



FINAL
Phase I Environmental
Site Assessment

269-279 Bell Street South
Ottawa, Ontario

Prepared for:

Syndao Inc.
32 Harry Douglas Drive
Ottawa, ON K2S 1Z2

Attn: Mr. *Eli Samra*

March 4, 2015

Pinchin File: 102416

© 2015 Pinchin Ltd.





Issued to: Syndao Inc.
Contact: Mr. ~~Eli Samra~~
Issued on: March 4, 2015
Pinchin file: 102416
Issuing Office: 555 Legget Drive, Suite 1001,
Tower A, Kanata, ON K2K 2X3
Primary Contact: Skyler Besley
Senior Project Manager

BEM6526

Author:

Brittany Miller, B.Sc.
Project Technologist
1-613-592-3387 Ext. 1819
bmiller@pinchin.com

SJB6526

Reviewer:

Skyler Besley, B.Sc.
Senior Project Manager
1-613-592-3387 Ext. 1815
sbesley@pinchin.com

LCB6526

Reviewer:

Larry Backman, B.Sc.S.
Senior Vice President, National Accounts
1-613-592-3387 Ext. 1801
lbackman@pinchin.com



EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) was retained on February 12, 2015 through an Authorization to Proceed signed by Mr. Marc Larisey of Syndao Inc. (Client) to conduct a Phase I Environmental Site Assessment (ESA) of the property located at 269-279 Bell Street South, Ottawa, Ontario (hereafter referred to as the Site).

The Site is developed with six two-storey residential dwellings (Site Buildings A to F).

Pinchin was advised by the Client that the purpose of the Phase I ESA was to assess potential issues of environmental concern in relation to the potential sale of the Site.

The Phase I ESA was completed in general accordance with the Canadian Standards Association (CSA) document entitled "*Phase I Environmental Site Assessment, CSA Standard Z768-01*" dated November 2001 (reaffirmed 2012), including a review of readily-available historical records, a review of readily-accessible regulatory records, a Site reconnaissance, interviews, an evaluation of information and reporting, subject to the limitations outlined in Section 8.0 of this report.

Based on the results of the Phase I ESA completed by Pinchin, the following could result in potential subsurface impacts at the Site:

- The Ontario Spills database indicated that on November 26, 1989, 750 litres of furnace oil was released onto the exterior ground surface at Site Building C due to an aboveground storage tank leak. Based on the above-noted information, it is Pinchin's opinion that this historical spill has the potential to result in subsurface impacts at the Site.

Based on the findings noted above, Pinchin recommends completing a Phase II ESA at the Site.

Given the years of construction of the Site Buildings (i.e., approximately 1890s and 1922), there is a potential for friable and non-friable asbestos-containing materials to be present in the Site Buildings. Pinchin did not conduct an asbestos survey as part of this Phase I ESA, nor was any destructive or intrusive sampling or inspection conducted as part of this Phase I ESA. The Site Representative advised Pinchin that no asbestos surveys have been previously conducted at the Site, and that an Asbestos Management Program has not been developed for or implemented at the Site.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.

This report has been issued without having received responses from the Ontario Ministry of the Environment and Climate Change or the City of Ottawa. Once a response from these regulatory bodies is received, the information will be reviewed by Pinchin and, if there is any information that represents a potential issue of environmental concern, a copy of the response will be forwarded to the Client under separate cover. Our conclusions and recommendations may be amended based on this information.



TABLE OF CONTENTS

1.0 INTRODUCTION..... 1

 1.1 Background..... 1

 1.2 Scope of Work 1

2.0 SITE DESCRIPTION..... 1

 2.1 Site Location and Physical Description 1

 2.2 Topographic, Geologic and Hydrogeological Setting 2

 2.3 Site Operations 3

3.0 HISTORICAL RECORDS REVIEW 4

 3.1 Site Interviews and Records 4

 3.2 Aerial Photographs 4

 3.3 Opta Information 6

 3.4 City Directories 7

 3.5 Previous Environmental Reports 8

 3.6 Historical Summary..... 8

4.0 REGULATORY INFORMATION AND CORRESPONDENCE 9

 4.1 Site Regulatory Information 9

 4.2 Ontario Ministry of the Environment and Climate Change 9

 4.3 Technical Standards & Safety Authority 9

 4.4 Local and Municipal Government Ottawa 9

 4.5 EcoLog ERIS 10

 4.6 Regulatory Information Summary..... 12

5.0 SITE RECONNAISSANCE 12

 5.1 Hazardous Materials..... 13

 5.2 Storage Tanks 13

 5.2.1 Aboveground Storage Tanks 13

 5.2.2 Underground Storage Tanks..... 13

 5.3 Water and Wastewater 14

 5.4 Polychlorinated Biphenyls 14

 5.5 Asbestos-Containing Materials..... 15

 5.6 Lead-Containing Paints 16

 5.7 Ozone-Depleting Substances..... 17

 5.8 Radon 17

 5.9 Mould or Microbial Contamination 17

 5.10 Air Emissions..... 18

 5.11 Staining and Stressed Vegetation 18

 5.12 Non-Hazardous Wastes 18

6.0 ACTIVITIES ON ADJACENT PROPERTIES 19

7.0 FINDINGS AND RECOMMENDATIONS..... 19

8.0 STANDARD LIMITATIONS..... 20

9.0 REFERENCES..... 21



FIGURES

- FIGURE 1 Key Map
FIGURE 2 Site and Surrounding Land Use Plan

APPENDICES

- APPENDIX I Opta Response
APPENDIX II Correspondence with Regulatory Agencies
APPENDIX III EcoLog ERIS Report
APPENDIX IV Qualifications of Assessor
APPENDIX V Photographs



1.0 INTRODUCTION

1.1 Background

Pinchin Ltd. (Pinchin) was retained on February 12, 2015 through an Authorization to Proceed signed by Mr. Marc Larisey of Syndao Inc. (Client) to conduct a Phase I Environmental Site Assessment (ESA) of the property located at 269-279 Bell Street South, Ottawa, Ontario (hereafter referred to as the Site).

