe Lowlands Physiographic Region (Chapman and Putnam, 1984).

According to the Greenbelt Plan 2005 provided by Ontario Ministry of Municipal Affairs and Housing the Phase One Property is not located within the Oak Ridges Moraine Conservation Plan area, the Niagara Escarpment area or the Ontario Green Belt area.

4.b.iii. Fill Materials

Based on historical aerial photography of the Phase One Property, no apparent infilling activities have occurred. An environmental impact on the Phase One Property as a result of soil movement is considered to be low.

4.b.iv. Water Bodies and Area of Natural Significance

Black Ash Creek borders the northwest side of the Phase One Property and meanders through the southwest side. The planned development is approximately 30 to 70 m from the creek. The County of Simcoe identifies the area as Farmland along the shoreline of Black Ash Creek. The area around Black Ash Creek is not designated as a provincially significant wetland.

4.b.v. Well Records

As part of this assessment, well records maintained by the Ministry of the Environment (MOE) were reviewed. A search of these records indicates that twenty (20) water wells and/or well nests have been installed within 250 m of the Phase One Property. Information regarding the depth, date of drilling, use and materials encountered are presented in **Table 4** below. The location of water wells can be found on **Drawing 2**. The depth to the water table and bedrock were not identified in some well records.

TABLE 4: WELL RECORDS LOCATED WITHIN THE PHASE ONE STUDY AREA

Well ID	Depth (mbgs)	Date Drilled	Use	Material Colour	Material A	Material B	Material C	Material Depth (m)
5729297	18.3	07/22/1992	Domestic-Water Supply	Brown	Clay	Gravel	-	6.7
				Grey	Limestone	-	-	18.3
5710151	26.2	08/13/1973	Domestic-Water Supply	Grey	Clay	-	-	7.92
				Grey	Shale	-	-	26.2
7151271	5.5	09/07/2010	-	-	-	-	-	-
7147882	-	06/28/2010	Abandoned	-	-	-	-	-
5702549	17.1	04/20/1955	Irrigation/ Domestic	-	Sand	-	-	9.1
					Gravel	-	-	12.2
					Shale	-	-	17.1
5719369	18.3	08/24/1984	Domestic – Water Supply	Brown	Sand	Clay	-	3.1
				Grey	Clay	-	-	14.6
				Grey	Limestone	-	-	18.3
7131348	25.0	06/04/2009	Domestic – Water Supply	-	Sand	Silt	-	3.7
				Grey	Clay	-	-	8.2
				Grey	Clay	Gravel	-	10.1
				Grey	Clay	Stones	-	13.4
				Grey	Gravel	Clay	-	14.3
				Brown	Shale	-	-	25.0
5725697	9.8	08/03/1989	Domestic- Water Supply	Brown	Clay	Sand	-	1.8
				Grey	Silt	-	-	3.7
				Blue	Clay	Stones	Silt	6.7
				Grey	Clay	Stones	-	9.1
				Grey	Sand	Gravel	Stones	9.8
5702568	17.4	07/28/1958	Domestic	-	Clay	Sand	-	3.7
				-	Clay	Stones	-	12.8
				-	Limestone	-	-	17.4
5702566	12.2	05/07/1954	Domestic	-	Loam	Sand	-	4.57

TABLE 4: WELL RECORDS LOCATED WITHIN THE PHASE ONE STUDY AREA

Well ID	Depth (mbgs)	Date Drilled	Use	Material Colour	Material A	Material B	Material C	Material Depth (m)
				Black	Sand	Stones	-	7.62
				-	Sand	-	-	10.7
				-	Gravel	-	-	12.2
7208004	33.5	09/02/2013	Domestic	-	Clay	-	-	6.1
				-	Clay	Sand	-	14.9
				-	Shale	-	-	33.5
5736015	13.7	05/25/2001	Domestic-Water Supply	-	Sand	Clay	Silt	1.8
				Grey	Clay	Silt	-	6.1
				Grey	Clay	Gravel	-	7.9
				Grey	Gravel	Clay	-	11.3
5702569	42.1	08/25/1965	Irrigation	Brown	Rock	-	-	13.7
				-	Sand	-	-	2.3
				-	Clay	Sand	Stones	14.9
				-	Hardpan	Gravel	-	23.8
5714243	18.3	05/21/1977	Domestic-Water Supply	-	Limestone	-	-	42.1
				Brown	Sand	Clay	-	9.1
				Grey	Clay	Shale	-	16.2
				Brown	Sand	-	-	18.3
5736465	16.8	10/15/2001	Domestic-Water Supply	Brown	Sand	Clay	-	1.5
				Brown	Clay	-	-	6.1
				Grey	Clay	Stones	-	9.1
				Grey	Clay	Gravel	Silt	11.0
				Brown	Sand	Gravel	-	14.6
				Black	Gravel	Sand	-	16.8
5702570	18.0	08/22/1966	Domestic	-	-	-	-	5.5
				-	Limestone	-	-	18.0
5702571	15.2	09/15/1967	Domestic	-	Clay	Sand	Stones	5.2
				-	Hardpan	Stones	-	7.3
				Blue	Clay	Stones	-	11.6
				Black	Shale	-	-	13.4
				-	Limestone	-	-	15.2
5720249	21.3	10/18/1985	Domestic-Water Supply	Brown	Sand	-	-	5.2
				Grey	Clay	-	-	10.4
				Brown	Clay	Silt	-	12.2
				-	Sand	-	-	15.2
				-	Limestone	-	-	21.3
5715251	12.5	05/15/1978	Domestic-Water Supply	Brown	Clay	Sand	-	5.5
				Grey	Clay	-	-	8.5
				Grey	Clay	Gravel	-	11.6
				Black	Gravel	Sand	-	12.5
5727583	18.9	11/16/1990	Domestic-Water Supply	Brown	Sand	Clay	-	6.7
				Grey	Sand	Clay	-	12.8
				Grey	Clay	Gravel	-	15.2
				Grey	Limestone	-	-	18.9

4.c. SITE OPERATING RECORDS

To be classified as an enhanced investigation property, the Phase One Property must be used or have been used in whole or in part for any of the following uses:

- any industrial use,
- as a garage,
- as a bulk liquid dispensing facility, including a gasoline outlet, or
- for the operation of dry cleaning equipment

The Phase One Property is used as agricultural land and historically has not been used for any of the above listed uses, as such; the Phase One Property is not considered an enhanced investigation property and therefore no operating records were reviewed.

5. INTERVIEWS

An interview was conducted via onsite with Mr. Douglas Reitsma who has lived on one of the south adjoining properties with the municipal address of 7914 Poplar Sideroad since 1959. Information collected from Mr. Reitsma was generally concurrent with our historical review and can be found throughout the report. Additional details can be found below within the information provided in the site reconnaissance.

6. SITE RECONNAISSANCE

6.a. GENERAL REQUIREMENTS

TABLE 5: SITE RECONNAISSANCE GENERAL REQUIREMENTS	
Date and Time of Investigation	May 15, 2015
Weather Conditions	Overcast, 13°C
Length of time of the Investigations	The Phase One Property – 1.0 hours Phase One Study Area – 1.5 hour
Facility Operating During Site Reconnaissance	Site is used as agricultural land. No one was in the field.
Qualifications of the Person Conducting Investigations	Principal Site Investigators: Nicole Collins, Environmental Officer and Gord Jarvis, Project Manager Qualified Person: David Lewis, P.Eng.

Photographs documenting the Phase One Property and Phase One study Area taken on the day of the site visit, along with written descriptions can be found in **Appendix F**.

➤ coke oven emissions	potential not observed
➤ ethylene oxide	potential not observed
➤ isocyanates	potential not observed
➤ UFFI	potential not observed
➤ Lead	potential not observed
➤ mercury	potential not observed
➤ silica	potential not observed
➤ vinyl chloride	potential not observed
➤ asbestos containing material (ACM)	potential not observed
➤ polychlorinated biphenyls (PCBs)	potential not observed

Drains Pits & Sumps

No storm drains or sumps were found on the Phase One Property during the time of the site visit.

Staining

No staining was observed on the Phase One Property at the time of the site investigation.

Substance Containers

No substance containers were observed on the Phase One Property at the time of the site investigation.

Vegetation

No stressed vegetation was observed on the Phase One Property at the time of the site investigation.

Fill Material

No stockpiles were observed on the Phase One Property at the time of the site inspection. An environmental impact on the Phase One Property as a result of soil movement is not considered.

Waste Management

Waste material is not generated on the Phase One Property.

Sodium Adsorption Ratio (SAR) and Electrical Conductivity (EC)

The Phase One Property adjoins municipal roadways; these areas may have been subject to de-icing activities. As a result, electrical conductivity (EC) and sodium adsorption ratio (SAR) impacts may exist. An environmental impact on the Phase One Property as a result of de-icing is considered low.

Potentially Contaminating Activities

Potentially contaminating activities observed during the site reconnaissance were:

Phase One Property

- Application of pesticides and herbicides; and

Phase One Study Area

- Gasoline and associated products storage in fixed tanks associated with residential home activities

Enhanced Investigation Property

For a Phase One Property to be classified as an enhanced investigation property, the property must be used or have been used in whole or in part for any of the following uses:

- any industrial use,
- as a garage,
- as a bulk liquid dispensing facility, including a gasoline outlet, or
- for the operation of dry cleaning equipment

The Phase One Property is utilized as agricultural activities. As none of the above uses were found to apply, the Phase One Property is not considered an enhanced investigation property.

6.c. WRITTEN DESCRIPTION OF INVESTIGATION

A site reconnaissance was conducted from May 15, 2015. Based on the site reconnaissance areas of potential environmental concern were identified see **Section 7.a.ii.**

7. REVIEW AND EVALUATION OF INFORMATION

7.a.i. Current and Past Uses

A summary of the current and past uses are shown below. The current uses were obtained during the site reconnaissance from public access ways. The historical occupants and property uses were observed from the aerial photographs.

TABLE 6: CURRENT AND PAST USES OF THE PHASE ONE PROPERTY

Phase One Property	Year	Name of Tenants	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, Etc.
<i>PART OF LOT 40, CONCESSION 10, GOGRAPHIC TOWNSHIP OF NOTTAWASAGA, TOWNSHIP OF COLLINGWOOD, COUNTY OF SIMCOE</i>	1881 - Present	Private Individuals	Agricultural	Based on aerial photographs

An environmental impact on the Phase One Property as a result of the historical and current land use is considered to be low to moderate.

7.a.ii. Potentially Contaminating Activity

Potentially contaminating activities as defined in Table 2 of O.Reg. 153/04, as amended, that may be contributing to an area of potential environmental concern on the Phase One Property is as follows;

Phase One Property

- PCA 40. Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications

Phase One Study Area

- PCA 28. Gasoline and Associated Products Storage in Fixed Tanks, however the AST located at the southeast adjacent property is considered cross-gradient to the Phase One Property and as such, is not considered a concern.

Areas of Potential Environmental Concern

Based on the potentially contaminating activities that were identified within the study area the following areas of potential environmental concern (APEC) were established. The contaminants of potential concern were determined based on materials that are likely to be present as a result of these activities.

TABLE 7: AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

(Refer to clause 16(2)(a), Schedule D, O.Reg. 153/04, as amended)

APEC	Location of APEC	Potentially Contaminating Activities	Location of PCA (on- or off-site)	Contaminant of Potential Concern	Media Potentially Impacted
APEC-1	All of the Phase One Property	-Pesticides (including Herbicides, Fungicides, and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications -Fertilizer Manufacturing, Processing and Bulk Storage	On-Site	OC Pesticides, EC/SAR, Metals & Inorganics	Soil Groundwater

NOTES:

1. APEC = Area of Potential Environmental Concern
2. PHC = Petroleum Hydrocarbons
3. VOC = Volatile Organic Compounds
4. PAH = Polycyclic aromatic hydrocarbon

The gasoline storage tank located on a southeast adjoining property was not included as an Area of Potential Environmental Concern due to the groundwater flow direction and proximity to the Phase One Property.

Information obtained through historical records and databases reviewed as part of this investigation are subject to the nature and accuracy of the records provided to SPL. As a result of changes or additional details within these records or databases, the conclusions of this Phase One ESA maybe affected.

7.a.iii. Phase One Conceptual Site Model

As a result of this investigation areas of potential environmental concern were determined to exist:

Phase One Property

- Application of pesticides and herbicides; and,

The potentially contaminating activities were determined through the site reconnaissance as well as a review of other available databases. Contaminants of potential concern as a result of these activities include metals and inorganics and OC Pesticides.

