



Geotechnical
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Services

Phase I Environmental Site Assessment

Vacant Land
590 Rideau Street
Ottawa, Ontario

Prepared For

Richcraft Group of Companies

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Report: PE2706-2

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EXECUTIVE SUMMARY

Assessment

Paterson Group was retained by Richcraft Group of Companies to conduct a Phase I Environmental Site Assessment (ESA) of the property located at 590 Rideau Street (formerly 582, 588, 590, 592 and 594 Rideau Street and 165, 167 and 169 Charlotte Street), in the City of Ottawa, Ontario. The purpose of this Phase I ESA was to research the past and current use of the site and study area and to identify any environmental concerns with the potential to have impacted the subject property.

According to the historical research, the subject site was first developed with residential properties circa 1896 and commercial properties circa 1933. Dry cleaners were listed at the subject site from 1933 to 1944 and 1952 to 1956. A building addressed 592 Rideau Street was demolished between 1974 and 1984 while the remaining structures were demolished circa 2013. The subject property has since been vacant and used as a temporary park. The historic dry cleaning operations located on the subject property constitute a Potentially Contaminating Activity (PCA) and it is therefore considered to represent an Area of Potential Environmental Concern (APEC).

Adjacent properties to the east, addressed 598, 600 and 602 Rideau Street, were identified as a former automotive service garage, retail fuel outlet and dry cleaner, respectively. These former activities constitute PCAs with the potential to have impacted the subject site. As such, these PCAs are considered to represent an Area of Potential Environmental Concern on the eastern portion of the subject site.

Following the historical research, a site inspection was conducted of the subject site and Phase I ESA study area. The subject land is currently vacant and covered with grass and gravel. Additional PCAs identified within the Phase I study area are not considered to represent APECs with respect to the subject site.

Recommendations

The results of the historical research, personal interviews, and the site inspection identified areas of potential environmental concern with respect to the subject site. **In our opinion, a Phase II Environmental Site Assessment is required for the property.**

1.0 INTRODUCTION

At the request of Richcraft Group of Companies, Paterson Group (Paterson) conducted a Phase I Environmental Site Assessment (Phase I – ESA) for the vacant property addressed 590 Rideau Street, in the City of Ottawa, Ontario. The purpose of this Phase I – ESA was to research the past and current use of the site and study area and to identify any environmental concerns with the potential to have impacted the subject property.

Paterson was engaged to conduct this Phase I – ESA by Mr. Kevin Yemm of Richcraft. Richcraft offices are located at 2280 St. Laurent Boulevard, Suite 201, Ottawa, Ontario. Mr. Yemm can be reached by telephone at (613) 739-7111.

This report has been prepared specifically and solely for the above noted project which is described herein. It contains all of our findings and results of the environmental conditions at this site.

This Phase I-ESA report has been prepared in general accordance with Ontario Regulation 153/04 as amended by O.Reg. 269/11 (Environmental Protection Act), and also complies with the requirements of CSA Z768-01. The conclusions presented herein are based on information gathered from a limited historical review and field inspection program. The findings of the Phase I - ESA are based on a review of readily available geological, historical and regulatory information and a review made at the time of the field assessment. The historical research relies on information supplied by others, such as, local, provincial and federal agencies and was limited within the scope-of-work, time and budget of the project herein.

2.0 PHASE I PROPERTY INFORMATION

Address: 590 Rideau Street (formerly 582, 588, 590, 592 and 594 Rideau Street and 165, 167 and 169 Charlotte Street), City of Ottawa, Ontario

Legal Description: Lots 49, 50 and the west half of lot 51, Plan 6, City of Ottawa.

Property Identification

Number: 04207-0667

Location: The subject site is located on the southeast corner of the Rideau Street and Charlotte Street intersection, in the City of Ottawa, Ontario. The subject site is shown on Figure 1 - Key Plan following the body of this report.

Latitude and Longitude: 45° 25' 58" N, 75° 40' 57" W.

Site Description:

Configuration: Rectangular.

Zoning: TM – Traditional Mainstreet

Current Use: Park.

Services: The subject site is located in a municipally serviced area.

3.0 SCOPE OF INVESTIGATION

The scope of work for this Phase I – Environmental Site Assessment was as follows:

- Determine the historical activities on the subject site and study area by conducting a review of readily available records, reports, photographs, plans, mapping, databases and regulatory agencies;
- Investigate the existing conditions present at the subject site and study area by conducting site reconnaissance;
- Conduct interviews with persons knowledgeable of current and historic operations on the subject property, and if warranted, neighbouring properties;
- Present the results of our findings in a comprehensive report in general accordance with the requirements of Ontario Regulation 269/11 amending O.Reg. 153/04 made under the Environmental Protection Act and in compliance with the requirements of CSA Z768-01;
- Provide a preliminary environmental site evaluation based on our findings;
- Provide preliminary remediation recommendations and further investigative work if contamination is suspected or encountered.

4.0 RECORDS REVIEW

4.1 General

Phase I-ESA Study Area Determination

A radius of approximately 250 m was determined to be appropriate as a Phase I ESA study area for this assignment. Properties outside the 250 m radius are not considered to have impacted the subject land, based on their significant distance from the site.

First Developed Use Determination

According to the aerial photographs and documents reviewed, the subject site was first developed in 1896 with residential buildings along Rideau Street and commercial buildings along Charlotte Street circa 1933.

Fire Insurance Plans

Fire Insurance Plans (FIPs) from 1956 were reviewed for the area of the subject property. The FIPs show four (4) buildings and five (5) detached private garages. The buildings addressed 590, 592 and 594 are shown to be used for commercial purposes. The fourth building (165, 167 and 169 Charlotte Street and 582, 584 and 588 Rideau Street) is shown to be occupied by residential and commercial units.

A bus waiting room (598 Rideau Street) and a retail fuel outlet with two (2) underground storage tanks (600 Rideau Street) were located 10 and 30 m east of the subject site, respectively. An automotive service garage with two (2) underground storage tanks (560 Rideau Street) is located 40 m to the west. A bus garage with an underground storage tank (110 Cobourg Street) is located 230 m to the west. A used car dealer with repair shop (565 Rideau Street) is located 40 m to the west.

No significant environmental concerns were identified on the remaining neighbouring properties in the 1956 FIPs.

City of Ottawa Street Directories

City directories at the National Archives were reviewed in approximate 10 year intervals from 1890 to 2001 as part of the Phase I ESA. According to the directories, the subject site was first listed with residential addresses along Rideau Street in 1896/1897. Residential and commercial addresses along Charlotte Street were first listed for the subject site in 1933. The commercial properties originally listed were Joe's Beauty Parlour and Central Cleaner & Tailors. The cleaner was listed at 169 Charlotte Street until circa 1944.

Dry cleaners were later listed on the subject site at 594 Rideau Street between 1953 and 1956 (Peter Pan dry cleaner) and 167 Charlotte Street between 1952 and 1954 (Superior Cleaner).

Neighbouring properties within the Phase I-ESA study area were used for residential, commercial and institutional purposes. The Ottawa Transportation Company Terminal, addressed 598 Rideau Street, was located 10 m east of the subject site between 1954 and 1958. The site was subsequently occupied by a used car dealership and garage in the 1960s and 1970s and then by a photo finishing business in the 1980s and 1990s. A retail fuel outlet, addressed 600 Rideau Street, was located 30 m east of the subject site between the 1930s and 1960s. Car dealerships, addressed 554 and 560 Rideau Street, were located more than 40 m to the west of the subject site in the 1970s and 1980s.

Chain of Title

Paterson requested a title search for the subject property from Read Abstracts Limited for the PIN constituting the subject property. At the time of issuance of this report, the chain of title had not been received. A copy will be forwarded to the client, should it contain any pertinent information.

Previous Engineering Reports

The following reports were reviewed as part of this assessment:

- "Phase I - Environmental Site Assessment, Vacant Residential and Commercial Buildings, 582, 588, 590 and 594 Rideau Street and 165, 167, 169 Charlotte Street, Ottawa, Ontario", prepared by Paterson, dated July 18, 2012.

The Phase I ESA recommended the completion of a Phase II ESA to assess any potential soil and groundwater impacts from the former on-site use of heating oil, potential historic dry cleaning operations, and fill material from the former structure addressed 592 Rideau Street. The adjacent properties to the east were also considered to pose an environmental concern to the property due to the historic presence of an automotive service garage and dry cleaning establishment (598 and 602 Rideau Street) and retail fuel outlet (600 Rideau Street). No concerns were identified with the use of the subject site or neighbouring properties at the time of the Phase I ESA.

- “Geotechnical Investigation, Proposed Multi-Storey Development, 590 to 594 Rideau Street, Ottawa, Ontario”, prepared by Paterson, dated September 2012.

A geotechnical investigation, which included drilling four (4) boreholes and installing one (1) groundwater monitoring well, was conducted in July, 2012. Generally, the soil profile encountered at the borehole locations consisted of an asphalt surface followed by fill (silty sand matrix with gravel, cobbles, boulders and construction debris in former building footprint) overlying a native silty sand and silty clay layer. Practical refusal to DCPT was encountered at 21 and 22 meters below ground surface in BH1 and BH3, respectively.

Paterson has conducted a number of environmental site assessments and geotechnical investigations in the vicinity of the subject site. These reports were also reviewed as part of this assessment.