The Site is developed with six two-storey residential dwellings (Site Buildings A to F).

Pinchin was advised by the Client that the purpose of the Phase I ESA was to assess potential issues of environmental concern in relation to the potential sale of the Site.

1.2 Scope of Work

The Phase I ESA was completed in general accordance with the Canadian Standards Association (CSA) document entitled "*Phase I Environmental Site Assessment, CSA Standard Z768-01*" dated November 2001 (reaffirmed 2012), including a review of readily available historical and regulatory records, a Site reconnaissance, interviews, an evaluation of information and reporting, all subject to the limitations outlined in Section 8.0 of this report.

Pinchin conducted a Site reconnaissance on February 19, 2015, and was accompanied by Mr. Marc Larisey, Owner of Site since 2009, hereafter referred to as the Site Representative.

2.0 SITE DESCRIPTION

2.1 Site Location and Physical Description

As indicated on Figure 1 (Key Map), the Site is located on the east side of Bell Street South, approximately 20 metres (m) north of Plymouth Street, in Ottawa, Ontario. The Site is situated in an area that predominantly consists of institutional, residential and commercial land uses. Figure 2 illustrates the Site and surrounding area.

A summary of the physical description of the Site, including the Site Buildings, is provided below:

Topic	Details
Approximate Site Area	0.14 hectares (0.35 acres).
Buildings on-Site	Site Building A: Located on the north portion of the Site. Site Building B: Located on the north-central portion of the Site. Site Buildings C and D: Located on the central portion of the Site. Site Building E: Located on the south-central portion of the Site.



Topic	Details
	Site Building F: Located on the south portion of the Site.
Approximate Year of Construction and Significant Additions or Renovations	1890s, with additions to the east elevations of the Site Buildings in 1922.
Number of Floors (Including ground level)	Two.
Subsurface Levels	One.
Approximate Footprint Areas of Buildings	Site Building A: 73 square metres (m ²) (786 square feet (ft ²)). Site Building B: 92 m ² (990 ft ²). Site Buildings C, E and F: 84 m ² (904 ft ²). Site Building D: 72 m ² (775 ft ²).
Approximate Total Areas of Buildings	Site Building A: 146 m ² (1,572 ft ²). Site Building B: 184 m ² (1,980 ft ²). Site Buildings C, E and F: 168 m ² (1,808 ft ²). Site Building D: 144 m ² (1,550 ft ²).
Heating / Cooling	Site Buildings A-D and F: Natural gas-fired forced air furnaces and electric baseboards. Site Building E: Natural gas-fired boilers supplying hydronic radiators. Cooling is provided by window-mounted air conditioning (A/C) units.
Elevators	None observed and none reported by Site Representative.
Emergency Generators	None observed and none reported by Site Representative.
Landscaped / Grassed/Bare Ground Areas	Landscaping is present along the north, west and east Site boundaries.
Paved or Other Sealed Surface Materials	Asphalt-paved parking areas are located at the rear of each Site Building.

2.2 Topographic, Geologic and Hydrogeological Setting

Topic	Findings
Topography of Site and Surrounding Area	The Site and surrounding area are generally flat.



Topic	Findings
Site Grade Relative to the Adjoining Properties	The Site is at a similar grade to the adjoining properties.
Subsurface Soils	Alluvial deposits consisting of stratified gravel, sand, silt and clay.
Fill Materials	None observed and none reported by the Site Representative.
Bedrock Type	Sedimentary rocks consisting of limestone, dolomite, shale, argillite, sandstone, quartzite, and/or grit.
Inferred Bedrock Depth	Unknown based on the information reviewed.
Inferred Groundwater Depth	Unknown based on the information reviewed.
Nearest Open Water Body	Ottawa River is located approximately 1.6 kilometres northwest of the Site.
Inferred Groundwater Flow Direction	Northwest based on the nearest body of water.

2.3 Site Operations

The Site is developed with six two-storey residential dwellings (Site Buildings A to F). Site Building A is located on the north portion of the Site, Site Building B is located on the north-central portion of the Site, Site Buildings C and D are located on the central portion of the Site, Site Building E is located on the south-central portion of the Site and Site Building F is located on the south portion of the Site.

Site Buildings A, B, C and D are two-storey residential dwellings. The ground floors consist of a kitchen and living room. The second floors consist of bedrooms and a bathroom. The basements are utilized for storage, a laundry room, and boiler room.

Site Buildings E and F are two-storey residential dwellings that have been converted into two residential units each. Each unit contains a kitchen, living room, bathroom and bedrooms. The basements are utilized for storage, a laundry room, and a boiler room.

Asphalt-paved parking areas are located at the rear of each Site Building.

No elevators or emergency generators service the Site Buildings. There is no day care in the Site Buildings, nor is there external playground equipment.

Site maintenance activities involve painting, replacement of light fixtures, minor plumbing and electrical work on an as-needed basis.



3.0 HISTORICAL RECORDS REVIEW

3.1 Site Interviews and Records

The Site Representative advised Pinchin of the following with respect to the historical occupancy and operations at the Site:

- The Site Buildings were constructed in approximately the 1890s on previously undeveloped land;
- Additions were made to the east elevations of the Site Buildings in approximately 1922;
- Occupants of the Site Buildings have always been residential in nature;
- No dry cleaning operations have historically taken place at the Site; and
- No retail fuel outlets (RFOs) have operated at the Site.