Based on topographical maps, the groundwater flow direction is expected to be in a north/northeast direction towards Georgian Bay. Groundwater levels may be influenced by seasonal variation. Groundwater flow direction can only be confirmed with longer term monitoring.

Information used in this report was evaluated based on proximity to the Phase One Property, anticipated direction of local groundwater flow, and the potential environmental impact on the Phase One Property as a result of or the use or activity.

It is not expected that any uncertainty or absence of information would affect the validity of the Conceptual Site Model (CSM).

8. CONCLUSIONS

8.a.i. Whether Phase Two ESA Required

A soil sampling program was completed in conjunction with a geotechnical investigation drilling program at the site in March 2015, and included collection of twelve soil samples and two duplicate samples. The samples were collected by SPL and submitted for analysis of metals and inorganics, and OC pesticides, as set out in O.Reg. 153/04 as amended. The results of the analysis indicate OC pesticide concentration above applicable MOE standards were identified in top soils collected as part of the geotechnical investigation and appear to be isolated to the top soil. Off-site disposal of impacted soils will be required to meet MOE standards for residential development.

A Phase Two ESA is required to further evaluate the environmental quality of the groundwater, on the Phase One Property. Our recommendations for a Phase Two ESA will include:

- A groundwater sampling program should be completed to address potential OC pesticide impacts in groundwater on the Phase One Property.

A groundwater sampling program should be completed to address potential OC pesticide impacts in groundwater on the Phase One Property.

Phase One Property information obtained through historical records and databases reviewed as part of this investigation are subject to the nature and accuracy of the records provided to SPL. As a result of changes or additional details within these records or databases the conclusions of this Phase One ESA may be affected.

It should be noted that general environmental management and housekeeping practices were reviewed as part of this assessment with respect to their impact on the environmental condition of the property; however, a detailed review of regulatory compliance issues was beyond the scope of our investigation. This Phase One ESA does not constitute an audit of environmental management practices, indicate geotechnical conditions or identify geologic hazards.

Information used in this report was evaluated based on proximity to the Phase One Property, anticipated direction of local groundwater flow, and the potential environmental impact on the Phase One Property as a result of potentially contaminating activities.

8.a.ii. Record of Site Condition Based on Phase One Environmental Assessment Alone

Based on the findings of this investigation, a Record of Site Condition (RSC) under O.Reg153/04 as amended cannot be filed based solely on the Phase One Environmental Site Assessment.

8.a.iii. Signatures

This report was conducted under the supervision of Dave Lewis who is considered a Qualified Person with the Ministry of the Environment as defined under Ontario Regulation 153/04, as amended. Dave has reviewed and confirmed the findings and conclusions of this report.

The company SPL Consultants Limited (SPL) was incorporated in Ontario in April 2009. The firm consists of over 200 Engineers, Professional Geoscientists, Hydrogeologists, and Technicians in four offices located in Toronto, Vaughan, Markham, Collingwood, Barrie, Cambridge and Ottawa. The principals and the team members bring many years of experience in geotechnical, pavement and environmental fields.

Nicole Collins is an Environmental Officer with SPL. Nicole has Diplomas in the Environmental Technician and Ecosystem Management Technology from Sir Sandford Fleming College. She has worked on Phase One and Phase Two Environmental Site Assessments (ESA) for 3 years.

David Lewis, P.Eng., is a Senior Consultant with SPL and has a Bachelors Degree in Engineering and is a recognized Professional Engineer in Ontario. David has conducted and managed hundreds of environmental investigations including Phase One ESA's, Phase Two ESA's and Remediation work with the Federal Government at various sites across Ontario.


SPL Consultants Limited

Prepared by:



Nicole Collins
 Environmental Officer

Reviewed by:



Joeline Chan, B.Sc
 Project Manager

NC;jc/dl



David Lewis, P. Eng.
 Principal Engineer

9. LIMITATIONS

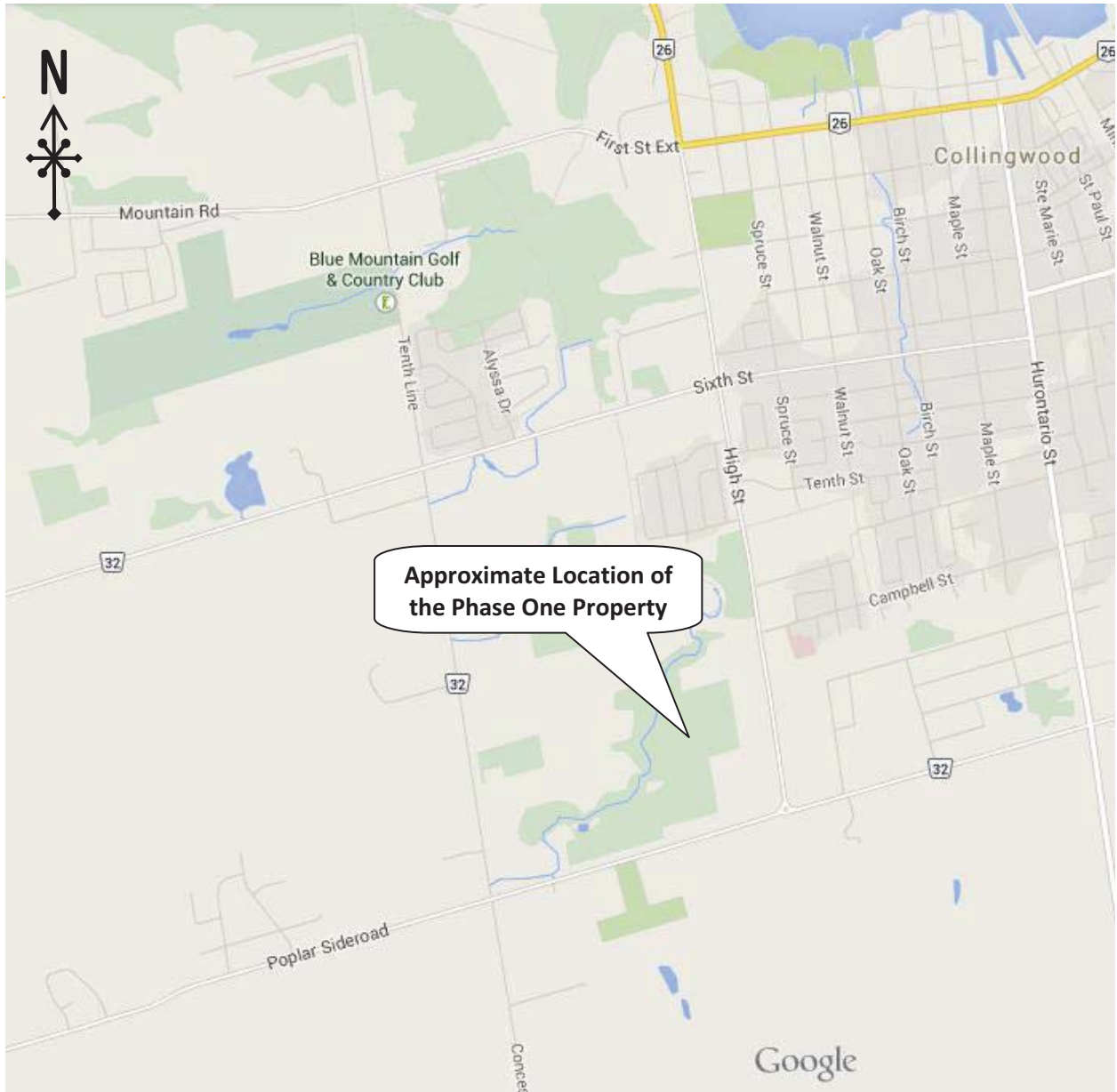
SPL has performed this site assessment in accordance with local generally accepted professional practices and procedures at the time of the assessment within the scope of Phase One Environmental Site Assessments under O. Reg 153/04 as amended. As such, the assessment update does not include any sampling or testing for potential contaminants such as asbestos, PCBs, radon gas, or airborne pollutants, etc. Occupancy use, codes, rules, and procedures change rapidly with time in the environmental engineering field and the reader is advised to update the findings and recommendations on a regular basis. The report herein comprises a statement of professional opinion based on visual observation only and the reader is advised that visual observation is not effective in determining all conditions that affect environmental compliance. These services are not subject to any express or implied warranties and none should be inferred.

This report was prepared for the account of Charleston Homes Residential Development. The material in this report reflects SPL's judgment in light of the information available to it at the time of preparation. Any use, which a Third Party not noted above makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. SPL Consultants Limited accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.


10. REFERENCES

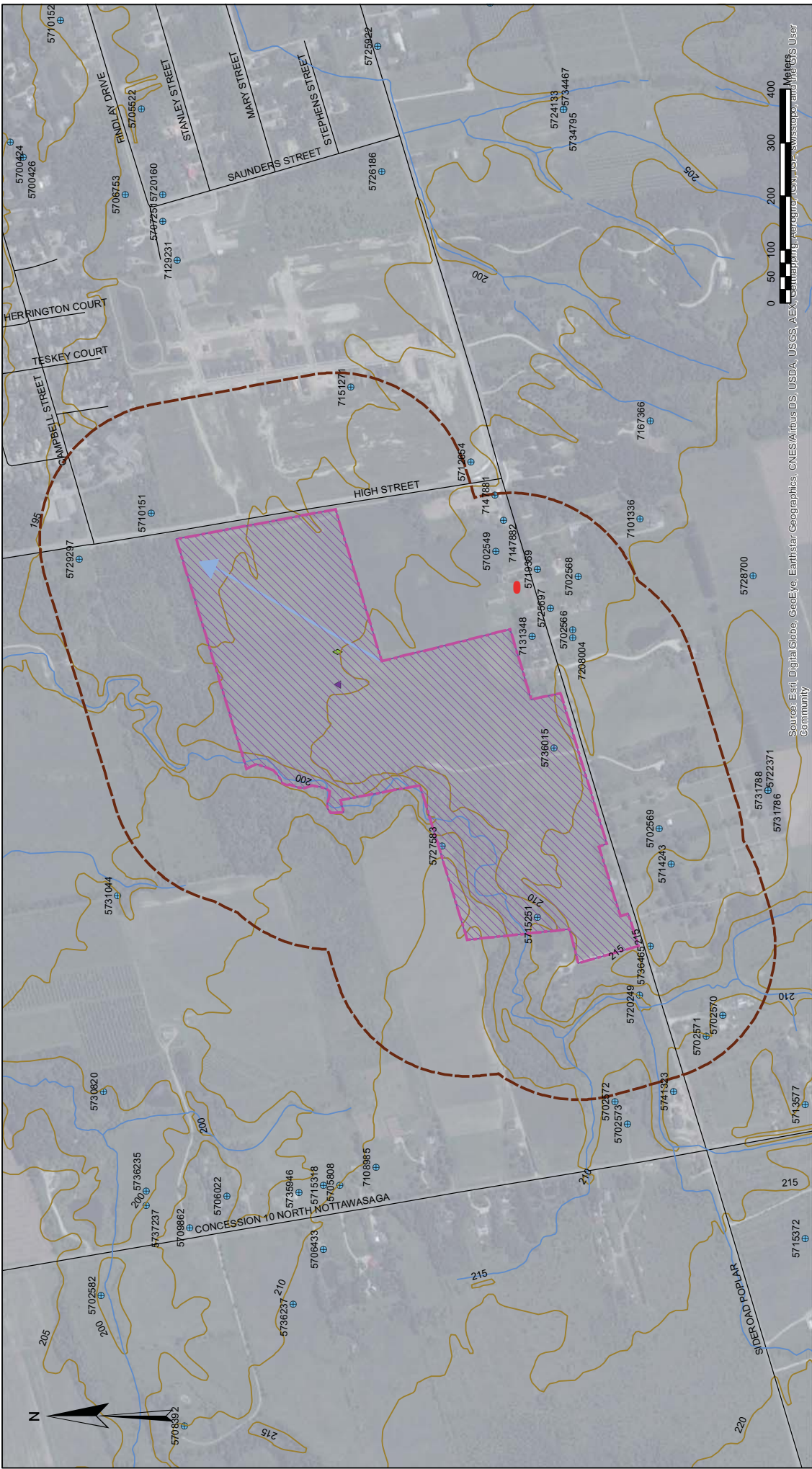
1. Topographic Maps - Ontario Base Map Series
2. The Canadian County Atlas 1880
3. Library and Archives Canada
4. Catalogue of Canadian Fire Insurance Plans 1875-1975
5. Dangerous Goods Accident Information System
6. Google Earth
7. Government of Ontario Environmental Registry
8. MOE Certificates of Approval Database
9. MOE Environmental Monitoring and Reporting Branch Well Records
10. MOE Hazardous Waste Information System 1994, 1999, 2001, 2003, 2005-2012
11. MOE PCB Database 1999, 2003
12. National Pollutant Release Inventory (NPRI)
13. Natural Heritage Information Center Database (NHIC)
14. Niagara Escarpment Plan Maps
15. Oak Ridges Moraine Conservation Plan Land Use Designation Map
16. Occupational Health and Safety Act
17. O.Reg. 153/04, as amended
18. Technical Standards and Safety Authority
19. Waste Disposal Site Inventory
20. MNR Land Information Ontario; Provincial Parks Regulated, Areas of Natural and Scientific Interest, Wetlands, and Wilderness Areas
21. County of Simcoe GIS Map