Current Plan of Survey

A plan of survey, prepared by Annis O’Sullivan Vollebakk Limited (2004), was reviewed as part of this assessment. The plan shows the subject site with three (3) buildings that have since been demolished.

4.2 Environmental Source Information

Environment Canada

A search of the National Pollutant Release Inventory (NPRI) was conducted electronically on February 24, 2016. The subject site and adjacent properties were not listed in the NPRI database. No records of pollutant release were listed in the database for properties located within the Phase I Study Area.

PCB Inventory

A search of national PCB waste storage sites was conducted. No PCB waste storage sites are located within the Phase I study area.

Ontario Ministry of Environment (MOECC) Instruments

A request was submitted to the MOECC Freedom of Information office for information with respect to certificates of approval, permits to take water, certificates of property use or any other similar MOECC issued instruments for the site. At the time of issuance of this report, a response had not been received. A copy of the response will be forwarded to the client, should it contain any pertinent information.

MOECC Coal Gasification Plant Inventory

The Ontario Ministry of Environment document titled "Municipal Coal Gasification Plant Site Inventory, 1991" was reviewed to reference the locations of former plants with respect to the site. No coal gasification plants were identified within the Phase I study area.

MOECC Incident Reports

A request was submitted to the MOECC Freedom of Information office for information with respect to records concerning environmental incidents, orders, offences, spills, discharges of contaminants or inspections maintained by the MOE for the site or adjacent properties. At the time of issuance of this report, a response had not been received. A copy of the response will be forwarded to the client, should it contain any pertinent information.

MOECC Waste Management Records

A request was submitted to the MOECC Freedom of Information office for information with respect to waste management records. At the time of issuance of this report, a response had not been received. A copy of the response will be forwarded to the client, should it contain any pertinent information.

MOECC Submissions

A request was submitted to the MOECC Freedom of Information office for information with respect to reports related to environmental conditions that have been submitted to the MOECC. At the time of issuance of this report, a response had not been received. A copy of the response will be forwarded to the client, should it contain any pertinent information.

MOECC Brownfields Environmental Site Registry

A search of the MOECC Brownfields Environmental Site Registry was conducted as part of this assessment for the site, neighbouring properties and the general area of the site. There were no records for the subject site or neighbouring properties within the Phase I study area.

MOECC Waste Disposal Site Inventory

The Ontario Ministry of Environment document titled "Waste Disposal Site Inventory in Ontario, 1991" was reviewed as part of the historical research. This document includes all recorded active and closed waste disposal sites, industrial manufactured gas plants and coal tar distillation plants in the Province of Ontario. No records of closed or active waste disposal sites were identified within the Phase I ESA study area.

Areas of Natural Significance

A search for areas of natural significance and features within the Phase I study area was conducted on the web site of the Ontario Ministry of Natural Resources (MNR) on February 24, 2016. No natural features or areas of natural significance were identified within the Phase I study area.

Technical Standards and Safety Authority (TSSA)

The TSSA, Fuels Safety Branch in Toronto was contacted electronically on February 24, 2016 to inquire about current and former underground storage tanks, spills and incidents for the site and neighbouring properties. The response from the TSSA indicated that there are no records for the subject site. The property adjacent to the east, addressed 596 Rideau Street, has a record of an active cylinder exchange. This activity is not considered to pose a concern to the subject site. A copy of the TSSA correspondence is included in Appendix 2.

City of Ottawa Landfill Document

The document entitled “Old Landfill Management Strategy, Phase I – Identification of Sites, City of Ottawa”, was reviewed. No landfill sites were identified within the Phase I study area.

City of Ottawa Historical Land Use Inventory (HLUI)

A requisition form was sent to the City of Ottawa on March 4, 2016 to request information from the City’s Historical Land Use Inventory (HLUI) database for the subject property. At the time of issuance of this report, a response had not been received. A copy of the response will be forwarded to the client, should it contain any pertinent information.

4.3 Physical Setting Sources

Aerial Photographs

Historical air photos from the National Air Photo Library were reviewed in approximate ten (10) year intervals. The review period dates back to the first available air photos for the site. Based on the review, the following observations have been made:

- | | |
|------|--|
| 1928 | The subject property is occupied by four (4) structures. Adjacent buildings to the south are occupied by residential buildings. The property to the north, across Rideau Street, is occupied by a residential or possibly institutional building. The adjacent property to the east is occupied by a residential dwelling. The property to the west, across Charlotte Street, is occupied by a residential or commercial building. |
| 1938 | No significant changes have been made to the subject site or neighbouring properties. |
| 1950 | No significant changes have been made to the subject site or neighbouring properties. Charlotte Street, north of Rideau Street, has been realigned. |
| 1956 | No significant changes have been made to the subject site or neighbouring properties. |

- 1968 No significant changes have been made to the subject site. Structures on a neighbouring property to the northwest, across the Rideau Street and Charlotte Street intersection, have been demolished and the land is vacant.
- 1993 A structure on the subject site (592 Rideau Street) has been demolished. The adjacent property to the east has been redeveloped with a commercial plaza. The vacant property to the northwest, across the intersection, has been redeveloped with a multi-storey residential building. No other significant changes have been made to the subject site or neighbouring properties.
- 2001 No significant change has been made to the subject property. A property northeast of the subject site has been developed with a multi-storey residential building. A building further to the west, along Rideau Street, has been demolished. No other apparent changes have been made to the neighbouring properties.
- 2014 (City of Ottawa website) The three (3) remaining buildings have been demolished. The subject site appears to be used as a park. The subject site is depicted as it appears today.

Laser copies of selected aerial photographs reviewed are included in Appendix 1.

Topographic Maps

Topographic maps were obtained from Natural Resources Canada – The Atlas of Canada website and from the City of Ottawa website. The topographic maps indicate that the regional topography in the general area of the site slopes downward towards the Rideau River to the east. According to the map, the nearest water body is the Rideau River located 250 m to the east. An illustration of the referenced topographic map is presented on Figure 2 – Topographic Map, appended to this report.

Physiographic Maps

A Physiographic Map was reviewed from the Natural Resources Canada – The Atlas of Canada website. According to this physiographic map, the site is located in the St. Lawrence Lowlands. According to the mapping description provided: “The lowlands are plain-like areas that were all affected by the Pleistocene glaciations and are therefore covered by surficial deposits and other features associated with the ice sheets.” The subject site is located in the Central St. Lawrence Lowland, which is generally less than 150 m above sea level.

Geological Maps

The Geological Survey of Canada website on the Urban Geology of the National Capital Area was consulted as part of this assessment. Based on this information, bedrock in the area of the site consists of interbedded limestone and shale of the Verulam formation. Overburden soils are shown as erosional terraces with a drift thickness of 15 to 25 meters.

Water Well Records

A search of the MOECC online water well records database was completed on February 24, 2016, for all drilled wells within 250 m of the subject site. There was one (1) record in 2013 located near the intersection of Besserer and Charlotte Street, 35 m south of the subject site. No other information regarding this well was available.

Water Bodies and Areas of Natural Significance

The Rideau River, located 250 m to the east, is the closest water body. No other areas of natural significance are known to exist within the Phase I study area.

5.0 INTERVIEWS

Property Owner Representative

Mr. Kevin Yemm of Richcraft was interviewed by telephone and email as a part of this assessment. Mr. Yemm was selected for interview based on his knowledge of the site in his capacity as property owner representative. Mr. Yemm was aware of Paterson’s previous work at the subject site and did not identify any additional Potentially Contaminating Activities or Areas of Potential Environmental Concern at the subject site.

The information obtained in this interview is consistent with site information obtained from other sources and is considered to be valid.

6.0 SITE RECONNAISSANCE

6.1 General Requirements

The site assessment was conducted by Paterson personnel on March 3, 2016. Access was provided to the entire subject site. In addition to the site, the uses of neighbouring properties within the Phase I study area were also assessed at the time of the site assessment.

6.2 Specific Observations at Phase I Property

Buildings and Structures

There are currently no buildings on the subject property.

Underground Utilities

Underground service locates were completed for the subject site in February 2016. A bell conduit was noted to be present along the southern property line.

Storage Tanks

No aboveground storage tanks (ASTs) or evidence of underground storage tanks (USTs), or evidence of other fuel or chemical storage was observed on the subject site.

Water Source

Surrounding properties are serviced by the City of Ottawa water system. The proposed development will be serviced by the municipal water system.

Unidentified Substances

There were no unidentified substances on the exterior of the subject property at the time of this assessment.

Groundwater Monitoring Wells

No groundwater monitoring wells were observed at the time of the assessment. The groundwater monitoring well installed as part of the geotechnical investigation is suspected to have been destroyed circa 2013 when the former buildings were demolished.

Sewage Works

Surrounding properties are serviced by the City of Ottawa sewer system.

Waste Storage and Disposal

The subject site is vacant and does not currently generate any waste. The waste management practices of the neighbouring properties are not considered to pose a risk to the subject land.

Railway Lines

There are no existing railway lines within the Phase I study area.

Ozone Depleting Substances (ODSs)

No potential sources of ODSs were observed on site during the assessment.

Site Features

The subject land is vacant and occupied by a temporary park. Drainage consists of infiltration.

Potentially Contaminating Activities (PCA)

The site visit did not identify any Potentially Contaminating Activities at the subject site.