3.2 Aerial Photographs

A copy of an aerial photograph dated 1985 was obtained from the National Air Photo Library in Ottawa, Ontario and reviewed by Pinchin. In addition, digital aerial photographs dated 1958, 1965, 1976, 1991, 2002, 2008 and 2014 were obtained from the City of Ottawa e-map website (<http://maps.ottawa.ca/geoOttawa/>) and were reviewed by Pinchin. It should be noted that accurate details could not be determined from the 1985 aerial photograph due to the small scale and clarity of the photograph. A summary of information inferred with respect to the Site is provided in the following table:

Year of Photograph	Site
1958, 1965, 1976, 1985, 1991, 2005, 2008 and 2014.	Buildings that were similar in size and configuration to the present-day Site Buildings were evident on the Site.

A summary of information inferred with respect to the surrounding area is provided in the following table:



Year of Photograph	North	East	South	West
1958.	Railway lines followed by present-day Raymond Street and residential dwellings.	Present-day Arthur Lane South followed by residential dwellings and present-day Cambridge Street South, similar to the current configuration.	Single-family residential dwellings followed by present-day Plymouth Street and a commercial building.	Present-day Bell Street South followed by single-family residential dwellings and present-day Lebreton Street South, similar to the current configuration.
1965, 1976, 1985 and 1991.	Similar to 1958; however, the railway lines are no longer evident and replaced by Highway 417, similar to the current configuration.	Similar to 1958.	Similar to 1958.	Similar to 1958.
2002.	Similar to 1965, 1976, 1985 and 1991.	Similar to 1958, 1965, 1976, 1985 and 1991.	Similar to 1958, 1965, 1976, 1985 and 1991; however, the commercial building appears to have been demolished.	Similar to 1958, 1965, 1976, 1985 and 1991.
2008 and 2014.	Similar to 1965, 1976, 1985, 1991 and 2002.	Similar to 1958, 1965, 1976, 1985, 1991 and 2002.	Similar to 2002, with a multi-tenant residential building evident, similar to current configuration.	Similar to 1958, 1965, 1976, 1985, 1991 and 2002.

A railway line was observed running in a west-east direction in the 1958 aerial photographs approximately 10 m north of the Site. Creosote or chromated copper arsenate (CCA) used to treat the railway ties have the potential to impact soils in the vicinity of railway lines; however, these impacts are typically minor, localized, and near the surface. Based on the above-noted information, it is Pinchin's opinion that this railway line is unlikely to result in potential subsurface impacts at the Site.

Based on Pinchin's review of the above-noted aerial photographs, nothing was observed that is likely to result in potential subsurface impacts at the Site.



3.3 Opta Information

Pinchin contacted Opta Information Intelligence (Opta) to obtain copies of Fire Insurance Plans (FIPs) related to the Site and surrounding area, as well as Property Underwriters' Reports (PURs) and Property Underwriters' Plans (PUPs) related to the Site. Opta provided Pinchin with copies of FIPs dated 1895, 1901, 1912, 1915, 1922 and 1963 for the area including the Site (see Appendix I).

Based on Pinchin's review of the FIPs, the following was noted:

- In the 1895, 1901, 1912 and 1915 FIPs, the Site consisted of six residential dwellings, similar in size and configuration to the west elevations of the Site Buildings. The surrounding properties consisted of residential dwellings, as well as institutional and commercial buildings. It should be noted that the properties located south and east of the Site were not evident in the 1895 and 1901 FIPs;
- In the 1895, 1901, 1912, 1915 and 1922 FIPs, a lumber yard was located approximately 190 m southwest of the Site. Based on the distance between the lumber yard and the Site, and the fact that this property has been redeveloped, it is Pinchin's opinion that this historical off-Site operation is unlikely to result in potential subsurface impacts at the Site;
- In the 1895, 1901, 1912, 1915, 1922 and 1963 FIPs, a railway line was observed running in a west-east direction approximately 10 m north of the Site. CCA used to treat the railway ties have the potential to impact soils in the vicinity of railway lines; however, these impacts are typically minor, localized, and near the surface. Based on the above-noted information, it is Pinchin's opinion that this railway line is unlikely to result in potential subsurface impacts at the Site;
- In the 1922 and 1963 FIPs, the Site consisted of six residential dwellings that were similar size and configuration to the current Site Buildings. The surrounding properties consisted of residential dwellings, as well as institutional and commercial buildings;
- In the 1922 FIP, a Fuel Testing Laboratory was located at 30 Lydia Street, approximately 220 m west of the Site and this property is situated hydraulically downgradient of the Site relative to the inferred groundwater flow direction. Based on the distance between this property and the Site, as well as the inferred groundwater flow direction, it is Pinchin's opinion that this historical off-Site operation is unlikely to result in potential subsurface impacts at the Site;
- In the 1963 FIP, an automotive repair facility, equipped with two underground storage tanks (USTs), was located at 316 Bell Street South. This property is located approximately 120 m southwest of the Site and is situated hydraulically transgradient of the Site relative to the inferred groundwater flow direction. Based on the distance



between the automotive repair facility and the Site, as well as the inferred groundwater flow direction, it is Pinchin's opinion that this historical off-Site operation is unlikely to result in potential subsurface impacts at the Site;

- In the 1963 FIP, an RFO, equipped with four USTs, was located on the corner of Bronson Avenue and Imperial Avenue. This property is located approximately 170 m east of the Site. Based on the distance between the RFO and the Site, it is Pinchin's opinion that this historical off-Site operation is unlikely to result in potential subsurface impacts at the Site;
- In the 1963 FIP, a commercial tire sales operation was located on the southeast corner of Plymouth Street and Bell Street South, approximately 50 m south of the Site. Based on the distance between this property and the Site, it is Pinchin's opinion that this historical off-Site operation is unlikely to result in potential subsurface impacts at the Site; and
- Additional RFOs, automotive repair facilities and planning mills were identified in the 1922 and 1963 FIPs. However based on the locations/distances between these properties and the Site, as well as the inferred groundwater flow direction, it is Pinchin's opinion that these properties are unlikely to result in potential subsurface impacts at the Site.