Drawings



©Google Maps

 <p>14 Ronell Crescent, Unit 1 Collingwood, ON L9Y 4J7 T: 705-445-0064 F: 705-445-0067</p>	SITE LOCATION PLAN		
	<p>Scale: 1:30000</p>	<p>PHASE ONE ENVIRONMENTAL SITE ASSESSMENT CHARLESTON HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO</p>	<p>Prepared By: NC</p>
	<p>Date: May 2015</p>		<p>Reviewed By: DL</p>
<p>Project: 10001514-210</p>	<p>Prepared For: Charleston Homes Residential Development</p>	<p>Drawing No. 1</p>	



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND:	
	Phase One Study Area
	Phase One Property
	APEC1
	Inferred Groundwater Flow Direction
	Waterway
	Roads
	Contour Line
	MOECC Waterwell
	PCA 4b- Pesticides, Manufacturing, Processing, Bulk Storage and Large Scale Applications
	PCA 22- Fertilizer Manufacturing, Processing and Bulk Storage
	PCA 28- Gasoline and Associated Products Storage in Fixed Tanks

Note: This drawing should be read in conjunction with the accompanying report.

Source: Golden Horseshoe GIS Database 2002

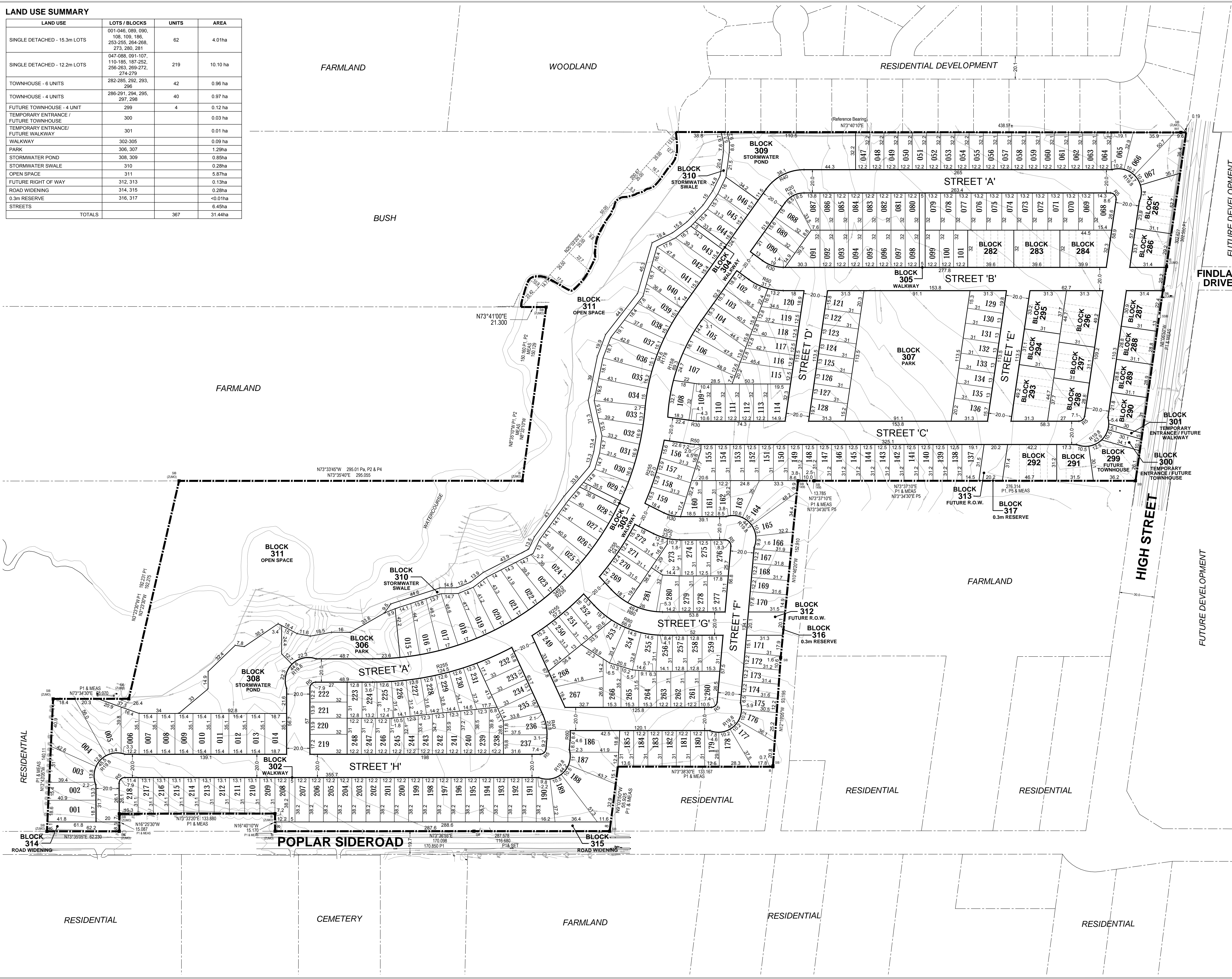
Client:	C.C. Tatham & Associates	Project No.:	10001514-210	Drawing No.:	2
Drawn:	RA	Approved:	PMR	Title:	PHASE ONE CONCEPTUAL SITE MODEL
Date:	December 2015	Scale:	As Shown	Project:	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT - PROPOSED CHARLESTON HOMES RESIDENTIAL SUBDIVISION DEVELOPMENT
Original Size:	Tabloid	Rev:	1		



APPENDIX A

Legal Survey

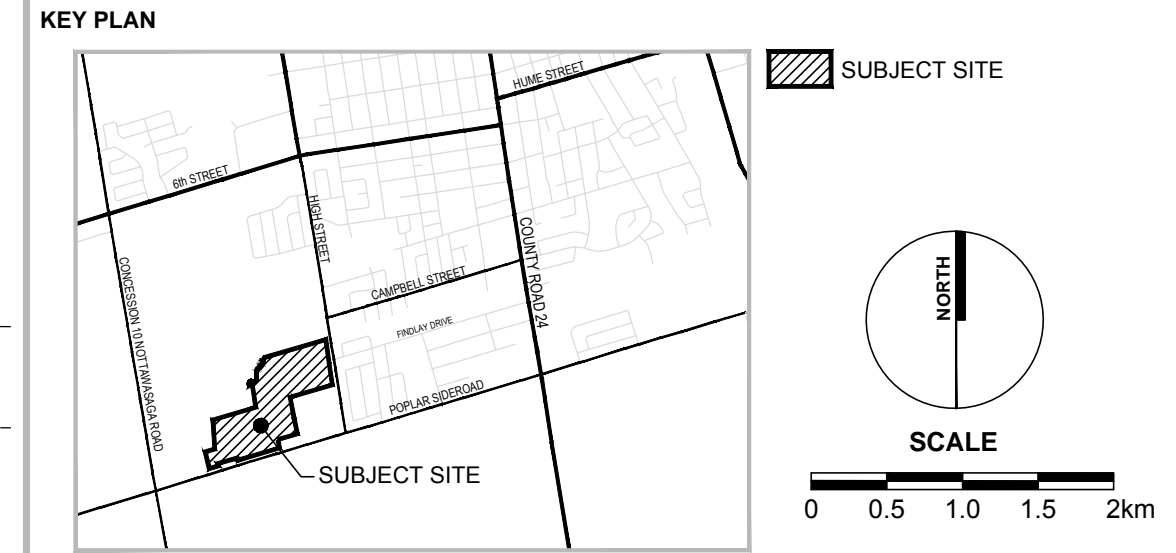
LAND USE	LOTS/BLOCKS	UNITS	AREA
SINGLE DETACHED - 15.3m LOTS	001-046, 089, 090, 108, 109, 186, 253-255, 264-268, 273, 280, 281	62	4.01ha
SINGLE DETACHED - 12.2m LOTS	047-088, 091-107, 110-185, 187-252, 256-263, 269-272, 274-279	219	10.10 ha
TOWNHOUSE - 6 UNITS	282-285, 292, 293, 296	42	0.96 ha
TOWNHOUSE - 4 UNITS	286-291, 294, 295, 297, 298	40	0.97 ha
FUTURE TOWNHOUSE - 4 UNIT	299	4	0.12 ha
TEMPORARY ENTRANCE / FUTURE TOWNHOUSE	300		0.03 ha
TEMPORARY ENTRANCE / FUTURE WALKWAY	301		0.01 ha
WALKWAY	302-305		0.09 ha
PARK	306, 307		1.29ha
STORMWATER POND	308, 309		0.85ha
STORMWATER SWALE	310		0.28ha
OPEN SPACE	311		5.87ha
FUTURE RIGHT OF WAY	312, 313		0.13ha
ROAD WIDENING	314, 315		0.28ha
0.3m RESERVE	316, 317		<0.01ha
STREETS			6.45ha
TOTALS		367	31.44ha



LEGAL DESCRIPTION
 PART OF LOT 40, CONCESSION 10
 GEOGRAPHIC TOWNSHIP OF NOTTAWASAGA
 TOWN OF COLLINGWOOD
 COUNTY OF SIMCOE

OWNER'S CERTIFICATE
 I HEREBY AUTHORIZE MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED TO SUBMIT THIS PLAN FOR APPROVAL.
 DATE: NOVEMBER 30, 2015
 CHARLIE KUIKEN - PRESIDENT
 CHARLESTON HOMES

SURVEYOR'S CERTIFICATE
 I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.
 DATE: NOVEMBER 30, 2015
 JAMES M. LAWS - O.L.S.
 VAN HARTEN SURVEYING INC.



LEGEND

- BOUNDARY LINE
- RIGHT OF WAY LINE
- BLOCK LINE
- LOT LINE
- UNIT LINE
- PARCEL FABRIC

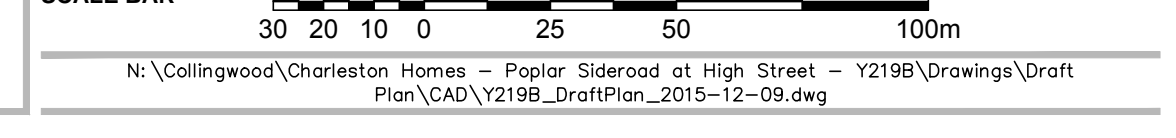
REVISION No.	DATE	ISSUED / REVISION	BY
ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT R.S.O. 1990 C.P.13 AS AMENDED			
A. AS SHOWN	F. AS SHOWN	K. ALL SERVICES AS REQUIRED	
B. AS SHOWN	G. AS SHOWN	L. NONE	
C. AS SHOWN	H. MUNICIPAL WATER SUPPLY		
D. RESIDENTIAL	I. SANDY SILT		
E. AS SHOWN	J. AS SHOWN		

PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE MHBC PLANNING
 113 COLLIER STREET
 BARRIE, ON. L4M 1H2
 P: 705 728 0045 F: 705 728 2010
 WWW.MHBCPLAN.COM

STAMP	DATE
	NOV. 30, 2015
FILE No.	Y219B
SCALE	1:1,500 (ARCH D)
DRAWN BY	M.M.
CHECKED BY	K.M.
OTHER	

PROJECT
 CHARLESTON SUBDIVISION
 CHARLESTON HOMES
 143 DENNIS STREET
 P.O. BOX 760
 ROCKWOOD, ON N0B 2K0

FILE NAME
 DRAFT PLAN OF SUBDIVISION
 DWG No. 1 of 1



APPENDIX B

Previous Report

Project: 10001514-290

April 20, 2015

C.C. Tatham & Associates Ltd.
 115 Sandford Fleming Drive
 Collingwood, Ontario
 L9Y 5A6

Attention: Mr. Jeff Akitt, P.Eng.