Neighbouring Properties

An inspection of the neighbouring properties was conducted from publicly accessible roadways at the time of the site inspection. Land use adjacent to the subject site was as follows:

- North - Rideau Street, followed by residential;
- South - Residential, followed by Besserer Street;
- East - Commercial plaza, followed by Wurtemberg Street;

- West - Charlotte Street, followed by commercial/residential;

The current use of the neighbouring properties is not considered to pose an environmental concern to the subject site. Current land use in the Phase I study area is illustrated on Drawing: PE2706-3 – Surrounding Land Use Plan in the Figures section of this report, following the text.

7.0 REVIEW AND EVALUATION OF INFORMATION

7.1 Land Use History

The following table indicates the current and past uses of the site as well as any associated potentially contaminating activities dating back to the first developed use of the site (if present).

Table 1 - Land Use History			
Time Period	Land Use	Potentially Contaminating Activities	Potential Environmental Concerns
Prior to 1896	Vacant	None	No
1896 to 1933	Residential	None	No
1933 to 1954	Residential/Commercial (potential dry cleaning establishments)	Potential use of dry cleaning chemicals	Yes
1955 to 2013	Residential/Commercial	None	No
2013 to Present	Vacant (temporary park)	None	No

Potentially Contaminating Activities (PCAs)

The former presence of dry cleaning establishments (that may have used chemicals) on the subject site represents historical Potentially Contaminating Activities. The historical presence of the dry cleaning establishments on the subject site is considered to represent Areas of Potential Environmental Concern (APECs) for the subject site.

The building formerly located at 592 Rideau Street was demolished between 1974 and 1984. It was considered possible that fill of questionable quality was used to backfill this building foundation. As a result, this former building foundation was also considered to represent an APEC on the subject site.

Vent and fill pipes were identified in a previous assessment prior to the demolition of the remaining structures circa 2013. The former on-site use of furnace oil represents an APEC on the subject site.

Off-site PCAs were identified in the Phase I study area, however, only one (1) of these PCAs were considered to represent an APEC on the eastern portion of the subject site. Land use within the Phase I study area is shown on Drawing PE2706-3 - Surrounding Land Use Plan.

Areas of Potential Environmental Concern (APECs)

The Areas of Potential Environmental Concern identified in this Phase I ESA are described in Table 2.

Table 2 Area of Potential Environmental Concern					
Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern with respect to Phase I Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil, and/or Sediment)
590 Rideau Street (167 and 169 Charlotte Street and 594 Rideau Street)	Subject Property	Former dry cleaners (1933 to 1954); Item 37, Table 2, O.Reg. 153/04 (Operation of Dry Cleaning Equipment where chemicals are used)	On-site	VOCs	Soil, Groundwater
590 Rideau Street	Subject Property	Former on-site use of furnace oil; Item 28, Table 2, O.Reg. 153/04 (Gasoline and Associated Products Storage in Fixed Tanks)	On-Site	PHCs (F1-F4) and BTEX	Soil, Groundwater
592 Rideau Street	Subject Property	Backfilled building foundation (1974 and 1984); Item 30, Table 2, O.Reg. 153/04 (Importation of Fill Material of Unknown Quality)	On-Site	Metals	Soil
598 Rideau Street	Eastern Portion of Phase I Property	Former Automobile Garage (1960s-1970s); Item 52, Table 2, O.Reg. 153/04 (Storage, maintenance, fuelling and repair of vehicles)	Off-site	PHCs (F1-F4) and VOCs	Soil, Groundwater
600 Rideau Street	Eastern Portion of Phase I Property	Former Retail Fuel Outlet (1930s-1960s); Item 28, Table 2, O.Reg. 153/04 (Gasoline and Associated Products Storage in Fixed Tanks)	Off-site	PHCs (F1-F4) and BTEX	Soil, Groundwater
602 Rideau Street	Eastern Portion of Phase I Property	Former dry cleaners (1960 to 1980); Item 37, Table 2, O.Reg. 153/04 (Operation of Dry Cleaning Equipment where chemicals are used)	Off-Site	VOCs	Groundwater

Contaminants of Potential Concern

Based on the uses of the subject site, the following Contaminants of Potential Concern (CPCs) have been identified:

- Volatile Organic Compounds (VOCs) – this suite of parameters includes chlorinated solvents and gasoline related BTEX parameters. These parameters were selected as CPCs for the Phase I study area due to the potential former use of chemicals for dry cleaning and solvents at an automotive service garage. VOCs may be present in the soil matrix as well as in the dissolved phase in the groundwater system.
- Petroleum Hydrocarbons Fractions 1 through 4 (PHCs F1-F4) – this suite of parameters encompasses gasoline (Fraction 1), diesel and fuel oil (Fraction 2), and heavy oils (Fractions 3 and 4). PHCs F1-F4 was selected as a CPC for the Phase I property based on the presence of the former automotive service garage and former retail fuel outlet located adjacent to the east. The former site buildings were also historically heated with furnace oil. PHCs may be present in the soil matrix, sorbed to soil particles, as well as in free or dissolved phase in the groundwater system. PHCs are generally considered to be LNAPLs – light non-aqueous phase liquids, indicating that when present in sufficient concentrations above the solubility limit, they will partition into a separate phase above the water table, due to their lower density.
- Metals – this suite of parameters encompasses various metals for which MOECC standards exist. Metals may be present in the soil matrix or dissolved in site groundwater. Metals were selected as CPCs for the Phase II property based on the potential placement of fill of questionable quality to backfill the foundation of a former building (592 Rideau Street).

7.2 Conceptual Site Model

Geological and Hydrogeological Setting

Based on information from the Geological Survey of Canada, drift thickness in the area of the subject site is estimated to be on the order of 15 to 25 m. Overburden soils are shown as erosional terraces overlying bedrock consisting of interbedded limestone and shale of the Verulam formation.

Contaminants of Potential Concern

The CPCs identified in this Phase I ESA are listed in Section 7.1 of this report.

The mechanisms of contaminant transport within the site soils include physical transportation and leaching. Physical transport is anticipated to be a minor issue at the subject site. Leaching is anticipated to have been limited by the low permeability of the asphalt pavement and roofs which covered the majority of the site until 2013. As such, any contaminants identified in shallow soils are considered to have a low potential to have migrated to the groundwater below the site.

The mechanisms of contaminant transport within the groundwater system include advection, dispersion, and diffusion. Advection and dispersion will be the dominant mechanisms of contaminant transport in soils with higher hydraulic conductivities, such as sands, gravels, silts, and some glacial till soils, whereas diffusion will dominate in soils with lower hydraulic conductivity, such as clays.

Existing Buildings and Structures

There are no buildings currently located on the subject site.

Water Bodies

There are no water bodies on the subject site or within the Phase I study area. The closest water body is the Rideau River, located approximately 250 m to the east of the site

Areas of Natural Significance

No areas of natural significance were identified on the subject site or in the Phase I study area.

Drinking Water Wells

No drinking water wells are currently located at the subject site. The water well records within the Phase I study area are for monitoring wells.

Neighbouring Land Use

Neighbouring land use in the Phase I study area is currently residential and commercial

Potentially Contaminating Activities and Areas of Potential Environmental Concern

As per Section 7.1 of this report, the historical presence of dry cleaners that may have used chemicals, the former on-site use of furnace oil and potential fill of questionable quality used to backfill a building foundation represent Areas of Potential Environmental Concern (APECs) on the subject site. Additionally, the former retail fuel outlet, automotive service garage and dry cleaner adjacent to the east also represent Areas of Potential Environmental Concern (APECs). Other off-site Potentially Contaminating Activities (PCAs) identified within the Phase I study area are not considered to represent APECs with respect to the subject site.

Assessment of Uncertainty and/or Absence of Information

The information available for review as part of the preparation of this Phase I ESA is considered to be sufficient to conclude that there are APECs on the subject site. This was confirmed by a variety of independent sources, and as such, the conclusions of this report are not affected by uncertainty which may be present with respect to the individual sources.

8.0 CONCLUSIONS

The results of the historical research, personal interviews, and the site inspection did identify areas of potential environmental concerns with respect to the subject site. **In our opinion, a Phase II Environmental Site Assessment is required for the property.**

9.0 STATEMENT OF LIMITATIONS

This Phase I - Environmental Site Assessment report has been prepared in general accordance with O.Reg. 153/04 as amended by O.Reg. 269/11, and meets the requirements of CSA Z768-01. The conclusions presented herein are based on information gathered from a limited historical review and field inspection program. The findings of the Phase I - ESA are based on a review of readily available geological, historical and regulatory information and a cursory review made at the time of the field assessment. The historical research relies on information supplied by others, such as, local, provincial and federal agencies and was limited within the scope-of-work, time and budget of the project herein.

Should any conditions be encountered at the subject site and/or historical information that differ from our findings, we request that we be notified immediately in order to allow for a reassessment.

This report was prepared for the sole use of Richcraft Group of Companies. Permission and notification from Richcraft and Paterson will be required to release this report to any other party.

Paterson Group Inc.



Xavier Redhead, B.Eng.



Mark S. D'Arcy, P.Eng.



Report Distribution:

- Richcraft Group of Companies (5 copies)
- Paterson Group (1 copy)

10.0 REFERENCES

Federal Records

Air photos at the Energy Mines and Resources Air Photo Library.
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Provincial Records

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Local Information Sources

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Public Information Sources

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Google Maps/Street View.