Based on Pinchin's review of the information provided by Opta, nothing was identified that is likely to result in potential subsurface impacts at the Site.

3.4 City Directories

City directories for the years 1888 to 2011 were reviewed by Pinchin at the Library and Archives of Canada in Ottawa, Ontario. It should be noted that no city directories were available for the City of Ottawa subsequent to 2011. A summary of information obtained with respect to the Site is provided in the following table:

Years	Occupant Listings for Site Address
1888.	Site not listed.
1893 to 2011.	Residential listings.

In general, the city directories indicated that the surrounding area has historically consisted of vacant, commercial and residential land uses since 1891. No historical dry cleaning operations, RFOs or other operations of potential environmental concern were identified; however, Pinchin notes the following:

- Dunlop Canada Ltd., a tire sales and change facility, was listed at 289 Bell Street South from 1955 until 1959. This property is located approximately 40 m southwest of the Site



and is situated hydraulically transgradient of the Site relative to the inferred groundwater flow direction. Based on the distance between this property and the Site, the short duration of operations, as well as the inferred groundwater flow direction, it is Pinchin's opinion that this historical off-Site operation is unlikely to result in potential subsurface impacts at the Site;

- Commercial Tire Sales Ltd. a tire sales and change facility was listed at 291-293 Bell Street South from 1955 until 1959. This property is located approximately 50 m southwest of the Site and is situated hydraulically transgradient of the Site relative to the inferred groundwater flow direction. Based on the distance between this property and the Site, the short duration of operations, as well as the inferred groundwater flow direction, it is Pinchin's opinion that this historical off-Site operation is unlikely to result in potential subsurface impacts at the Site;
- An automotive repair/servicing facility was listed at 316 Bell Street North from 1931 until 1995. This property is located approximately 115 m southeast of the Site. Based on the distance between the automotive repair/servicing facility and the Site, it is Pinchin's opinion that this historical off-Site operation is unlikely to result in potential subsurface impacts at the Site; and
- Historical RFOs and automotive repair facilities were listed within the city directories reviewed for the Site area. However, based on the distance of these facilities from the Site, the inferred groundwater flow direction and the fact that the majority of these properties have been redeveloped, it is Pinchin's opinion that these historical facilities are unlikely to result in potential subsurface impacts at the Site.

Based on Pinchin's review of the above-noted city directories, nothing was identified that is likely to result in potential subsurface impacts at the Site.

3.5 Previous Environmental Reports

No previous reports (i.e., Phase I ESAs, geological or geotechnical reports) were provided for Pinchin's review and, according to the Client, none are available.

3.6 Historical Summary

Based on the results of the historical review, nothing was identified that is likely to result in potential subsurface impacts at the Site



4.0 REGULATORY INFORMATION AND CORRESPONDENCE

4.1 Site Regulatory Information

Pinchin requested copies of permits, approvals and registrations from the Client and was advised that there is no regulatory information with respect to the Site.

4.2 Ontario Ministry of the Environment and Climate Change

An Ontario Ministry of the Environment and Climate Change (MOECC, formerly the Ontario Ministry of the Environment) Freedom of Information request was submitted to the MOECC for information on file with respect to the Site. Specifically, the MOECC was asked what information it has regarding historical spills, orders, investigations/prosecutions, waste generator numbers/classes, Certificates-of-Approval and Environmental Compliance Approvals. At the time of writing this report, no response had been received from the MOECC. When a formal response is received, it will be reviewed by Pinchin. If there is any information that represents a potential issue of environmental concern, a copy of the response will be forwarded to the Client under separate cover. Our conclusions and recommendations may be amended based on this information. A copy of Pinchin's request submitted to the MOECC is provided in Appendix II of this report.

Pinchin conducted a search of the MOECC *Brownfields Environmental Site Registry*. Based on the results of Pinchin's search, a Record of Site Condition has not been filed for the Site or neighbouring properties.

4.3 Technical Standards & Safety Authority

The Technical Standards & Safety Authority (TSSA) was contacted to establish the status of the Site with respect to its files, to identify outstanding instructions, tank registrations, incident reports, fuel/oil spills or contamination records associated with the Site. Based on email correspondence with Mr. Prem Lal of the TSSA on February 24, 2015, no information was on file with respect to the Site. A copy of Pinchin's request submitted to the TSSA and their response is provided in Appendix II of this report.

4.4 Local and Municipal Government

Inquiries were made to the City of Ottawa to conduct a search within their Historical Land Use Inventory (HLUI) and environmental (i.e., violations, sewer-use infractions, spills or leaks, waste disposal sites, etc.) databases for information concerning the Site and Site area. The HLUI database contains information concerning land uses within the City of Ottawa that may have the potential to impact soil and/or groundwater. At the time of writing this report, no response had been received from the City of Ottawa. When a formal response is received, it will be reviewed by Pinchin. If there is any information that represents a potential issue of environmental concern, a copy of the response will be forwarded to the



Client under separate cover. Pinchin's conclusions and recommendations may be amended based on this information. A copy of Pinchin's request submitted to the City of Ottawa is provided in Appendix II of this report.