Re: **Soil Characterization Letter**

Charleston Homes Residential Subdivision-Poplar Sideroad & High Street, Collingwood, Ontario

SPL Consultants (SPL) was retained by C.C. Tatham & Associates Ltd. to provide chemical characterization of soils at the above noted site in Collingwood, Ontario.

In order to assess options for potential offsite soil disposal of soils at the above captioned site, a total of twelve (12) soil samples and two (2) duplicate samples (DUP 1 & DUP2) were collected from the geotechnical boreholes advanced on the property in March 2015. Samples were collected by SPL and submitted for analysis of metals and inorganics, and OC pesticides, as set out in O.Reg. 153/04 as amended, Section XV.1 of the Environmental Protection Act (EPA). The **Certificates of Analysis** are attached. Sample locations are provided in the following table.

Sample ID	Sample Date	Location	Depth (mbg)
BH1 TS	March 12, 2015	North East corner of the site	0-0.6 Top soil overlying sandy silt soil with trace organics
BH1 SS2	March 12, 2015	North East corner of the site	0.8-1.4 Sandy silt, trace clay.
BH21 TS	March 10, 2015	South west corner of the site	0-0.6 Top soil overlying sandy silt soil with trace organics
BH21 SS2	March 10, 2015	South west corner of the site	0.8-1.4 Silty sand to sandy silt
BH3 TS	March 12, 2015	North central portion of the site	0-0.6 Top soil overlying silty sand with trace organics
BH3 SS2	March 12, 2015	North central portion of the site	0.8-1.4 Silty sand

BH9 TS	March 12, 2015	North west portion of the site	0-0.6 Top soil, silty sand trace organics
BH9 SS2 (DUP 1)	March 12, 2015	North west portion of the site	0.8-1.4 Silty sand
BH11 TS	March 13, 2015	Central portion of the site	0-0.6 Top soil, silty sand trace organics
BH11 SS2 (DUP 2)	March 13, 2015	Central portion of the site	0.8-1.4 Silty sand
BH16 TS	March 10, 2015	South east portion of the site	0-0.6 Top soil, sandy silt, trace organics
BH16 SS2	March 10, 2015	South east portion of the site	0.8-1.4 Sandy silt

Sample locations are presented under **Drawing 1**.

Soil samples were collected and handled in accordance with generally accepted procedures used by the environmental consulting industry. Prior to each sampling event, new disposable gloves were used to transfer samples in plastic bags and glass jars supplied by the laboratory. All soil samples were kept under refrigerated conditions during field storage and transportation to the environmental analytical laboratory.

No visual or olfactory evidence of environmental impact (debris or staining) was noted in any of the soil samples collected.

The chemical analysis was conducted by ALS Environmental (ALS) located in Mississauga, Ontario. ALS is a member of the Canadian Association for Laboratory Accreditation (CALA) and meets the requirements of Section 47 of O.Reg. 153/04 certifying that the analytical laboratory be accredited in accordance with the International Standard ISO/IEC 17025 and with standards developed by the Standards Council of Canada.

For the purposes of soil disposal, the results of chemical analyses were compared to the Background Site Condition Standards for All Property Uses other than Agricultural as contained in Table 1 of the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act," published by the Ministry of Environment (MOE) on April 15, 2011. Additionally the results were also compared to Residential/Parkland/Institutional (RPI) and Industrial/Commercial/Community (ICC) Property Use Standards for Potable Ground Water Condition and Non-Potable Ground Water Condition as contained in Tables 2 and 3, respectively of the aforementioned document.

Based on the results of the chemical analysis, SPL provides the following conclusions/recommendations:

- When compared to MOE Table 1 property use standards all samples meet with the exception of cyanide from sample BH9 SS2; Dichlorodiphenyldichloroethane (DDD) and/or Dichlorodiphenyldichloroethylene (DDE) in sample BH3 TS, BH9 TS and BH21 TS.
- When compared to MOE Table 2 and 3 RPI property uses, all samples meet with the exception of cyanide that exceeded in sample BH9 SS2; and DDE in sample BH21 TS, BH3 TS and BH9 TS
- When compared to MOE Table 2 and 3 ICC property uses, all samples meet with the exception of cyanide that exceeded in sample BH9 SS2; and DDE in sample BH21 TS, BH3 TS and BH9 TS
- The vertical and lateral extents of the exceedances are unknown.
- Separation and re-testing may be an option to reduce disposal cost.
- The results of this testing evaluates the environmental quality of the soil and does not pertain to the geotechnical suitability of the material.
- Acceptance of any excavated soil will be at the discretion of the receiving site.

The purpose of this testing was to chemically characterize the soils analyzed and does not constitute a Phase Two Environmental Site Assessment as defined in O.Reg.153/04, as amended.

It should be noted that if any aesthetically impacted soils are identified during excavation it is recommended that SPL be notified in order to conduct further assessment and/or testing of the material in question.

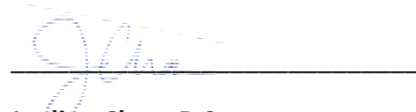
This report was prepared for the account of C.C. Tatham & Associates Ltd. The material in this report reflects SPL's judgment in light of the information available to it at the time of preparation. Any use, which a Third Party not noted above makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. SPL Consultants Limited accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

Thank you for the opportunity to be of service on this project. Should you have any questions or wish to review the contents of this letter in more detail, please do not hesitate to contact the undersigned.

Yours Very Truly,

SPL Consultants Limited

Prepared By:

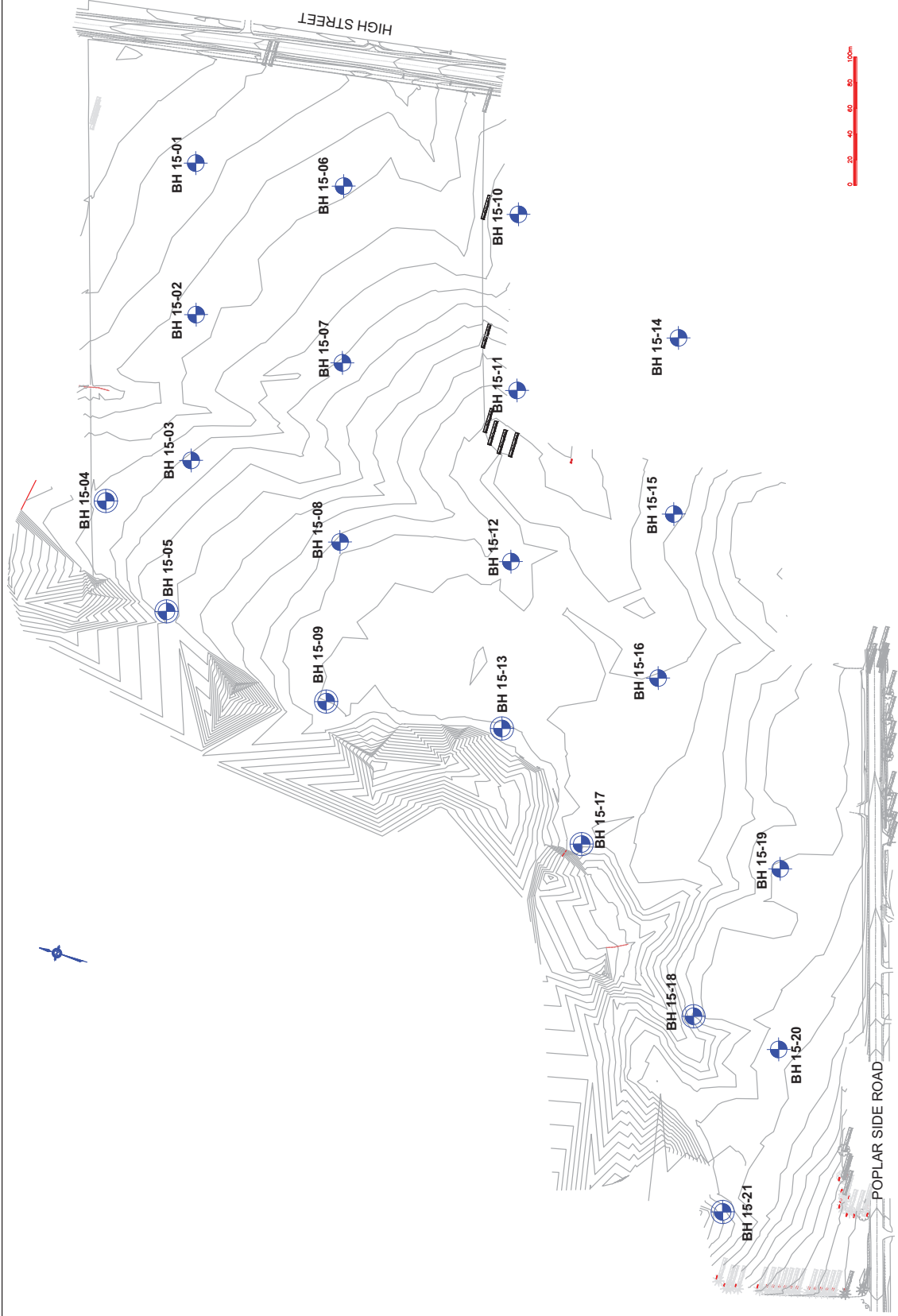


Joeline Chan, B.Sc.
Project Manager – Environmental Services

Attachments

Drawing 1

Laboratory Certificates of Analysis



Client:	1671745 Ontario Limited c/o C C Tatham & Associates Ltd.	Project No.:	10001514	Drawing No.:	F-1
Drawn:	ZMO	Title:	Borehole Location Plan		
Date:	April 21, 2015	Approved:	KS	Soil Quality Assessment - Charleston Homes Residential Subdivision Development, High Street and Poplar Side Road, Collingwood, Ontario	
Original Size:	Tabloid	Scale:	As Shown	SPL Consultants Limited Geotechnical - Environmental - Materials - Hydrogeology	
		Rev:	N/A		

LEGEND

-  Borehole
-  Borehole with Monitoring Well



SPL CONSULTANTS LIMITED
ATTN: Marco Visentin
14 Ronell Crescent
Collingwood Ontario L9Y 4J7

Date Received: 17-MAR-15
Report Date: 24-MAR-15 15:00 (MT)
Version: FINAL

Client Phone: 705-445-0064

Certificate of Analysis

Lab Work Order #: L1588231
Project P.O. #: NOT SUBMITTED
Job Reference: 10001514
C of C Numbers: 14-413128, 14-413129
Legal Site Desc:

Emerson Perez
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 5730 Coopers Avenue, Unit #26, Mississauga, ON L4Z 2E9 Canada | Phone: +1 905 507 6910 | Fax: +1 905 507 6927
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1588231-1 SOIL 12-MAR-15 DUP 1	L1588231-2 SOIL 13-MAR-15 DUP 2	L1588231-3 SOIL 12-MAR-15 BH1 TS	L1588231-4 SOIL 12-MAR-15 BH1 SS2	L1588231-5 SOIL 10-MAR-15 12:00 BH21 TS
Grouping	Analyte					
SOIL						
Physical Tests	Conductivity (mS/cm)	0.101	0.0921	0.128	0.125	0.179
	% Moisture (%)	17.6	16.8	13.9	14.3	18.6
	pH (pH units)	7.67	7.54	7.36	7.77	6.81
Cyanides	Cyanide, Weak Acid Diss (ug/g)	<0.050	<0.050	<0.050	<0.050	<0.050
Saturated Paste Extractables	SAR (SAR)	<0.10	<0.10	<0.10	0.17	<0.10
	Calcium (Ca) (mg/L)	8.37	15.6	23.8	15.6	24.4
	Magnesium (Mg) (mg/L)	0.48	0.53	0.71	4.02	3.02
	Sodium (Na) (mg/L)	0.98	0.88	0.56	2.92	0.73
Metals	Antimony (Sb) (ug/g)	<1.0	<1.0	<1.0	<1.0	<1.0
	Arsenic (As) (ug/g)	2.1	2.8	2.8	2.9	6.3
	Barium (Ba) (ug/g)	17.5	21.7	25.1	36.0	28.6
	Beryllium (Be) (ug/g)	<0.50	<0.50	<0.50	<0.50	<0.50
	Boron (B) (ug/g)	6.5	6.2	6.6	9.5	<5.0
	Boron (B), Hot Water Ext. (ug/g)	<0.10	<0.10	0.14	0.11	0.16
	Cadmium (Cd) (ug/g)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (ug/g)	10.0	12.0	11.3	14.1	13.7
	Cobalt (Co) (ug/g)	3.9	5.2	3.9	6.6	4.3
	Copper (Cu) (ug/g)	10.9	11.4	10.3	12.6	6.3
	Lead (Pb) (ug/g)	3.1	3.2	4.5	4.5	11.0
	Mercury (Hg) (ug/g)	<0.010	<0.010	0.131	<0.010	0.031
	Molybdenum (Mo) (ug/g)	<1.0	<1.0	<1.0	<1.0	<1.0
	Nickel (Ni) (ug/g)	7.9	11.4	9.4	13.2	9.0
	Selenium (Se) (ug/g)	<1.0	<1.0	<1.0	<1.0	<1.0
	Silver (Ag) (ug/g)	<0.20	<0.20	<0.20	<0.20	<0.20
	Thallium (Tl) (ug/g)	<0.50	<0.50	<0.50	<0.50	<0.50
	Uranium (U) (ug/g)	<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V) (ug/g)	18.0	20.0	18.2	24.0	24.5
Zinc (Zn) (ug/g)	20.4	20.1	19.5	26.0	27.9	
Speciated Metals	Chromium, Hexavalent (ug/g)	<0.20	<0.20	0.39	<0.20	0.62
Organochlorine Pesticides	Aldrin (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	gamma-hexachlorocyclohexane (ug/g)	<0.010	<0.010	<0.010	<0.010	<0.010
	alpha-chlordane (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Chlordane (Total) (ug/g)	<0.028	<0.028	<0.028	<0.028	<0.028
	gamma-chlordane (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	op-DDD (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
pp-DDD (ug/g)	<0.020	<0.020	<0.020	<0.020	0.048	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1588231-6 SOIL 10-MAR-15 12:00 BH21 SS2	L1588231-7 SOIL 12-MAR-15 BH3 TS	L1588231-8 SOIL 12-MAR-15 BH3 SS2	L1588231-9 SOIL 12-MAR-15 12:00 BH9 TS	L1588231-10 SOIL 12-MAR-15 12:00 BH9 SS2
Grouping	Analyte					
SOIL						
Physical Tests	Conductivity (mS/cm)	0.0880	0.128	0.101	0.131	0.0967
	% Moisture (%)	18.8	20.7	19.4	9.83	17.1
	pH (pH units)	7.80	6.71	7.44	6.94	7.75
Cyanides	Cyanide, Weak Acid Diss (ug/g)	<0.050	<0.050	<0.050	<0.050	0.060
Saturated Paste Extractables	SAR (SAR)	<0.10	<0.10	<0.10	<0.10 ^{SAR:Q}	<0.10
	Calcium (Ca) (mg/L)	15.4	20.4	18.3	19.4	14.7
	Magnesium (Mg) (mg/L)	0.80	1.05	0.66	1.32	0.66
	Sodium (Na) (mg/L)	0.72	0.50	0.76	<0.50	0.79
Metals	Antimony (Sb) (ug/g)	<1.0	<1.0	<1.0	<1.0	<1.0
	Arsenic (As) (ug/g)	1.2	2.2	1.7	3.2	1.7
	Barium (Ba) (ug/g)	10.2	14.6	13.9	14.6	10.7
	Beryllium (Be) (ug/g)	<0.50	<0.50	<0.50	<0.50	<0.50
	Boron (B) (ug/g)	<5.0	<5.0	<5.0	<5.0	<5.0
	Boron (B), Hot Water Ext. (ug/g)	<0.10	<0.10	<0.10	0.12	<0.10
	Cadmium (Cd) (ug/g)	<0.50	<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (ug/g)	6.6	7.1	6.1	11.6	6.0
	Cobalt (Co) (ug/g)	2.3	2.3	2.3	2.8	2.4
	Copper (Cu) (ug/g)	5.5	4.4	6.1	4.4	9.7
	Lead (Pb) (ug/g)	1.9	3.6	2.5	7.5	2.0
	Mercury (Hg) (ug/g)	<0.010	0.026	<0.010	0.014	<0.010
	Molybdenum (Mo) (ug/g)	<1.0	<1.0	<1.0	<1.0	<1.0
	Nickel (Ni) (ug/g)	4.5	4.9	5.7	5.1	5.0
	Selenium (Se) (ug/g)	<1.0	<1.0	<1.0	<1.0	<1.0
	Silver (Ag) (ug/g)	<0.20	<0.20	<0.20	<0.20	<0.20
	Thallium (Tl) (ug/g)	<0.50	<0.50	<0.50	<0.50	<0.50
	Uranium (U) (ug/g)	<1.0	<1.0	<1.0	<1.0	<1.0
	Vanadium (V) (ug/g)	14.9	15.0	11.7	26.6	12.3
Zinc (Zn) (ug/g)	8.9	8.9	8.9	12.6	11.3	
Speciated Metals	Chromium, Hexavalent (ug/g)	<0.20	0.52	0.26	<0.20	<0.20
Organochlorine Pesticides	Aldrin (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	gamma-hexachlorocyclohexane (ug/g)	<0.010	<0.010	<0.010	<0.010	<0.010
	alpha-chlordane (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Chlordane (Total) (ug/g)	<0.028	<0.028	<0.028	<0.028	<0.028
	gamma-chlordane (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	op-DDD (ug/g)	<0.020	<0.020	<0.020	0.030	<0.020
	pp-DDD (ug/g)	<0.020	0.073	<0.020	0.073	<0.020

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1588231-11	L1588231-12	L1588231-13	L1588231-14
		Description	SOIL	SOIL	SOIL	SOIL
		Sampled Date	13-MAR-15	13-MAR-15	10-MAR-15	10-MAR-15
		Sampled Time			12:00	12:00
		Client ID	BH11 TS	BH11 SS2	BH16 TS	BH16 SS2
Grouping	Analyte					
SOIL						
Physical Tests	Conductivity (mS/cm)		0.0935	0.164	0.160	0.141
	% Moisture (%)		21.4	16.0	24.2	14.2
	pH (pH units)		5.96	7.22	7.08	7.80
Cyanides	Cyanide, Weak Acid Diss (ug/g)		<0.050	<0.050	<0.050	<0.050
Saturated Paste Extractables	SAR (SAR)		<0.10	<0.10	<0.10	0.12
	Calcium (Ca) (mg/L)		12.1	28.9	22.0	18.4
	Magnesium (Mg) (mg/L)		0.96	0.83	1.43	2.87
	Sodium (Na) (mg/L)		0.58	1.97	0.95	2.12
Metals	Antimony (Sb) (ug/g)		<1.0	<1.0	<1.0	<1.0
	Arsenic (As) (ug/g)		4.6	1.4	4.7	1.6
	Barium (Ba) (ug/g)		20.5	10.3	22.1	18.5
	Beryllium (Be) (ug/g)		<0.50	<0.50	<0.50	<0.50
	Boron (B) (ug/g)		<5.0	<5.0	<5.0	6.0
	Boron (B), Hot Water Ext. (ug/g)		0.19	<0.10	0.48	0.18
	Cadmium (Cd) (ug/g)		<0.50	<0.50	<0.50	<0.50
	Chromium (Cr) (ug/g)		10.8	6.0	10.5	8.9
	Cobalt (Co) (ug/g)		2.5	1.9	2.7	3.4
	Copper (Cu) (ug/g)		6.1	4.3	12.3	8.0
	Lead (Pb) (ug/g)		12.4	2.1	7.3	2.6
	Mercury (Hg) (ug/g)		0.018	<0.010	0.023	<0.010
	Molybdenum (Mo) (ug/g)		<1.0	<1.0	<1.0	<1.0
	Nickel (Ni) (ug/g)		5.9	4.3	5.6	6.9
	Selenium (Se) (ug/g)		<1.0	<1.0	<1.0	<1.0
	Silver (Ag) (ug/g)		<0.20	<0.20	<0.20	<0.20
	Thallium (Tl) (ug/g)		<0.50	<0.50	<0.50	<0.50
	Uranium (U) (ug/g)		<1.0	<1.0	<1.0	<1.0
	Vanadium (V) (ug/g)		25.0	12.0	20.5	16.8
	Zinc (Zn) (ug/g)		21.3	9.1	25.7	14.4
Speciated Metals	Chromium, Hexavalent (ug/g)		<0.20	<0.20	<0.20	<0.20
Organochlorine Pesticides	Aldrin (ug/g)		<0.020	<0.020	<0.020	<0.020
	gamma-hexachlorocyclohexane (ug/g)		<0.010	<0.010	<0.010	<0.010
	alpha-chlordane (ug/g)		<0.020	<0.020	<0.020	<0.020
	Chlordane (Total) (ug/g)		<0.028	<0.028	<0.028	<0.028
	gamma-chlordane (ug/g)		<0.020	<0.020	<0.020	<0.020
	op-DDD (ug/g)		<0.020	<0.020	<0.020	<0.020
	pp-DDD (ug/g)		<0.020	<0.020	<0.020	<0.020

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1588231-1 SOIL 12-MAR-15 DUP 1	L1588231-2 SOIL 13-MAR-15 DUP 2	L1588231-3 SOIL 12-MAR-15 BH1 TS	L1588231-4 SOIL 12-MAR-15 BH1 SS2	L1588231-5 SOIL 10-MAR-15 12:00 BH21 TS
Grouping	Analyte					
SOIL						
Organochlorine Pesticides	Total DDD (ug/g)	<0.028	<0.028	<0.028	<0.028	0.048
	o,p-DDE (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	pp-DDE (ug/g)	<0.020	<0.020	0.027	<0.020	0.862
	Total DDE (ug/g)	<0.028	<0.028	<0.036	<0.028	0.862
	op-DDT (ug/g)	<0.020	<0.020	<0.020	<0.020	0.028
	pp-DDT (ug/g)	<0.020	<0.020	<0.020	<0.020	0.206
	Total DDT (ug/g)	<0.028	<0.028	<0.028	<0.028	0.234
	Dieldrin (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Endosulfan I (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Endosulfan II (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Endosulfan (Total) (ug/g)	<0.028	<0.028	<0.028	<0.028	<0.028
	Endrin (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Heptachlor (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Heptachlor Epoxide (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Hexachlorobenzene (ug/g)	<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachlorobutadiene (ug/g)	<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachloroethane (ug/g)	<0.010	<0.010	<0.010	<0.010	<0.010
	Methoxychlor (ug/g)	<0.020	<0.020	<0.020	<0.020	<0.020
	Surrogate: 2-Fluorobiphenyl (%)	96.7	99.4	96.5	97.5	124.7
	Surrogate: d14-Terphenyl (%)	99.3	97.2	96.0	91.1	110.9

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1588231-6	L1588231-7	L1588231-8	L1588231-9	L1588231-10
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	10-MAR-15	12-MAR-15	12-MAR-15	12-MAR-15	12-MAR-15
		Sampled Time	12:00			12:00	12:00
		Client ID	BH21 SS2	BH3 TS	BH3 SS2	BH9 TS	BH9 SS2
Grouping	Analyte						
SOIL							
Organochlorine Pesticides	Total DDD (ug/g)		<0.028	0.073	<0.028	0.103	<0.028
	o,p-DDE (ug/g)		<0.020	<0.020	<0.020	<0.020	<0.020
	pp-DDE (ug/g)		<0.020	0.608	0.020	0.640	<0.020
	Total DDE (ug/g)		<0.028	0.608	<0.028	0.640	<0.028
	op-DDT (ug/g)		<0.020	0.065	<0.020	0.136	<0.020
	pp-DDT (ug/g)		<0.020	0.441	<0.020	0.409	<0.020
	Total DDT (ug/g)		<0.028	0.506	<0.028	0.545	<0.028
	Dieldrin (ug/g)		<0.020	<0.020	<0.020	<0.020	<0.020
	Endosulfan I (ug/g)		<0.020	<0.020	<0.020	<0.020	<0.020
	Endosulfan II (ug/g)		<0.020	<0.020	<0.020	<0.020	<0.020
	Endosulfan (Total) (ug/g)		<0.028	<0.028	<0.028	<0.028	<0.028
	Endrin (ug/g)		<0.020	<0.020	<0.020	<0.020	<0.020
	Heptachlor (ug/g)		<0.020	<0.020	<0.020	<0.020	<0.020
	Heptachlor Epoxide (ug/g)		<0.020	<0.020	<0.020	<0.020	<0.020
	Hexachlorobenzene (ug/g)		<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachlorobutadiene (ug/g)		<0.010	<0.010	<0.010	<0.010	<0.010
	Hexachloroethane (ug/g)		<0.010	<0.010	<0.010	<0.010	<0.010
	Methoxychlor (ug/g)		<0.020	<0.020	<0.020	<0.020	<0.020
	Surrogate: 2-Fluorobiphenyl (%)		98.4	99.6	96.7	98.2	95.4
	Surrogate: d14-Terphenyl (%)		90.5	93.6	88.5	92.8	99.1