FIGURES

FIGURE 1 – KEY PLAN

FIGURE 2 – TOPOGRAPHIC MAP

DRAWING PE2706-2 – SITE PLAN

DRAWING PE2706-3 – SURROUNDING LAND USE PLAN

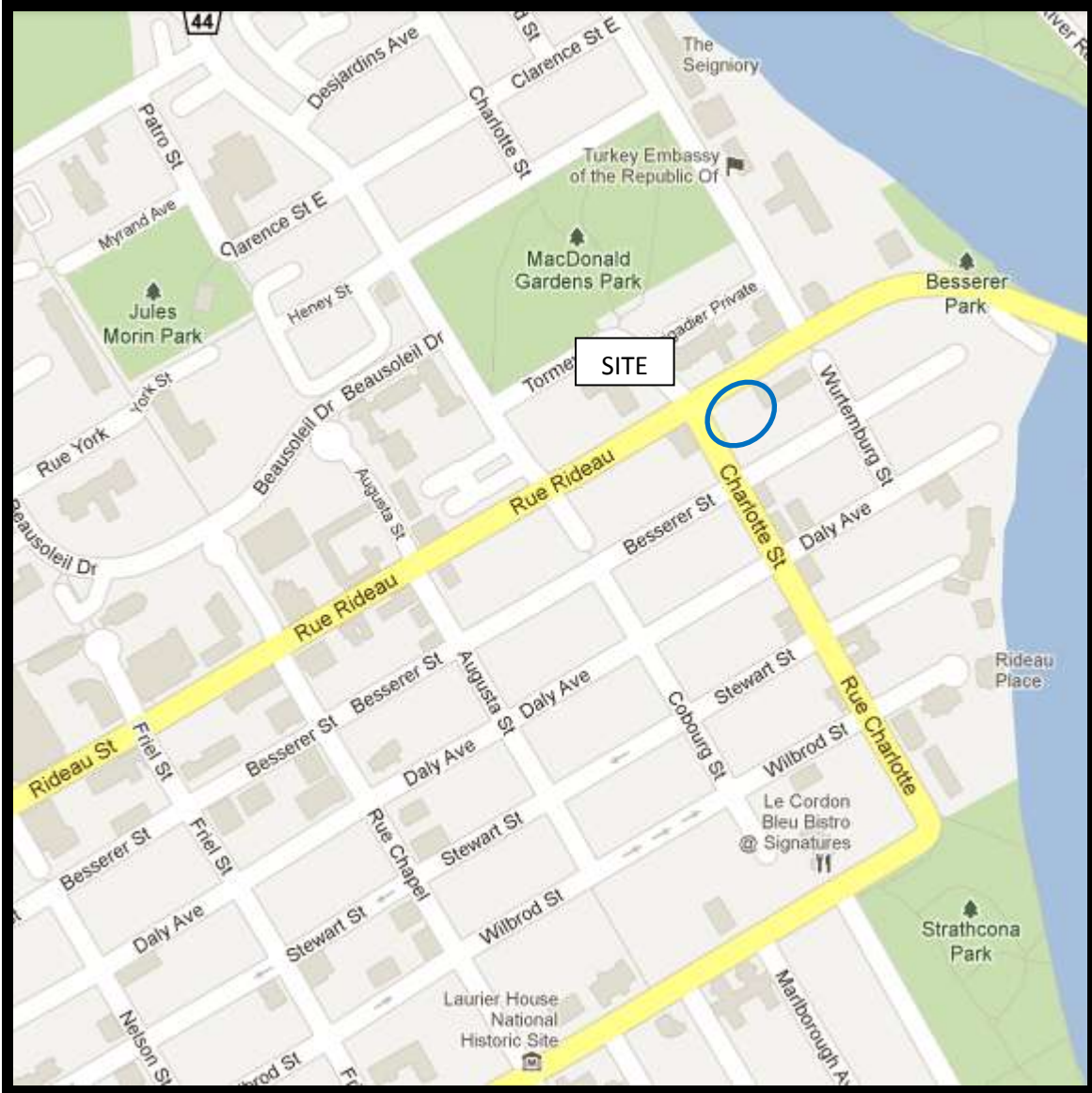


FIGURE 1
KEY PLAN

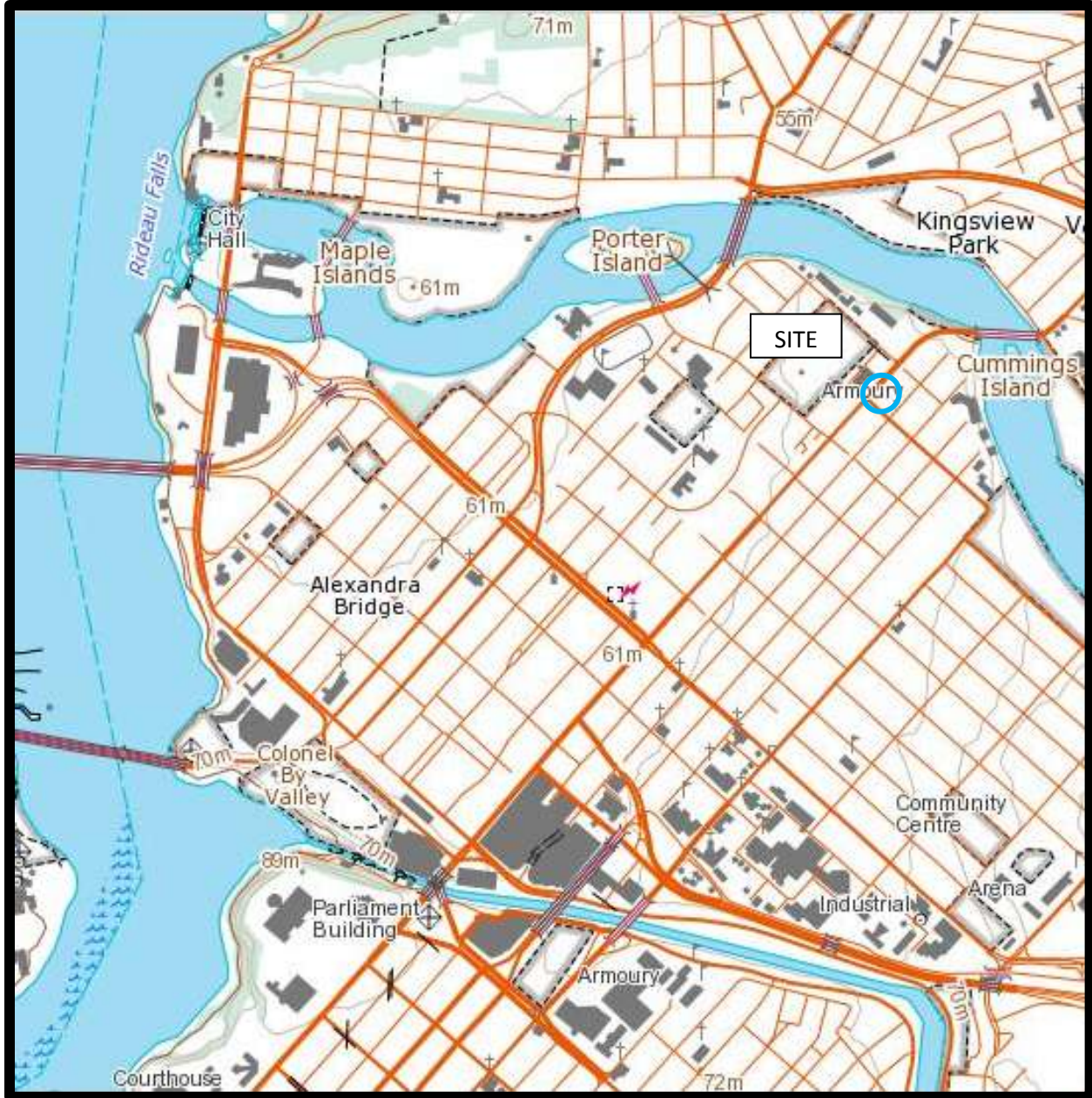


FIGURE 2
TOPOGRAPHIC MAP

#160 CHARLOTTE STREET
HIGH-RISE RESIDENTIAL
APARTMENT BUILDING

LEGEND:



BOREHOLE LOCATION
(PATERSON, 2012)



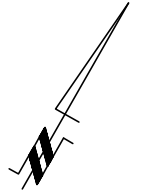
BOREHOLE WITH MONITORING
WELL LOCATION
(PATERSON, 2012)