In addition, Pinchin reviewed the "Mapping and Assessment of Former Industrial Sites" report that was prepared by Intera Technologies Inc. (Intera) for the City of Ottawa. The Intera report consists of a study that lists former industrial sites that may have potentially impacted the soil and/or groundwater at their respective locations. The sites identified within the study are categorized as Group I, Group II or Group III. Low priority sites are identified as Group III as it is unlikely that significant waste quantities remain present at these properties today and, therefore, the potential for environmental impact is low. Medium priority sites are identified as Group II as they are presently likely to have waste quantities remaining; however, the sites' location with respect to surface waste is such that significant environmental impacts are not likely to occur. High priority sites are identified as Group I as there is documentation demonstrating that wastes are present at these sites, and that the potential for environmental impact is high.

The 1988 Intera report was consulted, and no Group I or III sites were located within a 200 m radius of the Site. However, the following Group II sites were noted:

- Mines Branch Radioactivity Division (Quonset Huts) was classified as a non-industrial site. This property address is noted to be located at 30 Lydia Street, approximately 220 m west of the Site. Based on separation distance between this property and the Site, it is Pinchin's opinion that this property is unlikely to result in potential subsurface impacts at the Site; and
- Dominion of Canada Fuel Testing Station, Fuel Research Labs, and Ore Dressing Laboratory was classified as a non-industrial site, government (gas producers) and a non-industrial site (bulk oil and gasoline). This property is noted to be located at 552-562 Booth Street, approximately 235 m southwest of the Site. Based on separation distance between this property and the Site, it is Pinchin's opinion that this property is unlikely to result in potential subsurface impacts at the Site.

4.5 EcoLog ERIS

Pinchin submitted a request to EcoLog Environmental Risk Information Service Ltd. (ERIS) for a review of the following databases, as they pertain to the Site and surrounding properties:

- "Ontario Inventory of PCB Storage Sites", dated 1987 to October 2004;
- "Ontario Regulation 347 Waste Generators Summary", dated 1986 to April 2014.
- "Ontario Spills" (OS), dated 1988 to February 2014; and



- "Waste Disposal Sites - MOE CA Inventory", dated 1970 to January 2015.

In addition, Pinchin reviewed the following publications prepared by Intera for the MOECC:

- "Inventory of Coal Gasification Plant Waste Sites in Ontario", dated April 1987; and
- "Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario", dated November 1988.

A copy of the EcoLog ERIS report is provided in Appendix III. Based on a review of the information obtained from the above-noted sources, Pinchin notes the following:

- The OS database indicated that on November 26, 1989, 750-L of furnace oil was released onto the exterior ground surface at Site Building C due to an aboveground storage tank (AST) leak. Based on the above-noted information, it is Pinchin's opinion that this historical spill has the potential to result in subsurface impacts at the Site;
- The OS database indicated that on May 3, 1991, 10 -L of furnace oil was released onto the ground surface at 235 Plymouth Street. This property is located approximately 95 m southwest of the Site. Based on the distance from the Site, it is Pinchin's opinion that this historical spill is unlikely to result in potential subsurface impacts at the Site;
- Canadian Blood Services and Canadian Red Cross located at 85 Plymouth Street had been registered with the MOECC as a generator (Generator #ON0269100) of various hazardous wastes including waste inorganic laboratory chemicals, organic laboratory chemical and pathological wastes from 1986 until 2003. Based on a review of Pinchin's in-house MOECC Waste Generator database, approximately 398,970 kilograms (kg) of pathological wastes were generated at this property from 1986 to 2003, 1,084 kg of organic laboratory chemicals from 1994 until 2003 and 470 kg of inorganic laboratory chemicals from 1988 until 2003. This property is located approximately 65 m east of the Site. Based on the distance between this property and the Site, as well as the types of wastes generated, it is Pinchin's opinion that the historical generation of hazardous wastes at this property is unlikely to result in potential subsurface impacts at the Site;
- The OS database indicated that on August 11, 1997, 200-L of fuel oil was released onto the basement floor and into the floor drain at 422 Cambridge Street South. This property is located approximately 30 m east of the Site. Based on the fact that the fuel oil was released into the municipal sewer system, as well as the distance between this property and the Site, it is Pinchin's opinion that this historical spill is unlikely to result in potential subsurface impacts at the Site; and



- Additional surrounding properties were registered with the MOECC as waste generators, as well as identified in the OS and the polychlorinated biphenyls (PCBs) storage sites databases; however, based on the information provided within the EcoLog ERIS report, the locations/distances between these properties and the Site, as well as the inferred groundwater flow direction, it is Pinchin's opinion that the potential issues of concern associated with these listings are unlikely to result in potential subsurface impacts at the Site.

Based on Pinchin's review of the above-noted information sources, the following could result in potential subsurface impacts at the Site:

- The OS database indicated that on November 26, 1989, 750-L of furnace oil was released onto the exterior ground surface at Site Building C due to an AST leak. Based on the above noted information, it is Pinchin's opinion that this historical spill has the potential to result in subsurface impacts at the Site.

4.6 Regulatory Information Summary

Based on Pinchin's review of the regulatory information reviewed, the following could result in potential subsurface impacts at the Site:

- The OS database indicated that on November 26, 1989, 750-L of furnace oil was released onto the exterior ground surface at Site Building C due to an AST leak. Based on the above noted information, it is Pinchin's opinion that this historical spill has the potential to result in subsurface impacts at the Site;

5.0 SITE RECONNAISSANCE

Pinchin (see Appendix IV for assessor qualifications) conducted a Site reconnaissance on February 19, 2015, and was accompanied by the Site Representative. The Site reconnaissance included a walk-through of accessible areas of the interior of the Site Buildings and exterior areas of the Site while accompanied by the Site Representative. It should be noted that only a representative sample of tenant spaces were accessed at the time of Pinchin's Site reconnaissance in order to minimize tenant disturbance. In addition, Pinchin was not provided with access to Site Building D as the Site Representative did not have the keys. At the time of the Site reconnaissance, the ground surface was covered with snow and the weather was overcast. The Site reconnaissance was documented with notes and photographs. The results of the Site reconnaissance are discussed below. Photographs of some of the features noted during the Site reconnaissance are attached in Appendix V.