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1588231-11 SOIL 13-MAR-15 BH11 TS	L1588231-12 SOIL 13-MAR-15 BH11 SS2	L1588231-13 SOIL 10-MAR-15 12:00 BH16 TS	L1588231-14 SOIL 10-MAR-15 12:00 BH16 SS2
Grouping	Analyte				
SOIL					
Organochlorine Pesticides	Total DDD (ug/g)	<0.028	<0.028	<0.028	<0.028
	o,p-DDE (ug/g)	<0.020	<0.020	<0.020	<0.020
	pp-DDE (ug/g)	0.082	<0.020	0.185	<0.020
	Total DDE (ug/g)	0.082	<0.028	0.185	<0.028
	op-DDT (ug/g)	<0.020	<0.020	<0.020	<0.020
	pp-DDT (ug/g)	0.038	<0.020	0.031	<0.020
	Total DDT (ug/g)	0.038	<0.028	0.031	<0.028
	Dieldrin (ug/g)	<0.020	<0.020	<0.020	<0.020
	Endosulfan I (ug/g)	<0.020	<0.020	<0.020	<0.020
	Endosulfan II (ug/g)	<0.020	<0.020	<0.020	<0.020
	Endosulfan (Total) (ug/g)	<0.028	<0.028	<0.028	<0.028
	Endrin (ug/g)	<0.020	<0.020	<0.020	<0.020
	Heptachlor (ug/g)	<0.020	<0.020	<0.020	<0.020
	Heptachlor Epoxide (ug/g)	<0.020	<0.020	<0.020	<0.020
	Hexachlorobenzene (ug/g)	<0.010	<0.010	<0.010	<0.010
	Hexachlorobutadiene (ug/g)	<0.010	<0.010	<0.010	<0.010
	Hexachloroethane (ug/g)	<0.010	<0.010	<0.010	<0.010
	Methoxychlor (ug/g)	<0.020	<0.020	<0.020	<0.020
	Surrogate: 2-Fluorobiphenyl (%)	97.3	96.5	100.3	124.1
	Surrogate: d14-Terphenyl (%)	87.2	86.6	82.8	100.9

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SAR:Q	Qualified SAR value: actual SAR is lower but is incalculable due to Na, Ca or Mg below detection limit.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B
<p>A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
CHLORDANE-T-CALC-WT	Soil	Chlordane Total sums	CALCULATION
<p>Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.</p>			
CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD
<p>The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
CR-CR6-IC-R511-WT	Soil	Hex Chrom-O.Reg 153/04 (July 2011)	SW846 3060A/7199 R511
<p>Soil sample undergoes a alkaline digestion process where the sample is acidified and derivatized with 1,5-diphenylcarbazide (DPC) using ion chromatography.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
DDD-DDE-DDT-CALC-WT	Soil	DDD, DDE, DDT sums	CALCULATION
<p>Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.</p>			
EC-R511-WT	Soil	Conductivity-O.Reg 153/04 (July 2011)	MOEE E3138
<p>A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
ENDOSULFAN-T-CALC-WT	Soil	Endosulfan Total sums	CALCULATION
<p>Aqueous sample is extracted by liquid/liquid extraction with a solvent mix. After extraction, a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.</p>			
HG-R511-WT	Soil	Mercury-O.Reg 153/04 (July 2011)	SW846 3050B/7471
<p>Solid sample is digested with a heated, strong, mixed acid solution to convert all forms of mercury to divalent mercury. The divalent mercury is then reduced to elemental mercury, sparged from solution and analyzed by CVAAS.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A
<p>Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.</p> <p>Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).</p>			
MET-200.2-CCMS-WT	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A (mod)
<p>Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CRC ICPMS.</p> <p>Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may</p>			

Reference Information

be environmentally available. This method does not dissolve all silicate materials and may result in a partial extraction. depending on the sample matrix, for some metals, including, but not limited to Al, Ba, Be, Cr, Sr, Ti, Tl, and V.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PEST-OC-511-WT	Soil	OC Pesticides-O.Reg 153/04 (July 2011)	SW846 8270 (511)

Soil sample is extracted in a solvent, after extraction a number of clean up techniques may be applied, depending on the sample matrix and analyzed by GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-R511-WT	Soil	pH-O.Reg 153/04 (July 2011)	MOEE E3137A
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A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C
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A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

14-413128	14-413129
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GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L1588231

Report Date: 24-MAR-15

Page 1 of 8

Client: SPL CONSULTANTS LIMITED
 14 Ronell Crescent
 Collingwood Ontario L9Y 4J7

Contact: Marco Visentin

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT								
	Soil							
Batch	R3161777							
WG2056497-3	DUP	L1588862-1						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	40	19-MAR-15
WG2056497-2	IRM	SALINITY_SOIL4						
Boron (B), Hot Water Ext.			87.9		%		70-130	19-MAR-15
WG2056497-1	MB							
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	19-MAR-15
WG2056497-4	MS	L1588862-1						
Boron (B), Hot Water Ext.			124.3		%		60-140	19-MAR-15
CN-WAD-R511-WT								
	Soil							
Batch	R3163700							
WG2055956-3	DUP	L1588231-1						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	20-MAR-15
WG2055956-2	LCS							
Cyanide, Weak Acid Diss			113.6		%		80-120	20-MAR-15
WG2055956-1	MB							
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	20-MAR-15
WG2055956-4	MS	L1588231-1						
Cyanide, Weak Acid Diss			103.0		%		70-130	20-MAR-15
CR-CR6-IC-R511-WT								
	Soil							
Batch	R3162260							
WG2055955-3	CRM	WT-SQC012						
Chromium, Hexavalent			96.2		%		70-130	19-MAR-15
WG2055955-4	DUP	L1588231-1						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	19-MAR-15
WG2055955-2	LCS							
Chromium, Hexavalent			96.4		%		80-120	19-MAR-15
WG2055955-1	MB							
Chromium, Hexavalent			<0.20		ug/g		0.2	19-MAR-15
EC-R511-WT								
	Soil							
Batch	R3161600							
WG2056499-4	DUP	WG2056499-3						
Conductivity		0.927	0.978		mS/cm	5.4	20	19-MAR-15
WG2056700-1	LCS							
Conductivity			99.9		%		90-110	19-MAR-15
WG2056499-1	MB							
Conductivity			<0.0040		mS/cm		0.004	19-MAR-15
HG-R511-WT								
	Soil							



Quality Control Report

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Client: SPL CONSULTANTS LIMITED
 14 Ronell Crescent
 Collingwood Ontario L9Y 4J7

Contact: Marco Visentin

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-R511-WT		Soil						
Batch	R3162366							
WG2056501-2	CRM	WT-SS-1						
Mercury (Hg)			127.9		%		70-130	20-MAR-15
WG2056501-6	DUP	L1588231-1						
Mercury (Hg)		<0.010	<0.010	RPD-NA	ug/g	N/A	30	20-MAR-15
WG2056501-4	LCS							
Mercury (Hg)			109.5		%		80-120	20-MAR-15
WG2056501-1	MB							
Mercury (Hg)			<0.010		ug/g		0.01	20-MAR-15
MET-200.2-CCMS-WT		Soil						
Batch	R3162278							
WG2056501-6	DUP	L1588231-1						
Antimony (Sb)		<1.0	<0.10	RPD-NA	ug/g	N/A	30	19-MAR-15
Arsenic (As)		2.1	2.03		ug/g	4.7	30	19-MAR-15
Barium (Ba)		17.5	15.2		ug/g	14	40	19-MAR-15
Beryllium (Be)		<0.50	0.19		ug/g	9.7	30	19-MAR-15
Boron (B)		6.5	5.3		ug/g	20	30	19-MAR-15
Cadmium (Cd)		<0.50	0.028		ug/g	12	30	19-MAR-15
Chromium (Cr)		10.0	8.37		ug/g	17	30	19-MAR-15
Cobalt (Co)		3.9	3.54		ug/g	9.7	30	19-MAR-15
Copper (Cu)		10.9	10.0		ug/g	8.0	30	19-MAR-15
Lead (Pb)		3.1	2.81		ug/g	11	40	19-MAR-15
Molybdenum (Mo)		<1.0	0.13		ug/g	17	40	19-MAR-15
Nickel (Ni)		7.9	7.17		ug/g	9.9	30	19-MAR-15
Selenium (Se)		<1.0	<0.20	RPD-NA	ug/g	N/A	30	19-MAR-15
Silver (Ag)		<0.20	<0.10	RPD-NA	ug/g	N/A	40	19-MAR-15
Thallium (Tl)		<0.50	<0.050	RPD-NA	ug/g	N/A	30	19-MAR-15
Uranium (U)		<1.0	0.334		ug/g	16	30	19-MAR-15
Vanadium (V)		18.0	16.1		ug/g	11	30	19-MAR-15
Zinc (Zn)		20.4	16.9		ug/g	19	30	19-MAR-15
WG2056501-3	LCS							
Antimony (Sb)			103.2		%		80-120	19-MAR-15
Arsenic (As)			103.9		%		80-120	19-MAR-15
Barium (Ba)			99.4		%		80-120	19-MAR-15
Beryllium (Be)			86.3		%		80-120	19-MAR-15
Boron (B)			88.3		%		80-120	19-MAR-15



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Client: SPL CONSULTANTS LIMITED
 14 Ronell Crescent
 Collingwood Ontario L9Y 4J7

Contact: Marco Visentin

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	Soil							
Batch	R3162278							
WG2056501-3	LCS							
Cadmium (Cd)			99.4		%		80-120	19-MAR-15
Chromium (Cr)			100.3		%		80-120	19-MAR-15
Cobalt (Co)			99.1		%		80-120	19-MAR-15
Copper (Cu)			97.8		%		80-120	19-MAR-15
Lead (Pb)			97.7		%		80-120	19-MAR-15
Molybdenum (Mo)			97.4		%		80-120	19-MAR-15
Nickel (Ni)			99.4		%		80-120	19-MAR-15
Selenium (Se)			103.9		%		80-120	19-MAR-15
Silver (Ag)			98.8		%		80-120	19-MAR-15
Thallium (Tl)			97.4		%		80-120	19-MAR-15
Uranium (U)			92.0		%		80-120	19-MAR-15
Vanadium (V)			101.9		%		80-120	19-MAR-15
Zinc (Zn)			94.9		%		80-120	19-MAR-15
WG2056501-1	MB							
Antimony (Sb)			<0.10		mg/kg		0.1	19-MAR-15
Arsenic (As)			<0.10		mg/kg		0.1	19-MAR-15
Barium (Ba)			<0.50		mg/kg		0.5	19-MAR-15
Beryllium (Be)			<0.10		mg/kg		0.1	19-MAR-15
Boron (B)			<5.0		mg/kg		5	19-MAR-15
Cadmium (Cd)			<0.020		mg/kg		0.02	19-MAR-15
Chromium (Cr)			<0.50		mg/kg		0.5	19-MAR-15
Cobalt (Co)			<0.10		mg/kg		0.1	19-MAR-15
Copper (Cu)			<0.50		mg/kg		0.5	19-MAR-15
Lead (Pb)			<0.50		mg/kg		0.5	19-MAR-15
Molybdenum (Mo)			<0.10		mg/kg		0.1	19-MAR-15
Nickel (Ni)			<0.50		mg/kg		0.5	19-MAR-15
Selenium (Se)			<0.20		mg/kg		0.2	19-MAR-15
Silver (Ag)			<0.10		mg/kg		0.1	19-MAR-15
Thallium (Tl)			<0.050		mg/kg		0.05	19-MAR-15
Uranium (U)			<0.050		mg/kg		0.05	19-MAR-15
Vanadium (V)			<0.20		mg/kg		0.2	19-MAR-15
Zinc (Zn)			<2.0		mg/kg		2	19-MAR-15

MOISTURE-WT **Soil**



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Client: SPL CONSULTANTS LIMITED
 14 Ronell Crescent
 Collingwood Ontario L9Y 4J7

