Geotechnical Engineering

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Phase I-Environmental Site Assessment

Vacant Lots – Blocks 1, 2 and 21
255 and 285 Mountshannon Drive
And 591 Longfields Drive
Ottawa, Ontario

Prepared For

Mattino Developments Inc.

March 27, 2019

Report: PE4589-1

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EXECUTIVE SUMMARY

Assessment

Paterson Group was retained by Mattino Developments Inc. to conduct a Phase I-Environmental Site Assessment (ESA) for the properties located at 255 and 285 Mountshannon Drive and 591 Longfields Drive, in the City of Ottawa, Ontario. The purpose of this Phase I-ESA was to research the past and current use of the subject site and the Phase I Study Area and to identify any environmental concerns with the potential to have impacted the Phase I Properties.

According to the historical research, the Phase I Properties have never been developed and were historically used for agricultural purposes. Historical land use of the neighbouring properties was for residential and agricultural purposes. No potentially contaminating activities were identified with the historical use of the subject site or surrounding lands.

Following the historical research, a site visit was conducted. The subject properties are currently vacant. No potential environmental concerns were noted with the current use of the Phase I Properties. Neighbouring properties in the Phase I Study Area consist of vacant lands, a residential subdivision with schools and a community centre and railway tracks. Railway tracks are considered a potentially contaminating activity, however, based on the nature of their use and distance from the subject site, they are not considered to represent an area of potential environmental concern. Therefore, no areas of potential environmental concern with respect to the Phase I Properties were identified.

Based on the results of the assessment, it is **our opinion that a Phase II-Environmental Site Assessment is not required for the subject properties.**

1.0 INTRODUCTION

At the request of Mattino Developments Inc., Paterson Group (Paterson) conducted a Phase I-Environmental Site Assessment (Phase I-ESA) for the properties located at 255 and 285 Mountshannon Drive (Blocks 1 and 2) and 591 Longfields Drive (Block 21), 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 properties.

Paterson was engaged to conduct this Phase I-ESA by Mr. Giuseppe Matteucci of Mattino Developments Inc. The head office is located at 171 Claridge Drive, Ottawa, Ontario. Mr. Matteucci can be reached by telephone at (613) 254-9643.

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 the requirements of Ontario Regulation (O.Reg.) 153/04, as amended, under the 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 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.

2.0 PHASE I PROPERTIES INFORMATION

Address:	255 and 285 Mountshannon Drive and 591 Longfields Drive, Ottawa, Ontario
Legal Description:	Blocks 1, 2 and 21 on Plan 4M1527, in the City of Ottawa
Location:	The site is located on the northwest side of Longfields Drive, where Mountshannon Drive transects with Longfields Drive, in the City of Ottawa, Ontario. Refer to Figure 1 - Key Plan in the Figures section following the text.
PIN:	14568-0589, 14568-0590 and 14568-0609
Latitude and Longitude:	45°17’ 13.78" N, 75° 44' 31.39" W

Site Description:

Configuration:	Irregular
Area:	15,000 m^2 (approximately)
Zoning:	R4A – Residential, 4th Density Zone
Current Use:	The subject site is currently vacant and undeveloped land.
Services:	The subject site is situated 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 properties, and if warranted, neighbouring properties;
- Present the results of our findings in a comprehensive report in general accordance with the requirements of O.Reg. 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 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

Based on an aerial photograph from 1945, the subject site has never been developed.

Fire Insurance Plans

Fire Insurance Plans (FIPs) are not available for the subject area.

City of Ottawa Street Directories

There are no city directories for the subject site and study area.

Chain of Title

Paterson did not request a Chain of Title for the subject site as it was determined that sufficient information was gathered from other sources, such as personal interviews, aerial photographs and previous engineering reports.

Previous Engineering Reports

Paterson Group has conducted environmental investigations in the immediate vicinity of the subject site. Based on a review of our files, no potential environmental concerns were identified on the subject site or neighbouring lands.

A geotechnical investigation was conducted for the subject site in 2013. Based on the subsurface investigation, no signs of environmental contamination or deleterious fill material were observed during the course of the investigation.

Survey Plan and Plan of Subdivision

A grading plan of the Phase I Properties prepared by Novatech Engineering was reviewed as part of this assessment.

4.2 Environmental Source Information

Environment Canada

A search of the National Pollutant Release Inventory (NPRI) was conducted electronically on March 22, 2019. 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.

Ministry of the Environment, Conservation and Parks (MECP) Instruments

A request was submitted to the MECP Freedom of Information (FOI) office for information with respect to certificates of approval, permits to take water, certificates of property use or any other similar MECP issued instruments for the site. At the time of issuing this report, a response had not been received from the MECP. A copy of the response will be forwarded to the client if it contains any pertinent information.

MECP Submissions

A request was submitted to the MECP FOI office for information with respect to reports related to environmental conditions for the properties. At the time of issuing this report, a response had not been received from the MECP. A copy of the response will be forwarded to the client if it contains any pertinent information.

MECP Incident Reports

A request was submitted to the MECP FOI office for information with respect to records concerning environmental incidents, orders, offences, spills, discharges of contaminants or inspections maintained by the MECP for the site or adjacent properties. At the time of issuing this report, a response had not been received from the MECP. A copy of the response will be forwarded to the client if it contains any pertinent information.

MECP Waste Management Records

A request was submitted to the MECP FOI office for information with respect to waste management records. At the time of issuing this report, a response had not been received from the MECP. A copy of the response will be forwarded to the client if it contains any pertinent information.

MECP 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 Municipal Coal Gasification Plant Sites are located within the Phase I Study Area.