5.1 Hazardous Materials

Topic	Findings
Chemicals	Chemicals typically used for general purpose cleaning, and building maintenance (e.g., window cleaners, bleach, paints, deodorizers, etc.) were noted on-Site at the time of the Site reconnaissance. Chemicals observed on-Site were stored within manufacturer-supplied containers in various locations throughout the Site Buildings. Site Building A is equipped with a 680-L AST (currently empty) located in the basement.
Compressed Gases	None observed and none reported by Site Representative.
Hazardous Waste	None observed and none reported by Site Representative.

No spills or evidence of historical spills (i.e., staining) were observed in the chemical storage areas noted above. The interior floor slabs were observed to be in good condition (i.e., no cracking or pitting) and the ground surface in the vicinity of the AST was also in good condition. No floor drains or catch basins were present in the vicinity of the chemical storage areas.

5.2 Storage Tanks

5.2.1 Aboveground Storage Tanks

The following AST was observed on-Site:

Size (litres)	Construction Material	Single or Double Wall	Age	Product Stored	Location
680.	Steel.	Single.	2001.	Empty (formerly fuel oil)	Located in the basement of Site Building A.

No staining was observed in the vicinity of the AST. As noted in section 4.5, Site Building C was historically equipped with an AST. On November 26, 1989, 750-L of furnace oil was released onto the exterior ground surface at Site Building C due to an AST leak. Based on the above-noted information, it is Pinchin's opinion that this historical spill has the potential to result in subsurface impacts at the Site.

Although ASTs are commonly associated with buildings of this age (i.e., approximately 1890s and 1922), Pinchin was unable to confirm or refute the presence of former on-Site ASTs. No evidence of former ASTs was observed by Pinchin.



5.2.2 *Underground Storage Tanks*

Although the ground was snow-covered at the time of reconnaissance, no evidence of USTs (i.e., fill/vent pipes) was observed on-Site, and none were reported by the Site Representative. Although USTs are commonly associated with buildings of this age (i.e., approximately 1890s and 1922.), Pinchin was unable to confirm or refute the presence of former on-Site USTs. No evidence of former USTs was observed by Pinchin.

5.3 **Water and Wastewater**

Topic	Findings
Water Supply Source	City of Ottawa. Water is obtained by the City from the Ottawa River. Groundwater is not used as a source of potable water.
Water Use	Water is primarily used for domestic-related activities.
Sanitary/Process Wastewater Receptor	Municipal sanitary sewer system. No process wastewater is generated at the Site. Wastewater is limited to sanitary effluent.
Pits, Sumps or Lagoons	A storm water sump is located in the basement of Site Building E. No additional sumps, pits or lagoons were observed and none were reported by the Site Representative.
Grease Traps	None observed and none reported by the Site Representative.
Oil/Water Separators	None observed and none reported by the Site Representative.
Storm Water Flow and Receptor	The storm water entering exterior roof drains runs overland to percolate naturally through the soil.
Wells	None observed and none reported by the Site Representative.
Watercourses, Ditches or Standing Water	None observed and none reported by the Site Representative.

5.4 **Polychlorinated Biphenyls**

The use of PCBs as dielectric fluids in electrical equipment such as transformers, fluorescent lamp ballasts, and capacitors was common up to about 1980. The Federal PCB Regulations, SOR/2008-273, regulate the manufacture, import, export, sale, use and processing of PCBs. In addition, these regulations aim to eliminate the use of high level PCBs (greater than 500 milligrams per kilogram (mg/kg)), as well as low level PCBs (50-500 mg/kg) on or within 100 m of a "Sensitive Site" (e.g., drinking water treatment facility, feed/food processing plant, child care facility, schools, hospitals, etc.), by December 31, 2009.



Light ballasts, pole top transformers, and other electrical equipment with low level PCBs (50-500 mg/kg) in non-sensitive sites are aimed to be eliminated by December 31, 2025.

Given the years of construction of the Site Buildings (i.e., approximately 1890s and 1922), there is a potential that PCBs are present in on-Site electrical equipment. No pad or pole-mounted oil-cooled transformers were observed on-Site and none reported by Site Representative.

No hydraulic equipment was observed on-Site and none was reported.

Typical buildings of this age may contain PCBs in mastics, caulking and window putties. Testing for the presence of PCBs in these materials is beyond the scope of this Phase I ESA. The potential presence of PCBs in these materials could result in future costs if extensive renovation requiring removal of these materials or demolition activities are undertaken at the Site. The extent of such potential issues could not be assessed as part of this Phase I ESA.

5.5 Asbestos-Containing Materials

Asbestos-containing materials (ACMs) are commonly found in building construction materials (particularly in older buildings constructed prior to 1985). Friable asbestos (friable is defined as a material that can be crumbled, powdered or pulverized by hand pressure) was widely used in sprayed fireproofing until 1973, and in decorative or finishing plasters, and thermal systems insulation until the early 1980s. Non-friable or manufactured asbestos products were widely used in building construction including in vinyl floor tiles, sheet flooring, ceiling tiles, pipe gaskets, roofing materials, asbestos cement boards, and numerous other products until the mid-1980s. A very limited number of non-friable asbestos products in limited quantities are still in use currently in building construction. The application of friable asbestos was banned by Ontario Regulation 654/85, which came into effect March 1985. On November 1, 2005, this regulation was most recently updated and changed to Ontario Regulation 278/05.