#589 RIDEAU STREET
RESIDENTIAL
CONDOMINIUMS



FH-TBM

#595 RIDEAU STREET
RESIDENTIAL
APARTMENT BUILDING

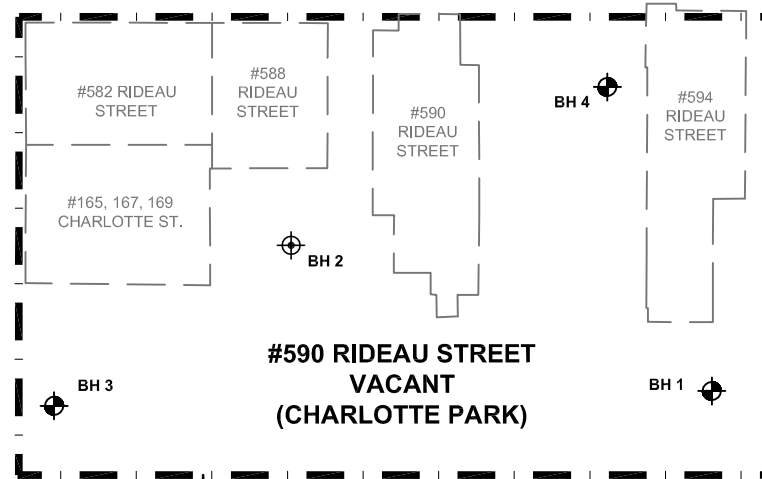


R I D E A U S T R E E T

**C H A R L O T T E
S T R E E T**

#560 RIDEAU STREET
VACANT LAND

#574 RIDEAU STREET
COMMERCIAL AND
RESIDENTIAL BUILDING



#596 RIDEAU STREET
COMMERCIAL PLAZA
FORMERLY #600/602 RIDEAU STREET

PARKLAND

**W U R T E M B U R G
S T R E E T**

P R I V A T E L A N E W A Y

#507 BESSERER STREET
VACANT

#517 BESSERER STREET
RESIDENTIAL

PARKING LOT

#205
CHARLOTTE STREET
RESIDENTIAL

#525
BESSERER STREET
RESIDENTIAL

#527
BESSERER STREET
RESIDENTIAL

#529
BESSERER STREET
RESIDENTIAL

#531
BESSERER STREET
RESIDENTIAL

#533
BESSERER STREET
RESIDENTIAL

#535
BESSERER STREET
RESIDENTIAL

#537
BESSERER STREET
RESIDENTIAL

#539
BESSERER STREET
RESIDENTIAL

#541
BESSERER STREET
RESIDENTIAL

#549
BESSERER STREET
RESIDENTIAL

#551
CHARLOTTE STREET
RESIDENTIAL

patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario, K2E 7J5
Tel: (613)226-7381 Fax: (613) 226-6344

NO.	REVISIONS	DATE	INITIAL

RICHCRAFT GROUP OF COMPANIES
PHASE I - ENVIRONMENTAL SITE ASSESSMENT
590 RIDEAU STREET

OTTAWA, ONTARIO

Drawing Title: **SITE PLAN**

Drawn by: XR	Checked by: MSD	Date: 03/2016
Scale: 1:500		Drawing No.:
Report No.:		PE2706-2
PE2706-2		



AREAS OF POTENTIAL ENVIRONMENTAL CONCERN:

- 1. FORMER ON-SITE USE OF FURNACE OIL
- 2. 592 RIDEAU STREET - FILL OF UNKNOWN QUALITY
- 3. 167, 169 CHARLOTTE STREET AND 594 RIDEAU STREET - POTENTIAL HISTORIC DRY CLEANING OPERATIONS

POTENTIALLY CONTAMINATING ACTIVITIES:

- 1. 602 RIDEAU STREET - POTENTIAL HISTORIC DRY CLEANING OPERATION
- 2. 598 RIDEAU STREET - FORMER AUTOMOTIVE SERVICE GARAGE AND FORMER TRANSPORTATION COMPANY TERMINAL
- 3. 600 RIDEAU STREET - FORMER RETAIL FUEL OUTLET
- 4. 554 AND 560 RIDEAU STREET - FORMER AUTOMOTIVE SERVICE GARAGES WITH TWO UNDERGROUND STORAGE TANKS
- 5. 110 COBOURG STREET - FORMER BUS GARAGE WITH ONE UNDERGROUND STORAGE TANK

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consulting engineers

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Ottawa, Ontario, K2E 7J5
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NO.	REVISIONS	DATE	INITIAL

RICHCRAFT GROUP OF COMPANIES

**PHASE I - ENVIRONMENTAL SITE ASSESSMENT
590 RIDEAU STREET**

OTTAWA, ONTARIO

Drawing Title:
SURROUNDING LAND USE PLAN

Drawn by: XR	Checked by: MSD	Date: 03/2016
Scale: 1:3000	Drawing No.: PE2706-3	
Report No.: PE2706-2		

APPENDIX 1

CHAIN OF TITLE

PLAN OF SURVEY

AERIAL PHOTOGRAPHS

SITE PHOTOGRAPHS

LOTS 49, 50 AND THE WEST HALF OF LOT 51 REGISTERED PLAN 6 CITY OF OTTAWA

Prepared by ANNIS, O'SULLIVAN, VOLLEBEKK LTD. MARCH 10, 2004

Scale 1 : 100



Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Notes & Legend

- UTILITY POLE
- GUY WIRE
- BOLLARD
- DECIDUOUS TREE
- MAINTENANCE HOLE (SANITARY)
- MAINTENANCE HOLE (HYDRO)
- MAINTENANCE HOLE (BELL TELEPHONE)
- MAINTENANCE HOLE (TRAFFIC)
- WATER VALVE
- CATCH BASIN
- FIRE HYDRANT
- PARKING METER
- TRAFFIC SIGN
- TRAFFIC LIGHT
- LOCATION OF ELEVATIONS
- PROPERTY LINE
- TOP OF LID/GRATE
- CENTRE LINE
- BELL PEDESTAL
- OVERHEAD WIRES
- BOARD FENCE
- CONCRETE RETAINING WALL
- AIR CONDITIONER

SITE AREA = 1524 Square Metres

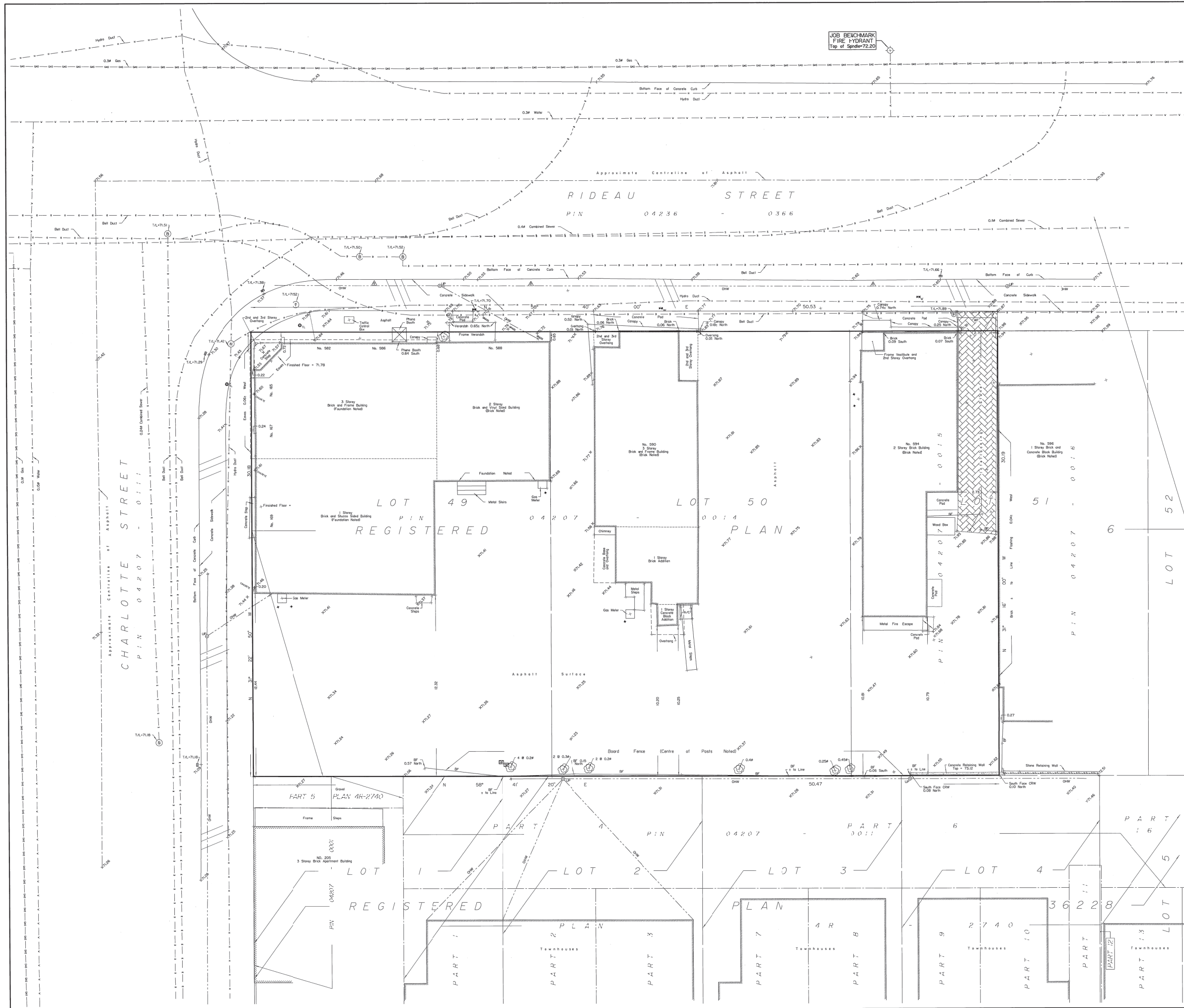
BOUNDARY INFORMATION COMPILED FROM EXISTING SURVEY RECORDS.

ELEVATIONS NOTES

1. ELEVATIONS SHOWN HEREON ARE REFERRED TO GEOODETIC DATUM
2. IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION SHOWN ON THIS DRAWING.