Contact: Marco Visentin

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT								
	Soil							
Batch	R3161474							
WG2055971-3	DUP	L1588231-14						
% Moisture		14.2	15.4		%	8.1	30	19-MAR-15
WG2055971-2	LCS							
% Moisture			97.6		%		70-130	19-MAR-15
WG2055971-1	MB							
% Moisture			<0.10		%		0.1	19-MAR-15
PEST-OC-511-WT								
	Soil							
Batch	R3161517							
WG2056617-1	CVS							
Aldrin			128.6		%		50-140	19-MAR-15
a-chlordane			127.2		%		50-140	19-MAR-15
g-chlordane			134.9		%		50-140	19-MAR-15
op-DDD			110.5		%		50-140	19-MAR-15
pp-DDD			99.0		%		50-140	19-MAR-15
o,p-DDE			119.3		%		50-140	19-MAR-15
pp-DDE			119.2		%		50-140	19-MAR-15
op-DDT			95.5		%		50-140	19-MAR-15
pp-DDT			93.0		%		50-140	19-MAR-15
Dieldrin			101.3		%		50-140	19-MAR-15
Endosulfan I			128.1		%		50-140	19-MAR-15
Endosulfan II			102.0		%		50-140	19-MAR-15
Endrin			115.4		%		50-140	19-MAR-15
gamma-hexachlorocyclohexane			98.6		%		50-140	19-MAR-15
Heptachlor			92.5		%		50-140	19-MAR-15
Heptachlor Epoxide			127.7		%		50-140	19-MAR-15
Hexachlorobenzene			97.0		%		70-130	19-MAR-15
Hexachlorobutadiene			96.0		%		70-130	19-MAR-15
Hexachloroethane			100.8		%		50-140	19-MAR-15
Methoxychlor			93.9		%		50-140	19-MAR-15
WG2055978-4	DUP	L1588231-1						
Aldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
a-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
g-chlordane		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
op-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
pp-DDD		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15



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Client: SPL CONSULTANTS LIMITED
 14 Ronell Crescent
 Collingwood Ontario L9Y 4J7

Contact: Marco Visentin

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT								
	Soil							
Batch	R3161517							
WG2055978-4	DUP	L1588231-1						
o,p-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
pp-DDE		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
op-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
pp-DDT		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
Dieldrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
Endosulfan I		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
Endosulfan II		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
Endrin		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
gamma-hexachlorocyclohexane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	19-MAR-15
Heptachlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
Heptachlor Epoxide		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
Hexachlorobenzene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	19-MAR-15
Hexachlorobutadiene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	19-MAR-15
Hexachloroethane		<0.010	<0.010	RPD-NA	ug/g	N/A	40	19-MAR-15
Methoxychlor		<0.020	<0.020	RPD-NA	ug/g	N/A	40	19-MAR-15
WG2055978-2	LCS							
Aldrin			116.9		%		50-140	19-MAR-15
a-chlordane			107.7		%		50-140	19-MAR-15
g-chlordane			110.2		%		50-140	19-MAR-15
op-DDD			106.5		%		50-140	19-MAR-15
pp-DDD			97.0		%		50-140	19-MAR-15
o,p-DDE			96.8		%		50-140	19-MAR-15
pp-DDE			102.1		%		50-140	19-MAR-15
op-DDT			93.1		%		50-140	19-MAR-15
pp-DDT			87.2		%		50-140	19-MAR-15
Dieldrin			96.6		%		50-140	19-MAR-15
Endosulfan I			96.1		%		50-140	19-MAR-15
Endosulfan II			99.1		%		50-140	19-MAR-15
Endrin			109.8		%		50-140	19-MAR-15
gamma-hexachlorocyclohexane			99.0		%		50-140	19-MAR-15
Heptachlor			93.1		%		50-140	19-MAR-15
Heptachlor Epoxide			102.9		%		50-140	19-MAR-15
Hexachlorobenzene			93.1		%		50-140	19-MAR-15



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Client: SPL CONSULTANTS LIMITED
 14 Ronell Crescent
 Collingwood Ontario L9Y 4J7

Contact: Marco Visentin

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT								
	Soil							
Batch	R3161517							
WG2055978-2	LCS							
Hexachlorobutadiene			91.4		%		50-140	19-MAR-15
Hexachloroethane			97.8		%		50-140	19-MAR-15
Methoxychlor			88.6		%		50-140	19-MAR-15
WG2055978-1	MB							
Aldrin			<0.020		ug/g		0.02	19-MAR-15
a-chlordane			<0.020		ug/g		0.02	19-MAR-15
g-chlordane			<0.020		ug/g		0.02	19-MAR-15
op-DDD			<0.020		ug/g		0.02	19-MAR-15
pp-DDD			<0.020		ug/g		0.02	19-MAR-15
o,p-DDE			<0.020		ug/g		0.02	19-MAR-15
pp-DDE			<0.020		ug/g		0.02	19-MAR-15
op-DDT			<0.020		ug/g		0.02	19-MAR-15
pp-DDT			<0.020		ug/g		0.02	19-MAR-15
Dieldrin			<0.020		ug/g		0.02	19-MAR-15
Endosulfan I			<0.020		ug/g		0.02	19-MAR-15
Endosulfan II			<0.020		ug/g		0.02	19-MAR-15
Endrin			<0.020		ug/g		0.02	19-MAR-15
gamma-hexachlorocyclohexane			<0.010		ug/g		0.01	19-MAR-15
Heptachlor			<0.020		ug/g		0.02	19-MAR-15
Heptachlor Epoxide			<0.020		ug/g		0.02	19-MAR-15
Hexachlorobenzene			<0.010		ug/g		0.01	19-MAR-15
Hexachlorobutadiene			<0.010		ug/g		0.01	19-MAR-15
Hexachloroethane			<0.010		ug/g		0.01	19-MAR-15
Methoxychlor			<0.020		ug/g		0.02	19-MAR-15
Surrogate: 2-Fluorobiphenyl			100.5		%		50-140	19-MAR-15
Surrogate: d14-Terphenyl			91.1		%		50-140	19-MAR-15
WG2055978-5	MS	L1588231-1						
Aldrin			116.0		%		50-140	19-MAR-15
a-chlordane			100.1		%		50-140	19-MAR-15
g-chlordane			106.5		%		50-140	19-MAR-15
op-DDD			102.7		%		50-140	19-MAR-15
pp-DDD			99.5		%		50-140	19-MAR-15
o,p-DDE			94.6		%		50-140	19-MAR-15
pp-DDE			99.5		%		50-140	19-MAR-15



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 14 Ronell Crescent
 Collingwood Ontario L9Y 4J7

Contact: Marco Visentin

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-511-WT								
	Soil							
Batch	R3161517							
WG2055978-5	MS	L1588231-1						
op-DDT			94.9		%		50-140	19-MAR-15
pp-DDT			91.9		%		50-140	19-MAR-15
Dieldrin			94.9		%		50-140	19-MAR-15
Endosulfan I			96.8		%		50-140	19-MAR-15
Endosulfan II			101.9		%		50-140	19-MAR-15
Endrin			111.6		%		50-150	19-MAR-15
gamma-hexachlorocyclohexane			97.9		%		50-140	19-MAR-15
Heptachlor			93.0		%		50-140	19-MAR-15
Heptachlor Epoxide			104.3		%		50-140	19-MAR-15
Hexachlorobenzene			94.1		%		50-140	19-MAR-15
Hexachlorobutadiene			81.9		%		50-140	19-MAR-15
Hexachloroethane			88.1		%		50-140	19-MAR-15
Methoxychlor			94.2		%		50-140	19-MAR-15
PH-R511-WT								
	Soil							
Batch	R3161105							
WG2055954-1	DUP	L1588231-1						
pH		7.67	7.70	J	pH units	0.03	0.3	18-MAR-15
WG2056135-1	LCS							
pH			7.00		pH units		6.7-7.3	18-MAR-15
SAR-R511-WT								
	Soil							
Batch	R3161780							
WG2056499-4	DUP	WG2056499-3						
Calcium (Ca)		16.4	17.0		mg/L	3.4	40	19-MAR-15
Sodium (Na)		177	167		mg/L	5.6	40	19-MAR-15
Magnesium (Mg)		1.39	1.30		mg/L	6.5	40	19-MAR-15
WG2056499-2	IRM	WT SAR1						
Calcium (Ca)			84.2		%		70-130	19-MAR-15
Sodium (Na)			87.3		%		70-130	19-MAR-15
Magnesium (Mg)			82.8		%		70-130	19-MAR-15
WG2056499-1	MB							
Calcium (Ca)			<0.10		mg/L		0.1	19-MAR-15
Sodium (Na)			<0.50		mg/L		0.5	19-MAR-15
Magnesium (Mg)			<0.10		mg/L		0.1	19-MAR-15

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Client: SPL CONSULTANTS LIMITED
14 Ronell Crescent
Collingwood Ontario L9Y 4J7
Contact: Marco Visentin

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

APPENDIX C

Regulatory Inquiries

Freedom of Information Request

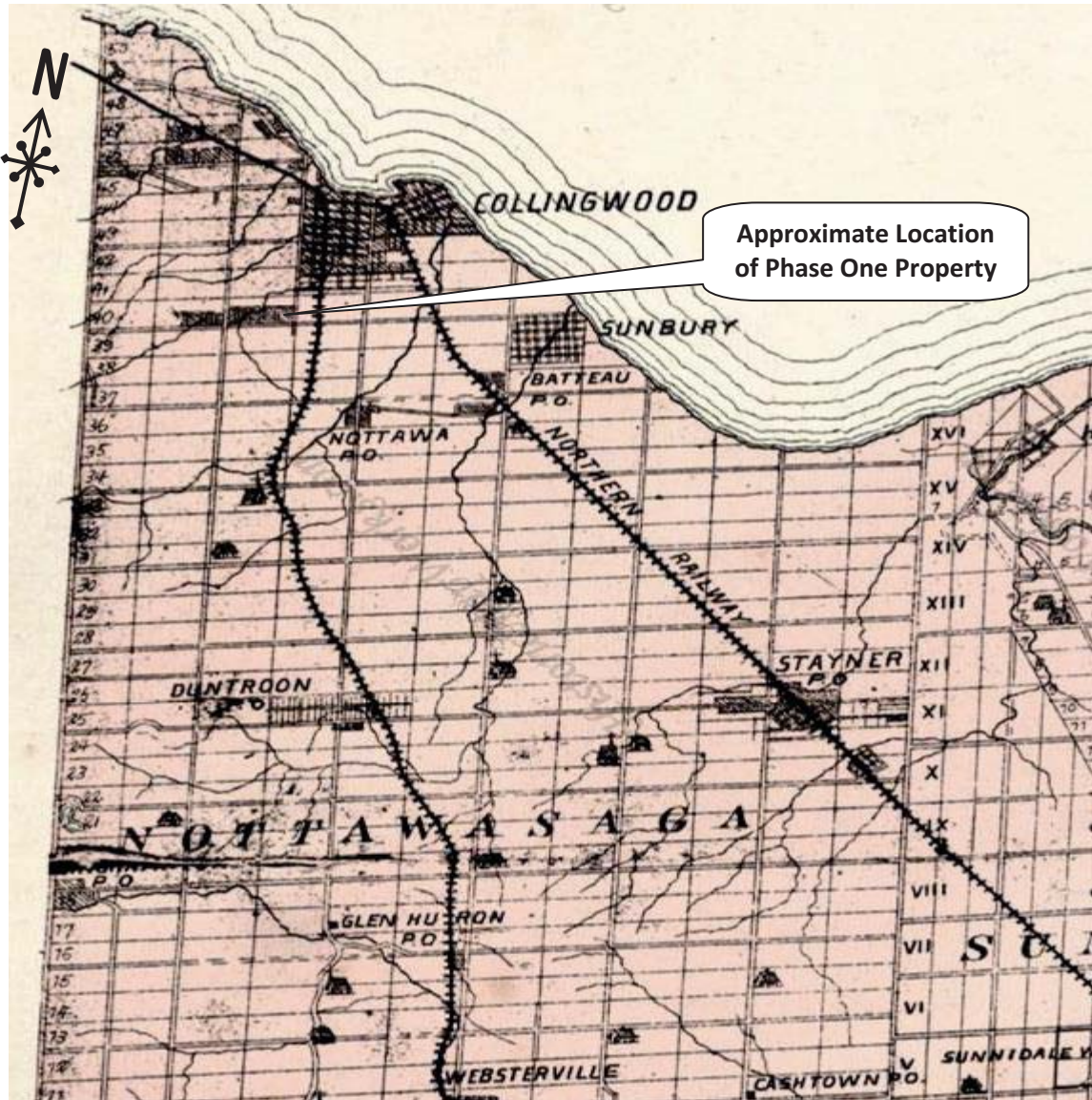
This form is for requesting documents which are in the Ministry's files on environmental concerns related to properties. Please refer to the guide on the completion and use of this form. Our fax no. is (416) 314-4285.