Given the years of construction of the Site Buildings (i.e., approximately 1890s and 1922), there is a potential for friable and non-friable ACMs to be present in the Site Buildings. The following non-comprehensive list of building materials, as observed by Pinchin, has the potential to be ACMs:

- Vinyl floor tiles (12x12) (appeared in good condition) that were observed in the basements of the Site Buildings;
- Pipe insulation (appeared in poor to good condition) that was observed in various locations throughout the Site Buildings;
- Plaster wall finishes (appeared in poor to good condition) that was observed in various locations throughout the Site Buildings;



- Stucco ceiling finishes (appeared in poor to good condition) that were observed in various locations throughout the Site Buildings; and
- Transite boards that were observed in various locations throughout the Site Buildings.

Pinchin did not conduct an asbestos survey as part of this Phase I ESA, nor was any destructive or intrusive sampling or inspection conducted as part of this Phase I ESA. The Site Representative advised Pinchin that no asbestos surveys have been previously conducted at the Site, and that an Asbestos Management Program (AMP) has not been developed for or implemented at the Site. In accordance with Ontario Regulation 278/05, an asbestos survey should be performed in buildings that are known or suspected of containing ACMs. If an asbestos survey confirms the presence of ACMs, an AMP should be developed and implemented, as per the requirements of Ontario Regulation 278/05. The Site Representative advised Pinchin that an Asbestos Management Program (AMP) has not been developed for or implemented at the Site. In accordance with Ontario Regulation 278/05, an asbestos survey should be performed in buildings that are known or suspected of containing ACMs.

The potential presence of ACMs could result in management issues and future costs if renovation or demolition activities are undertaken at the Site. The extent of such potential issues could not be assessed as part of this Phase I ESA.

5.6 Lead-Containing Paints

Lead was commonly used as an additive in paints with no restricted level up until the mid-1970s. This included architectural paints used on interior and exterior surfaces, consumer paints, and paint on furniture and other household items. Beginning in 1976, the federal government limited the amount of lead in paints to 5,000 parts per million (ppm) and steadily reduced the lead content, primarily in the interest of public safety. The current limit set by the federal government is 90 ppm. In 1991, paint manufacturers initiated a voluntary program to limit lead in paint to 600 ppm, which is considered an action level by the provincial labour regulator; however, even today, there is no restriction on lead in paints used for anti-corrosion purposes (e.g., steel primers and exterior coatings) and road markings.

Given the years of construction of the Site Buildings (i.e., approximately 1890s and 1922), there is a potential for paints containing lead to be present in significant levels (i.e., greater than 600 ppm) on interior and exterior surfaces. Pinchin did not conduct a survey of lead in painted surfaces as part of this Phase I ESA, and the Site Representative advised Pinchin that no surveys have been previously conducted at the Site. During Pinchin's Site reconnaissance, painted surfaces (where observed), were in good condition (i.e., no peeling or flaking), with the exception of peeling and flaking painted surfaces throughout Site Buildings A, B and E.



Prior to any demolition or renovation activities, a designated substance (including lead) survey would be required.

5.7 Ozone-Depleting Substances

The bulk storage of ozone-depleting substances (ODSs) was not observed. The Site Representative reported that the bulk storage of ODSs has not been carried out at the Site.

Window-mounted A/C units, as well as residential refrigeration units, were observed within the Site Buildings. These units may include refrigerants, such as R22 or R12, that are noted within the phase-out schedules for elimination in both Provincial and Federal regulations. No other sources of ODSs were observed at the time of the Site reconnaissance.

5.8 Radon

Radon is a radioactive gas formed by naturally occurring radioactive breakdown of uranium in soil, rocks and even groundwater. Radon is invisible and odourless and, as such, cannot be detected by humans. Furthermore, radon escapes from the ground and mixes with outdoor air forming concentrations that are too low to be of concern; however, if radon enters a building the concentrations can accumulate to higher levels. Health Canada has developed guidelines for acceptable levels of radon in buildings and has indicated that radon levels should not exceed 200 Becquerel per cubic metre (Bq/m³); however, there are currently no regulations governing acceptable levels of radon within buildings, and no requirements for testing or mitigation if levels are found to exceed the current Health Canada guidelines. Testing for radon in the Site Buildings was beyond the scope of this Phase I ESA. The Site Representative reported that no radon surveys have been carried out at the Site.

5.9 Mould or Microbial Contamination

The presence of mould or other microbiological contamination in buildings has become a concern to building tenants and owners due to potential health effects on occupants and users. Provincial Ministries of Labour have recently issued guidelines on enforced regulations to protect the health of construction workers who are exposed to mould in the course of building renovation. The presence of water leaks or high humidity can cause the growth or amplification of mould within building environments.

A comprehensive inspection for mould, which would require intrusive testing, was not performed as part of this Phase I ESA. Suspect minor mould growth and water damage was observed in the bathroom areas of Site Buildings B and E, likely due to condensation and poor ventilation. The suspect mould growth and water damage was observed on gypsum board on the walls of the bathroom areas. The extent of the suspect mould growth and water damage within wall/ceiling cavities was not assessed as part of this Phase I ESA. Water damage/staining and suspect mould growth observed on gypsum board



should be removed/replaced in accordance with industry standards and routinely monitored for changes. In addition, consideration should be given to investigating and repairing the sources of the damage. The Site Representative was not aware of any historical leaks in the Site Buildings or past flooding events.

5.10 Air Emissions

Topic	Findings
Washroom Vents	Washroom vent exhausts are discharged through roof stacks.
Kitchen Vents	None observed and none reported by Site Representative.
Heating/Cooling	Site Buildings A- D and F: Natural gas-fired forced air furnaces and electric baseboards. Site Building E: Natural gas-fired boilers supplying hydronic radiators. Cooling is provided by window-mounted A/C units.
Emergency Generators	None observed and none reported by Site Representative.
Process Vents	None observed and none reported by Site Representative.
Odours	No strong, pungent or noxious odours were identified.
Permits / Approvals	The Site Representative advised Pinchin that Syndao Inc. does not hold any permits/approvals for the Site, as related to air emissions or discharges.