UTILITY NOTES

1. THIS DRAWING CANNOT BE ACCEPTED AS ACKNOWLEDGING ALL OF THE UTILITIES AND IT WILL BE THE RESPONSIBILITY OF THE USER TO CONTACT THE RESPECTIVE UTILITY AUTHORITIES FOR CONFIRMATION.
2. UNDERGROUND UTILITIES AND INVERTS ARE DERIVED FROM INFORMATION PROVIDED BY THE CITY OF OTTAWA PUBLIC UTILITY SHEETS.
3. A FIELD LOCATION OF UNDERGROUND PLANT BY THE PERTINENT UTILITY AUTHORITY IS MANDATORY BEFORE ANY WORK INVOLVING PRODIGING, EXCAVATING ETC.

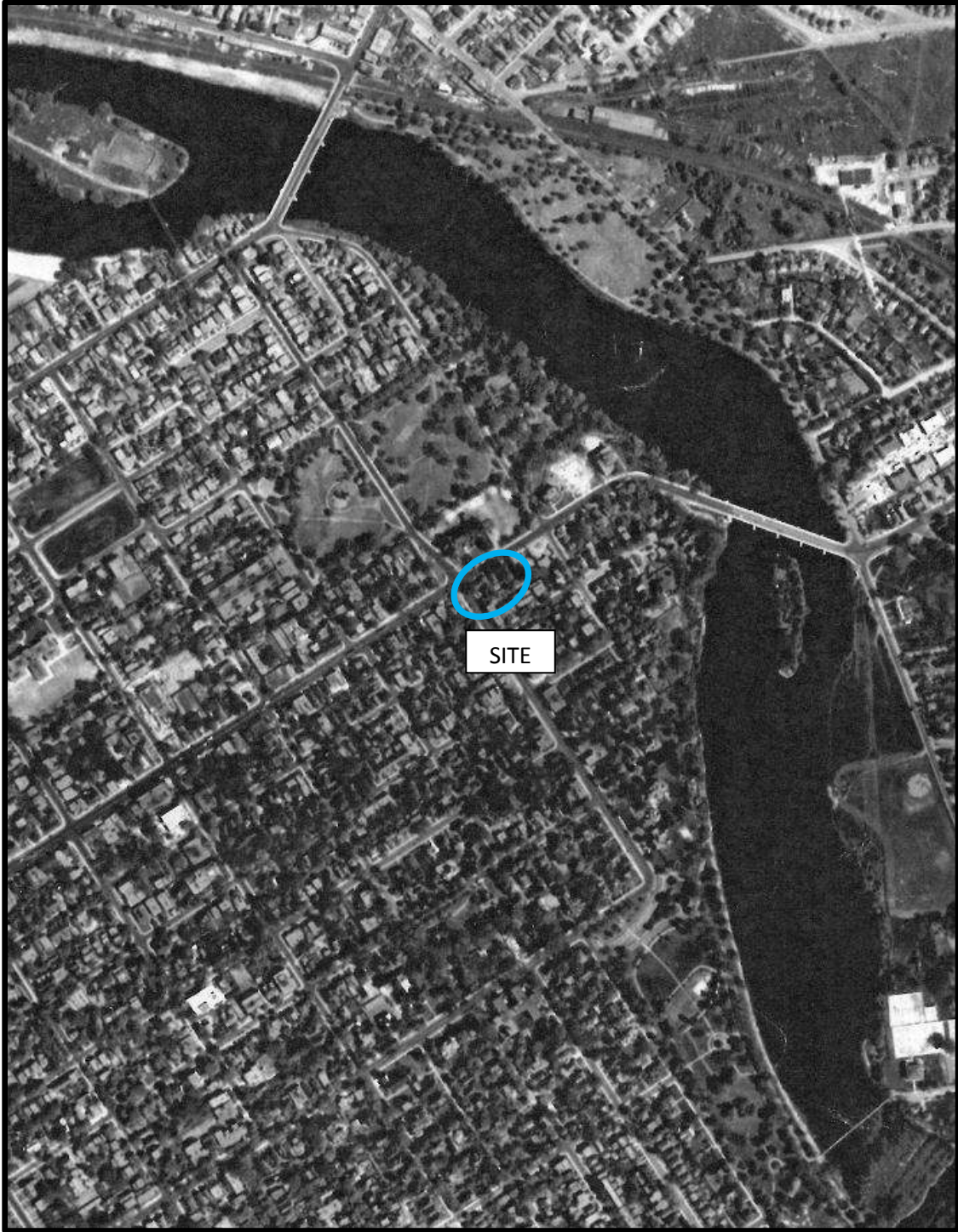




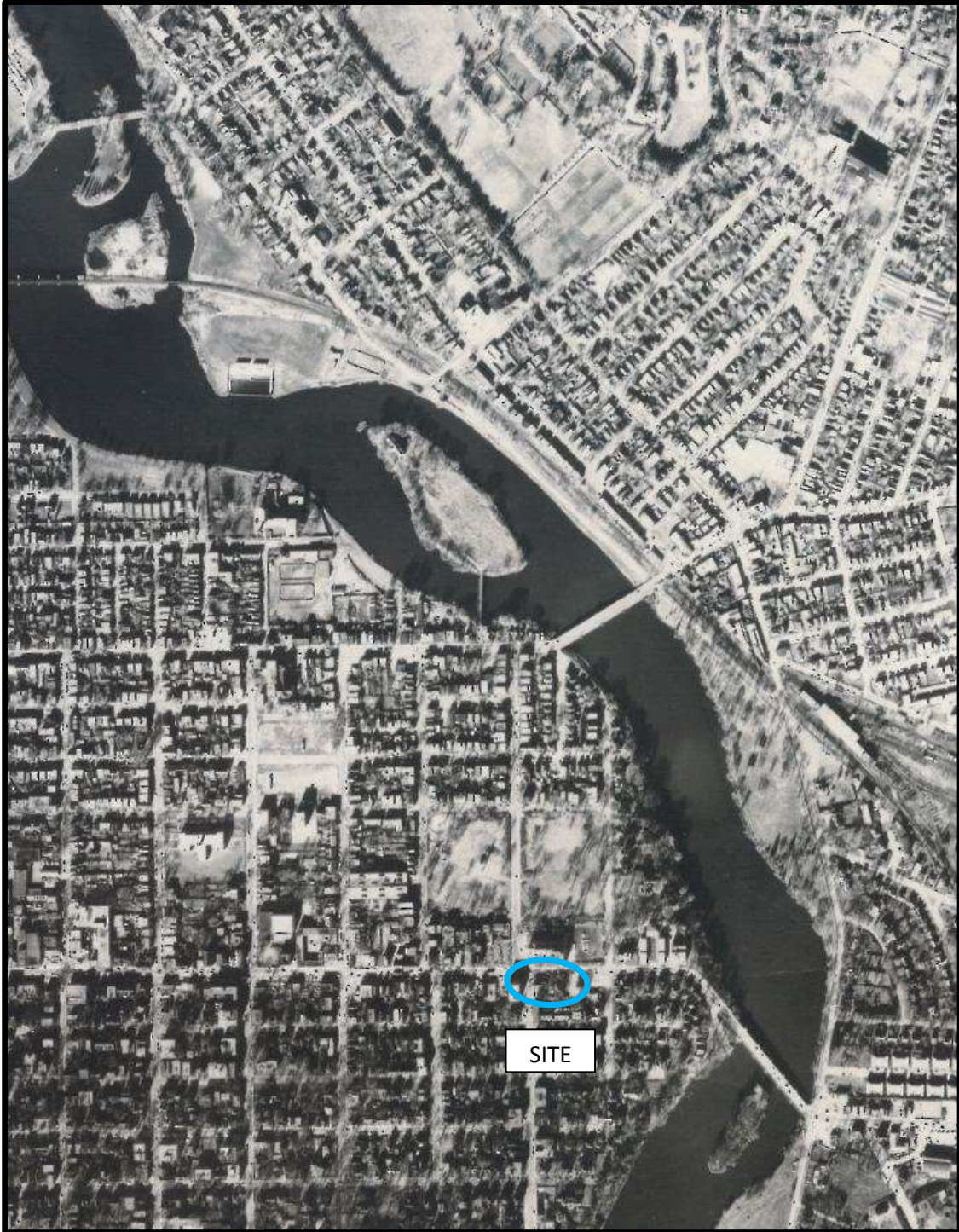
AERIAL PHOTOGRAPH
1928



AERIAL PHOTOGRAPH
1938



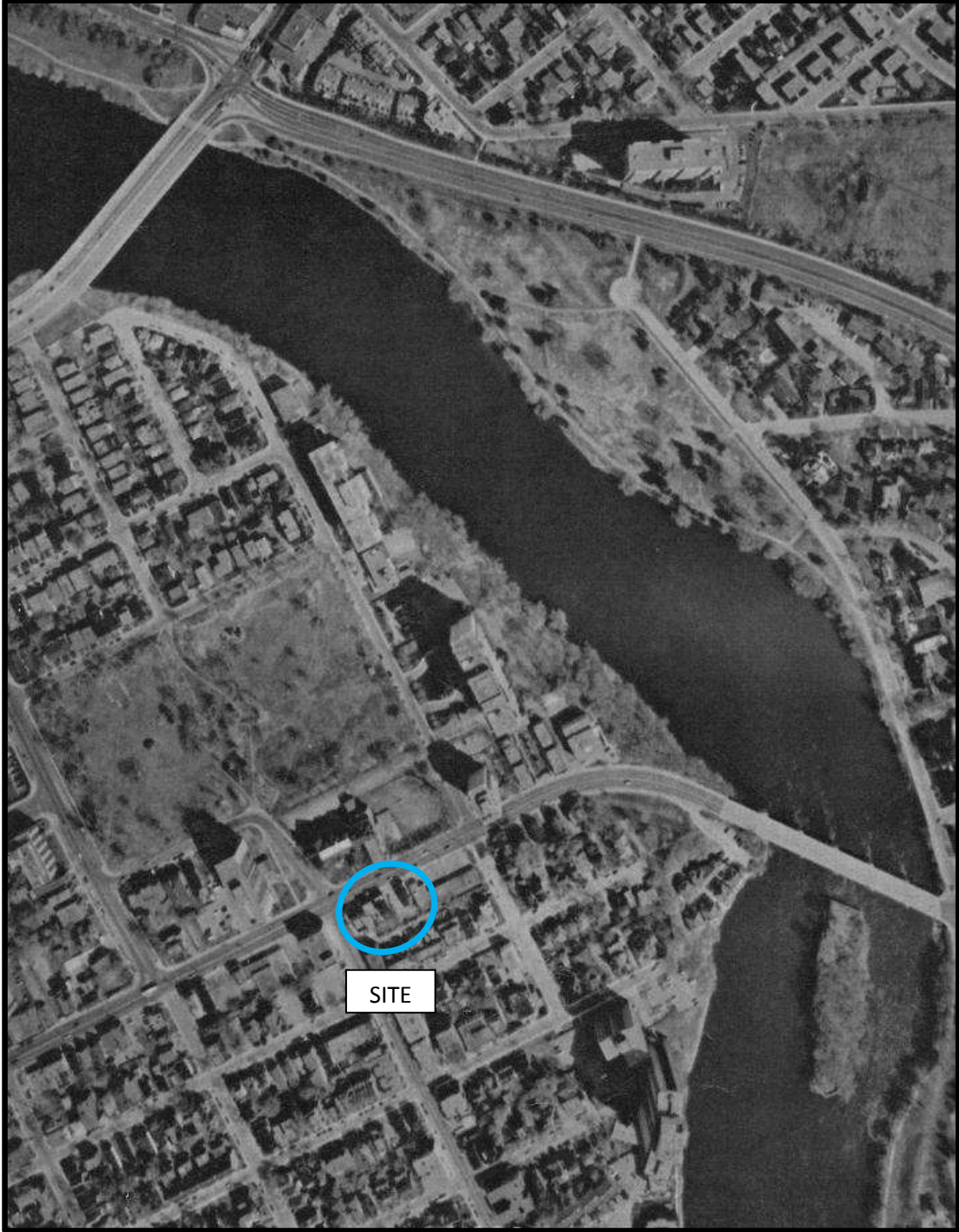
AERIAL PHOTOGRAPH
1950



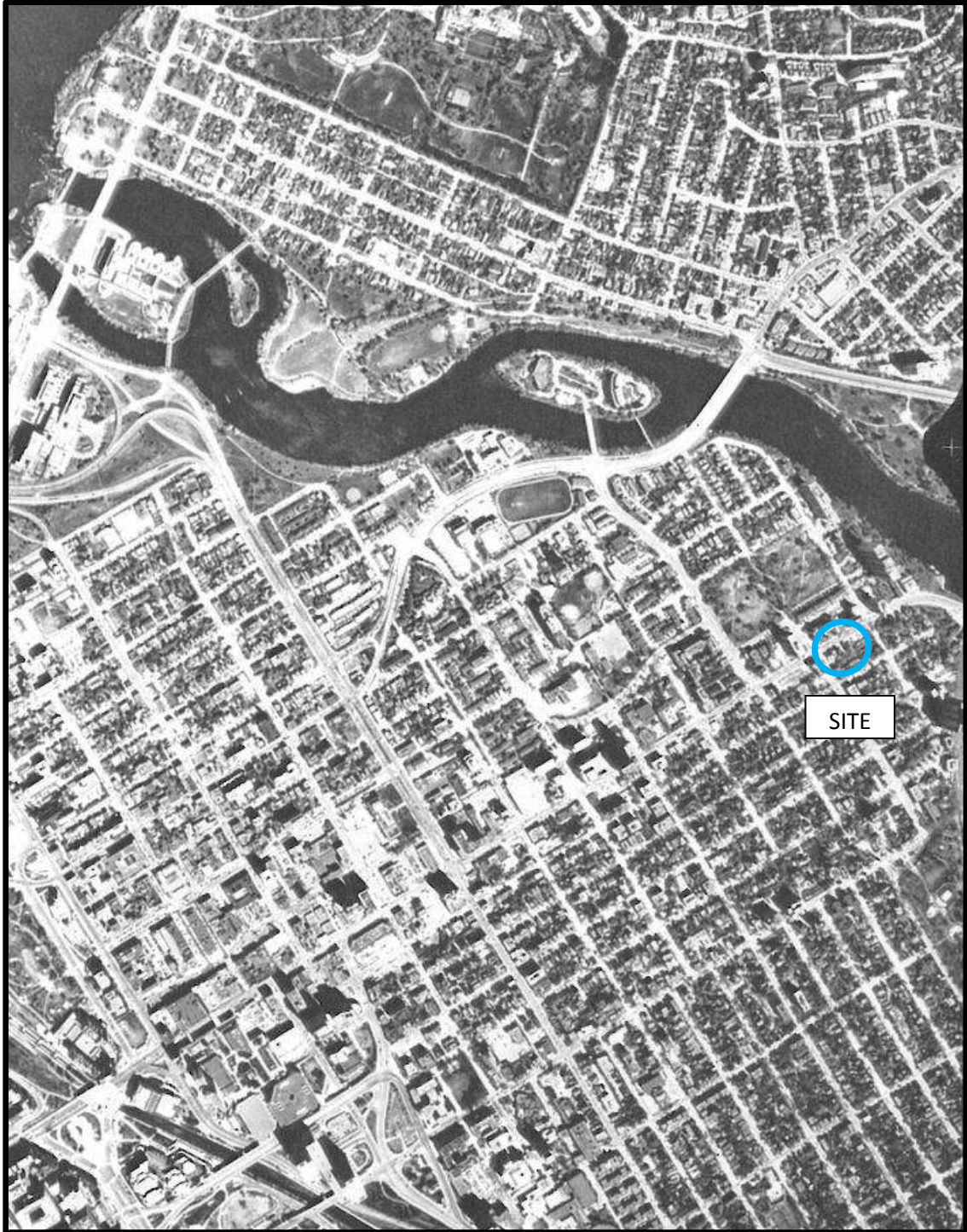
AERIAL PHOTOGRAPH
1956



AERIAL PHOTOGRAPH
1968



AERIAL PHOTOGRAPH
1993



AERIAL PHOTOGRAPH
2001

Site Photographs

PE2706

590 Rideau Street, Ottawa, Ontario

March 3, 2016



Photograph 1: Subject site, facing east along Rideau Street.



Photograph 2: Subject site, facing southwest towards Charlotte Street.

APPENDIX 2

MOECC FREEDOM OF INFORMATION REQUEST

TSSA CORRESPONDENCE

CITY OF OTTAWA HLUI SEARCH REQUEST

MOECC WELL RECORDS

Ministry of the Environment
and Climate Change

Ministère de l'Environnement et de
l'Action en matière de changement
climatique



Freedom of Information and
Protection of Privacy Office

Bureau de l'accès à l'information et
de la protection de la vie privée