Requester Data			For Ministry Use Only	
Name, Title, Company Name and Mailing Address of Requester Nicole Collins SPL Consultants Limited 14 Ronell Crescent, Unit 1 Collingwood, Ontario L9Y 4J7 Email Address: ncollins@splconsultants.ca			FOI Request No. Date Request Received	
Telephone/Fax Nos. Tel 705-445-0064 Fax 705-445-0067			Fee Paid \$ ~ ACCT ~ CHQ ~ VISA/MC ~ CASH	
Your Project/Reference No. 10001514-210		Signature of Requester	<input type="checkbox"/> CNR <input type="checkbox"/> ER <input type="checkbox"/> NOR <input type="checkbox"/> SWR <input type="checkbox"/> WCR <input type="checkbox"/> SAC <input type="checkbox"/> IEB <input type="checkbox"/> EAA <input type="checkbox"/> EMR <input type="checkbox"/> SWA	
Request Parameters				
Municipal Address / Lot, Concession, Geographic Township (Municipal address essential for cities, towns or regions)				
7896, 7914, 7972 & 8004 Poplar Sideroad, CON 10 E PT LOT 40, Town of Collingwood, Ontario				
Present Property Owner(s) and Date(s) of Ownership				
<i>Charleston Homes Residential Developments (1674715 Ontario Limited)</i>				
Previous Property Owner(s) and Date(s) of Ownership				
<i>Unknown</i>				
Present/Previous Tenant(s), (if applicable)				
N/A				
Search Parameters				Specify Year(s) Requested
Files older than 2 years may require \$60.00 retrieval cost. There is no guarantee that records responsive to your request will be located.				
Environmental concerns (General correspondence, occurrence reports, abatement)				<i>all years</i>
Orders				<i>all years</i>
Spills				<i>all years</i>
Investigations/prosecutions ▶ Owner and tenant information must be provided				<i>all years</i>
Waste Generator number/classes				<i>all years</i>
Certificates of Approval ▶ Proponent information must be provided				
1987 and prior records are searched manually. Search fees in excess of \$300.00 could be incurred, depending on the types and years to be searched. Specify Certificates of Approval number (s) (if known). If supporting documents are also required, mark SD box and specify type e.g. maps, plans, reports, etc.				
	SD	Specify Year(s) Requested		
<i>air - emissions</i>	x	<i>all years</i>		
<i>water - mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster)</i>	x	<i>all years</i>		
<i>sewage - sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations</i>	x	<i>all years</i>		
<i>waste water - industrial discharge</i>	x	<i>all years</i>		
<i>waste sites - disposal, landfill sites, transfer stations, processing sites, incinerator sites</i>	x	<i>all years</i>		
<i>waste systems - haulers: sewage, non-hazardous & hazardous waste, mobile waste processing units, PCB destruction</i>	x	<i>all years</i>		
<i>pesticides - licenses</i>	x	<i>all years</i>		


A \$5.00 non-refundable application fee, payable to the Minister of Finance, is mandatory. The cost of locating on-site and/or preparing any record is \$30.00/hour and 20 cents/page for photocopying and you will be contacted for approval for fees in excess of \$30.00.

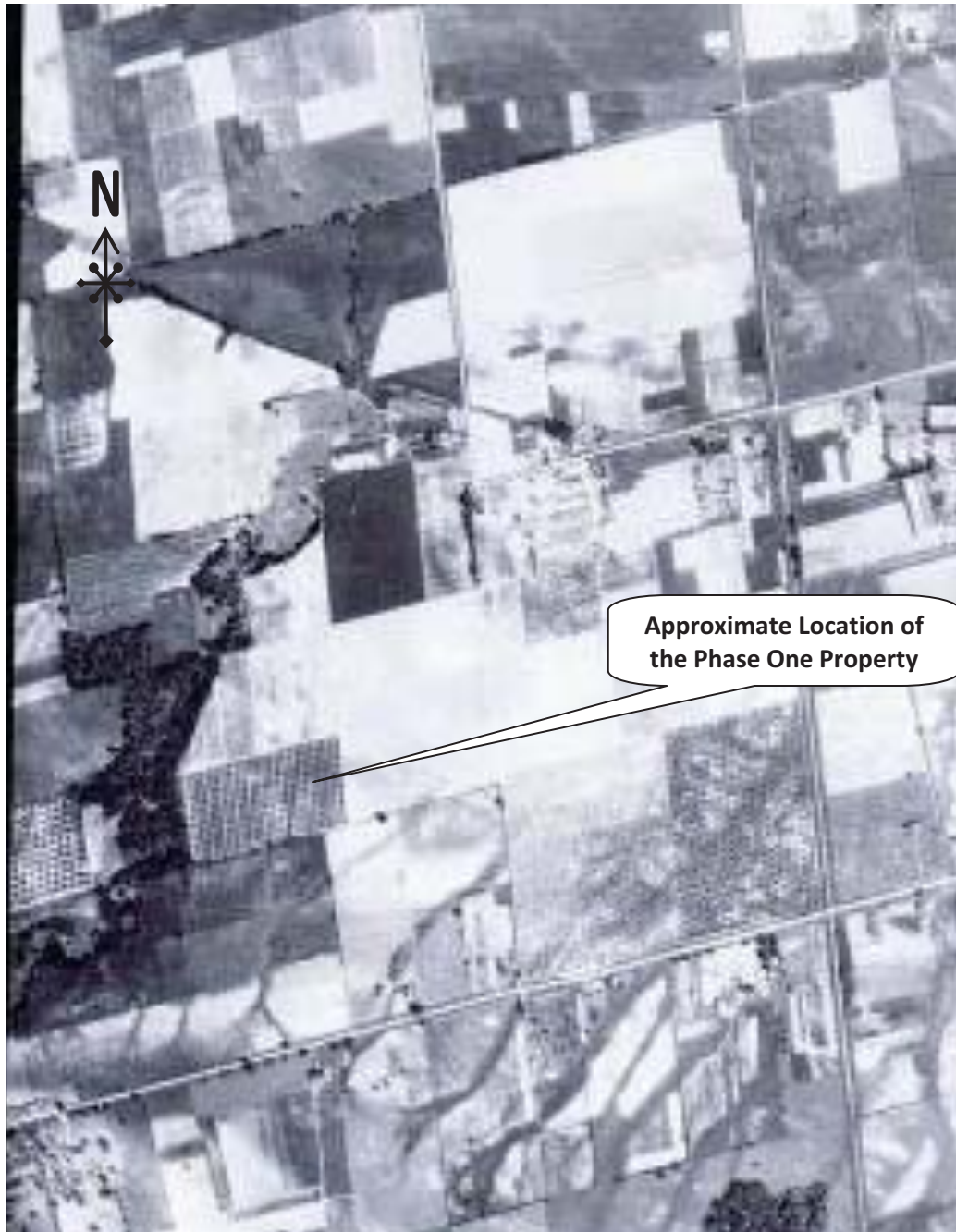
APPENDIX D

Aerial Photographs




© 1881 Simcoe County Atlas

 <p>14 Ronell Crescent, Unit 1 Collingwood, ON L9Y 4J7 T: 705-445-0064 F: 705-445-0067</p>	COUNTY ATLAS: 1881		
	<p>Scale: 1:130 000</p>	<p>PHASE ONE ENVIRONMENTAL SITE ASSESSMENT CHARLESTON HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO</p>	<p>Prepared By: NC</p>
	<p>Date: May 2015</p>		<p>Reviewed By: DL</p>
<p>Project: 10001514-210</p>	<p>Prepared For: Charleston Homes Residential Development</p>	<p>Drawing No. D-1</p>	




© National Archives

 <p>14 Ronell Crescent, Unit 1 Collingwood, ON L9Y 4J7 T: 705-445-0064 F: 705-445-0067</p>	AERIAL PHOTOGRAPH: 1938		
	<p>Scale: 1:10000</p>	<p>PHASE ONE ENVIRONMENTAL SITE ASSESSMENT CHARLESTON HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO</p>	<p>Prepared By: NC</p>
	<p>Date: May 2015</p>		<p>Reviewed By: DL</p>
<p>Project: 10001514-210</p>	<p>Prepared For: Charleston Homes Residential Development</p>	<p>Drawing No. D-2</p>	




© National Archives

 <p>14 Ronell Crescent, Unit 1 Collingwood, ON L9Y 4J7 T: 705-445-0064 F: 705-445-0067</p>	AERIAL PHOTOGRAPH: 1969		
	Scale: 1:25000	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT CHARLESTON HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO	Prepared By: NC
	Date: May 2015		Reviewed By: DL
Project: 10001514-210	Prepared For: Charleston Homes Residential Development	Drawing No. D-3	




© National Archives

 <p>14 Ronell Crescent, Unit 1 Collingwood, ON L9Y 4J7 T: 705-445-0064 F: 705-445-0067</p>	AERIAL PHOTOGRAPH: 1987		
	Scale: 1:30000	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT CHARLESTON HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO	Prepared By: NC
	Date: May 2015		Reviewed By: DL
	Project: 10001514-210	Prepared For: Charleston Homes Residential Development	Drawing No. D-4




Approximate Location
of the Phase One

© County of Simcoe GIS Map

 <p>14 Ronell Crescent, Unit 1 Collingwood, ON L9Y 4J7 T: 705-445-0064 F: 705-445-0067</p>	AERIAL PHOTOGRAPH: 2002		
	Scale: 1:8300	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT CHARLESTON HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO	Prepared By: NC
	Date: May 2015		Reviewed By: DL
	Project: 10001514-210	Prepared For: Charleston Homes Residential Development	Drawing No. D-5




© County of Simcoe GIS Map

 <p>14 Ronell Crescent, Unit 1 Collingwood, ON L9Y 4J7 T: 705-445-0064 F: 705-445-0067</p>	SATELLITE IMAGE: 2008		
	<p>Scale: 1:8300</p>	<p>PHASE ONE ENVIRONMENTAL SITE ASSESSMENT CHARLESTON HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO</p>	<p>Prepared By: NC</p>
	<p>Date: May 2015</p>		<p>Reviewed By: DL</p>
<p>Project: 10001514-210</p>	<p>Prepared For: Charleston Homes Residential Development</p>	<p>Drawing No. D-6</p>	



Approximate Location of
the Phase One Property

© County of Simcoe GIS Map

 <p>14 Ronell Crescent, Unit 1 Collingwood, ON L9Y 4J7 T: 705-445-0064 F: 705-445-0067</p>	SATELLITE IMAGE: 2013		
	Scale: 1:8300	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT CHARLESTON HOMES RESIDENTIAL SUBDIVISION COLLINGWOOD, ONTARIO	Prepared By: NC
	Date: May 2015		Reviewed By: DL
	Project: 10001514-210	Prepared For: Charleston Homes Residential Development	Drawing No. D-7

APPENDIX E

Topographic Map

APPENDIX F

Site Photographs



1. View of Phase One Property facing west from High Street.



2. View of Phase One Property facing north from 7914 Poplar Sideroad.



3. View of Phase One Property facing west from High Street.



4. View of Phase One Property facing north from Poplar Sideroad.



5. View of Phase One Property facing north from Poplar Sideroad.



6. View of Phase One Property facing northwest from Poplar Sideroad.



7. View of north adjoining property.



8. View of 7945 Poplar Sideroad within the Phase One Study Area.



9. View of house and AST located on 7914 Poplar Sideroad (Phase One adjoining property).



10. Barn structure located on 7914 Poplar Sideroad (Phase One adjoining property).



11. View of 7888 Poplar Sideroad within the Phase One Study Area.



12. View of Black Ash Creek that runs along the northwest side of the Phase One Property, facing south.



13. View of 8081 Poplar Sideroad with visible AST within the Phase One Study Area.



14. View of residential development along Clark Street and the empty lot/construction area on the east side of High Street located within the Phase Study Area.



15. View of cemetery located at 7999, 8011, 8029 and 8053 Poplar Sideroad within the Phase One Study Area.



16. View of roundabout located at the intersection of Poplar Sideroad and High Street.