5.11 Staining and Stressed Vegetation

Pinchin notes that the ground surface was snow-covered at the time of the Site reconnaissance and therefore, a thorough assessment for staining/stressed vegetation could not be completed at the time of the Site reconnaissance.

No evidence of historical chemical discharges or releases (i.e., staining or stressed vegetation) was observed during the Site reconnaissance. The Site Representative reported that no known historical chemical spills have occurred on-Site.

5.12 Non-Hazardous Wastes

Topic	Findings
Non-hazardous Wastes	Domestic refuse is deposited in metal bins located at the rear of each Site Building, and removed for off-Site disposal on a weekly basis by the City of Ottawa.



Topic	Findings
Recyclables	Recyclables (i.e., cans, bottles, newsprint, plastics, and cardboard) are stored in plastic totes located at the rear of each Site Building and removed to an off-Site recycling facility weekly by the City of Ottawa.

6.0 ACTIVITIES ON ADJACENT PROPERTIES

The Site is located in an urban area that predominantly consists of institutional, residential and commercial lands uses. A description of the adjacent properties is summarized in the following table, based on Pinchin's observations from the Site and publicly accessible locations:

	North	East	South	West
Operation or Activity	Highway 417 followed by Raymond Street and an institutional building.	Arthur Lane South followed by single-family residential dwellings and Cambridge Street South.	Single-family residential dwellings followed by Plymouth Street and multi-tenant residential buildings.	Bell Street South followed by single-family residential dwellings and Lebreton Street South.
Direction with Respect to Inferred Groundwater Flow	Down/transgradient.	Up/transgradient.	Up/transgradient.	Down/transgradient.
Visible Emissions	None observed.	None observed.	None observed.	None observed.
Visible Outdoor Storage of Hazardous Materials	None observed.	None observed.	None observed.	None observed.

Based on Pinchin's observations of the adjacent properties, nothing was observed that is likely to result in potential subsurface impacts at the Site.

7.0 FINDINGS AND RECOMMENDATIONS

Based on the results of the Phase I ESA completed by Pinchin, the following could result in potential subsurface impacts at the Site:

- The OS database indicated that on November 26, 1989, 750-L of furnace oil was released onto the exterior ground surface at Site Building C due to an AST leak. Based



on the above-noted information, it is Pinchin's opinion that this historical spill has the potential to result in subsurface impacts at the Site.

Based on the findings noted above, Pinchin recommends completing a Phase II ESA at the Site.

Given the years of construction of the Site Buildings (i.e., approximately 1890s and 1922), there is a potential for friable and non-friable ACMs to be present in the Site Buildings. Pinchin did not conduct an asbestos survey as part of this Phase I ESA, nor was any destructive or intrusive sampling or inspection conducted as part of this Phase I ESA. The Site Representative advised Pinchin that no asbestos surveys have been previously conducted at the Site and that an AMP has not been developed for or implemented at the Site.

8.0 STANDARD LIMITATIONS

This Phase I ESA was performed in order to identify potential issues of environmental concern associated with the Site located at 269-279 Bell Street South, Ottawa, Ontario, at the time of the Site reconnaissance. This Phase I ESA was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site. This report was prepared for the exclusive use of Syndao Inc., subject to the conditions and limitations contained within the duly authorized work plan. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third parties. If additional parties require reliance on this report, written authorization from Pinchin will be required. Such reliance will only be provided by Pinchin following written authorization from Client. Pinchin disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranties are implied or expressed.

Pinchin will not be responsible for any consequential or indirect damages. Pinchin will only be liable for damages resulting from the negligence of Pinchin. Pinchin will not be liable for any losses or damage if the Client has failed, within a period of two year following the date upon which the claim is discovered (Claim Period), to commence legal proceedings against Pinchin to recover such losses or damage unless the laws of the jurisdiction which governs the Claim Period which is applicable to such claim provides that the applicable Claim Period is greater than two years and cannot be abridged by the contract between the Client and Pinchin, in which case the Claim Period shall be deemed to be extended by the shortest additional period which results in this provision being legally enforceable.

The information provided in this report is based upon analysis of available documents, records and drawings, and personal interviews. In evaluating the Site, Pinchin has relied in good faith on information provided by other individuals noted in this report. Pinchin has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information



8. Sharpe, D.R. "Quaternary Geology of Toronto and Surrounding Area; Ontario Geological Survey Preliminary Map P. 2204, Geological Series." Scale 1:100,000. Compiled 1980.
9. Fulton, R.J. "Surficial Materials of Canada, Geological Survey of Canada, Map 1880A". Scale 1:5,000,000. Compiled 1995.
10. Wheeler, J.C., Hoffman, P.F., Card, K.D., Davidson, A., Sanford, B.V., Okulitch, A.V., and Roest, W.R. "Geological Map of Canada, Geological Survey of Canada, Map 1860A". Scale 1:5,000,000. Compiled 1996.
11. Canadian Standards Association (CSA) Standard. *CSA Z768-01, Phase I Environmental Site Assessment*, Canadian Standards Association International, November 2001, reaffirmed in 2012.
12. National Air Photo Library, Ottawa, Ontario.
13. Library and Archives of Canada, Ottawa, Ontario.
14. Technical Standards & Safety Authority.
15. The City of Ottawa.
16. Ontario Ministry of the Environment and Climate Change.
17. MOECC Brownfields Environmental Site Registry.
18. Google Earth™ Satellite Imagery.
19. "Cross-Canada Survey of Radon Concentrations in Homes – Final Report", prepared by Health Canada and dated March 2012.

Template: Master Report for Ontario Phase I ESA, EDR, February 2, 2015