12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075
Fax: (416) 314-4285

12^e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél.: (416) 314-4075
Télec.: (416) 314-4285

February 26, 2016

Xavier Redhead
Paterson Group Inc.
154 Colonnade Road
Ottawa, ON K2E 7J5

Dear Xavier Redhead:

RE: **Freedom of Information and Protection of Privacy Act Request
Our File # A-2016-01226, Your Reference PE2706**

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of \$5.00 (non-refundable application fee), along with your \$30.00 deposit.

The search is being conducted on the following: 590 to 594 Rideau St, Ottawa (even numbers only). If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search, copying and preparation time.

If you have any questions regarding this matter, please contact Craig Jackson at (416) 212-0561.

Yours truly,

Jacqueline Gallacher
FOI Manager (A)

Retain this copy for your records
Customer copy
Total \$35.00

Trace # 4061
Inv. # 4160
Auth # 080043
RRN 001004272
Name: *****7753
Exp Date **/**
Card Type VI
02-26-2016
Acct # *****7753
08:09:34
M
VI
PURCHASE

16-01226
MOE-INFO MGMT & ACCES
40 ST. CLAIR AVENUE MAY1M2
TORONTO ON
20164541
GH2016454151

Xavier Redhead

From: Ruchi Chohan [rchohan@tssa.org] on behalf of Public Information Services [publicinformationsservices@tssa.org]
Sent: February-24-16 12:42 PM
To: Xavier Redhead
Subject: RE: 590 Rideau Street

Hello Xavier,

Thank you for your inquiry.

I have searched the below noted address (addresses) and I have located the following record:

596 Rideau St, Ottawa has record of an 1 active FS cylinder exchange.

For a more detailed report including underground fuel storage tank details and copies of all inspection reports, please submit your request in writing to Public Information Services via e-mail (publicinformationsservices@tssa.org) or through mail along with a fee of \$56.50 (including HST) per location. The fee is payable with credit card (Visa or MasterCard) or with a cheque made payable to TSSA.

Thank you,

Ruchi

Public Information Services

Facilities & Business Services
3300 Bloor Street West
Center Tower, 16th Floor
Toronto, Ontario, M8X-2X4
Tel: 1-877-682-8772 Fax: (416) 734-3568 E-mail: publicinformationsservices@tssa.org
www.tssa.org



From: Xavier Redhead [<mailto:XRedhead@patersongroup.ca>]
Sent: Wednesday, February 24, 2016 10:49 AM
To: Public Information Services
Subject: 590 Rideau Street

Good morning,

Could you please complete a search of your records for underground/aboveground storage tanks, historical spills or other infractions for the following addresses for properties located in Ottawa, Ontario.

538, 574, 590, 589, 594, 595, 596 Rideau Street

160, 205 Charlotte Street

543 Besserer Street

Thank you,



DISCLAIMER

For use with HLUI Database

CITY OF OTTAWA ("the City") is the owner of the HISTORICAL LAND USE INVENTORY ("HLUI"), a database of information on the type and location of land uses within the geographic area of Ottawa, which had or have the potential to cause contamination in soil, groundwater or surface water.

The City, in providing information from the HLUI, to Paterson Group Inc. ("the Requester") does so only under the following conditions and understanding:

1. This is a free service offered by the City.
2. The information which is contained in the HLUI has been compiled from publicly available records and other sources of information. The HLUI may contain erroneous information given that such records and sources of information may be flawed. Changes in municipal addresses over time may have introduced error in such records and sources of information. The City is not responsible for any errors or omissions in the HLUI and reserves the right to change and update the HLUI without further notice. The City does not, however, make any commitment to update the HLUI. Accordingly, all information from the HLUI is provided on an "as is" basis with no representation or warranty by the City with respect to the information's accuracy or exhaustiveness in responding to the request.
3. City staff will perform a search of the HLUI based on the information given by the Requester. City staff will make every effort to be accurate, however, the City does not provide an assurance, guarantee, warranty, representation (express or implied), as to the availability, accuracy, completeness or currency of information which will be provided to the Requester. The HLUI in no way confirms the presence or absence of contamination or pollution of any kind. The information provided by the City to the Requester is provided on the assumption that it will not be relied upon by any person whatsoever. The City denies all liability to any such persons attempting to rely on any information provided from the HLUI database.
4. The City, its employees, servants, agents, boards, officials or contractors take no responsibility for any actions, claims, losses, liability, judgments, demands, expenses, costs, damages or harm suffered by any person whatsoever including negligence in compiling or disseminating information in the HLUI.
5. Copyright is reserved to the City.
6. Any use of the information provided from the HLUI which a third party makes, or any reliance on or decisions to be based on it, are the responsibilities of such third parties. The City, its employees, servants, agents, boards, officials or contractors accept no responsibility for any damages, if any, suffered by a third party as a result of decisions made as a result of an information search of the HLUI.
7. Any use of this service by the Requestor indicates an acknowledgement, acceptance and limits of this disclaimer.
8. All information collected under this request and all records provided in response to this request are subject to the provisions of the *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. M.56, as amended.

Signed: Xavier Redhead Dated: March 4, 2016
Per: Xavier Redhead, B.Eng.
(Please print name)
Title: Environmental Assessor
Company: Paterson Group Inc.



INFORMAL REQUEST FOR INFORMATION PROCESS
CONFIDENTIAL

File No.: PE2706

Request for Information
(Informal Request)*

1. REQUESTER INFORMATION

- a) Name of Requester: Xavier Redhead
- b) Address of Requester: 154 Colonnade Road South, Ottawa, Ontario, K2E 7J5
- c) Telephone Number: 613-226-7381
- d) Site Address: Lot- 590 Concession: _____
Street: Rideau Street City/Town: Ottawa
Postal Code: _____
- e) Legal Plan Attached: Yes () No (X)
- f) Site Owners: Richcraft Homes Limited
- g) Adjacent Property Owners: _____
- h) Date of Ownership: _____
Previous Owner(s): _____
- i) Type of Site: (x) vacant, () residential, () commercial,
() other (specify) _____
- j) Requestors relationship to Site: Environmental Site Assessor
- k) Date of Previous Request: n/a
- l) Date of Previous ESA: n/a
- m) Information Requested: Environmental Records (violations, sewer use
infractions, spills or leaks, waste disposal sites...) and HLUI database for historical land
use in the area of the site.

2. CONFIDENTIALITY

- a) Consent Required: (x) Owner () Tenant () Purchaser () Legal**
- b) Consent Obtained: (x) Owner () Tenant () Purchaser () Legal**

*Will not be processed as a request for information pursuant to MFIPPA.

** (Consent letters must contain the information required, give authorization to requestor,
and be dated and signed)

patersongroup

Consulting Engineers

154 Colonnade Road South
Ottawa, Ontario
Canada, K2E 7J5
Tel: (613) 226-7381
Fax: (613) 226-6344

Geotechnical Engineering
Environmental Engineering
Hydrogeology
Geological Engineering
Materials Testing
Building Science
Archaeological Services

www.patersongroup.ca

February 24, 2016
File: PE2706-HLUI

City of Ottawa
110 Laurier Avenue W
Ottawa, Ontario
K1P 1J1

Subject: **Authorization Letter, HLUI Search
Phase I-Environmental Site Assessment
590 Rideau Street
Ottawa, Ontario**

Dear Sir or Madame,

Please consider this letter as confirmation that Paterson Group has been retained by the property owner to conduct a Phase I-Environmental Site Assessment at the aforementioned property.

With this letter, the property owner authorizes the City of Ottawa and other regulatory bodies to release, to Paterson Group, information requested for the purpose of completing an environmental assessment of the property.

Name of Company/Property Owner:

RITCHCRAFT HOMES LTD.

Name of Representative

KEVIN YEMM

Authorization of Representative



Date

01-MAR-2016

Well ID

Well ID Number: 7207989

Well Audit Number: C19502

Well Tag Number: A122883

This table contains information from the original well record and any subsequent updates.

Well Location

Address of Well Location

Township NEPEAN TOWNSHIP

Lot

Concession

County/District/Municipality OTTAWA-CARLETON

City/Town/Village

Province ON

Postal Code n/a

UTM Coordinates
NAD83 — Zone 18
Easting: 447141.00
Northing: 5031169.00

Municipal Plan and Sublot Number

Other

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
----------------	----------------------	-----------------	---------------------	------------	----------

Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
------------	----------	--	---------------

Method of Construction & Well Use

Method of Construction	Well Use

Status of Well

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7328

Results of Well Yield Testing

After test of well yield, water was

If pumping discontinued, give reason

Pump intake set at

Pumping Rate

Duration of Pumping

Final water level

If flowing give rate

Recommended pump depth

Recommended pump rate

Well Production

Disinfected?

Draw Down & Recovery

Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
SWL			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
45		45	
50		50	

60

60

Water Details

Water Found at Depth

Kind

Hole Diameter

Depth
From

Depth
To

Diameter

Audit Number: C19502

Date Well Completed: March 19, 2013

Date Well Record Received by MOE: September 17, 2013

APPENDIX 3

QUALIFICATIONS OF ASSESSORS

POSITION

Associate and Supervisor of the Environmental Division
Senior Environmental/Geotechnical Engineer

EDUCATION

Queen's University, B.A.Sc.Eng, 1991
Geotechnical / Geological Engineering

MEMBERSHIPS

Ottawa Geotechnical Group
Professional Engineers of Ontario
Consulting Engineers of Ontario

EXPERIENCE

1991 to Present

Paterson Group Inc.

Associate and Senior Environmental/Geotechnical Engineer
Environmental and Geotechnical Division
Supervisor of the Environmental Division

**Environmental
Engineering**

**Geotechnical
Engineering**

**Materials Testing
Quality Control**

Building Science

Hydrogeology

**Archaeological
Services**

SELECT LIST OF PROJECTS

Mary River Exploration Mine Site - Northern Baffin Island
Rideau Centre Expansion project - Ottawa
Agricultural Supply Facilities - Eastern Ontario
Laboratory Facility – Edmonton (Alberta)
Ottawa International Airport - Contaminant Migration Study - Ottawa
Investigation and Remediation – Cotton Mill Redevelopment, Cornwall
Billings Hurdman Interconnect - Ottawa
Bank Street Reconstruction - Ottawa
Environmental Review – Various Laboratories across Canada - CFIA
Dwyer Hill Training Centre – Ottawa
Nortel Networks Environmental Monitoring - Carling Campus – Ottawa
Remediation Program - Block D Lands – Kingston
Investigation of former landfill sites – City of Ottawa
Record of Site Condition for Railway Lands – North Bay
Assessment and Remediation - North Bay Airport
Commercial Properties – Guelph and Brampton
Brownfields Remediation – Alcan Site - Kingston
PWGSC Building – 90 Elgin Street - Ottawa
Remediation Program - Ottawa Train Yards
MHLH Facility – CFB Petawawa
Ottawa Congress Centre
Lansdowne Park Redevelopment - Ottawa