MECP Brownfields Environmental Site Registry

A search of the MECP Brownfields Environmental Site Registry was conducted as part of this assessment for the site, neighbouring properties and the general area of the site. No Records of Site Condition (RSCs) were filed for the subject site or properties within the Phase I Study Area.

MECP 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. There are no former waste disposal sites located within 1 km of the Phase I 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 website of the Ontario Ministry of Natural Resources (MNR) on March 25, 2019. The search did not reveal areas of natural significance within the Phase I study area.

Technical Standards and Safety Authority (TSSA)

The TSSA, Fuels Safety Branch in Toronto was contacted electronically on March 25, 2019, to inquire about current and former underground storage tanks, spills and incidents for the site and neighbouring properties. No records are

listed in the TSSA registry for the subject site or the adjacent properties. 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. There are no closed landfill sites within the vicinity of the Phase I study area.

City of Ottawa Historical Land Use Inventory (HLUI)

A search of the City of Ottawa's Historical Land Use Inventory (HLUI) database was conducted as part of this assessment. At the time of issuance of this report, the HLUI search results had not been received. A copy of the HLUI request form is provided in Appendix 2.

4.3 Physical Setting Sources

Aerial Photographs

Historical air photos from the National Air Photo Library were reviewed in approximate ten (10) year intervals. Based on the review, the following

1945 The subject site and surrounding lands appear as agricultural lands at this time. Fallowfield Road and Woodroffe Avenue can be seen in this photograph as well as the railroad tracks that lie to the west of the site.

1953 The subject site and surrounding lands appear unchanged from the previous photograph.

1963 No significant changes are apparent on the subject site or surrounding lands.

1983 The subject site and surrounding lands to the northeast, east, and south appear as agricultural fields. A residential subdivision to the North/northwest is present at this time.

1996 No significant changes are apparent to the subject site. Surrounding lands to the northeast, south and southwest appear as vacant lands. Residential and community developments are present east and west of the subject site.

2005 The subject site remains unchanged from the previous photograph. More residential and community developments are present further south and west of the subject site.

2017 The northern portion of the site appears vacant with a stockpile present. The stockpile is expected to be excess soil from the initial phases of the site development. The remaining two portions of the site appear as vacant lots. Neighbouring lands to the north, east, south and west are occupied by residential dwellings, recreational fields and institutions.

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 down in a north-easterly direction towards the Rideau River. An illustration of the referenced topographic map is presented on Figure 2 – Topographic Map, appended to this report.

Physiographic Maps

The Ontario Geological Survey publication 'The Physiography of Southern Ontario, Third Edition' was reviewed as a part of this assessment. According to the publication, the site is situated within the Ottawa Clay Plain physiographic region.

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 consists of interbedded sandstone and dolomite, of the March Formation. The surficial geology in the area of the site consists of offshore marine sediments of clay and silt, with a drift thickness ranging from 5 to 10 m.

Water Well Records

A Well Record search was conducted on March 22, 2019 for all drilled wells within 250 m of the subject site. The well record search returned ten (10) well records, four (4) of which were identified as monitoring wells located outside of

the 250 m study area, three (3) domestic well records from 1975 and three (3) records of abandonment. Based on the new residential and community development in the area, these domestic wells are no longer in use. Copies of the well records have been included in Appendix 2.

Areas of Natural Significance and Water Bodies

No areas of natural significance or bodies of water were identified in the Phase I Study Area.

5.0 INTERVIEWS

Property Owner Representative

Mattino Developments Inc. was contacted via email as part of this assessment. The subject properties have always been vacant and undeveloped. Mattino Developments Inc. is not aware of any potential environmental concerns with respect to the subject or adjacent properties.

6.0 SITE RECONNAISSANCE

6.1 General Requirements

The site visit was conducted on March 25, 2019. Weather conditions were sunny with a temperature of approximately -8°C. Ms. Mandy Witteman from the Environmental Department of Paterson conducted the site assessment. 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 visit.

6.2 Specific Observations at the Phase I Properties

Site Features

The subject properties are vacant and undeveloped land. At the time of the visit, the ground surface was covered in snow.

Site drainage consists primarily of infiltration. The site topography appeared to be at grade with the adjacent roadways.

The regional topography slopes down in an easterly direction towards the Rideau River.

No underground utilities were noted on-site. No drains or private sewage systems were observed on the subject properties at the time of the site visit. No evidence of current or former railway or spur lines was observed on the subject properties at the time of the site visit. No areas of stained snow or unidentified substances were observed on-site at this time.

Buildings and Structures

There are no buildings or structures present on the Phase I Properties.

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 255 Mountshannon Drive (Block 2) was as follows:

- North - Residential, followed by Boulder Way;
- South - Mattino Way, followed by vacant land (Block 1);
- East - Mountshannon Drive, followed by a Community Centre and parkland;
- West - Residential, followed by Mattino Way.

Land use adjacent to the 285 Mountshannon Drive (Block 1) was as follows:

- North - Mattino Way, followed by vacant land (Block 2);
- South - Longfields Drive, followed by vacant land;
- East - Mountshannon Drive, followed by a Community Centre and parkland;
- West - Elementary School, followed by Residential.

Land use adjacent to the 591 Longfields Drive (Block 21) was as follows:

- North - Vacant land, followed by residential (northeast) and transit way (northwest);
- South - Mattino Way, followed by residential;
- East - Vacant land and residential, followed by Longfields Drive;
- West - Transit way, followed by railway tracks.

The current use of the immediately adjacent properties is not considered to pose an environmental concern to the Phase I Properties. The railway tracks situated 55 m west of Block 21 represents a potentially contaminating activity (PCA), however, they are not considered to represent an area of potential environmental concern (APEC) on the subject site. Current land use in the Phase I Study Area is illustrated on Drawing PE4589-2 – Surrounding Land Use Plan in the Figures section of this report.

7.0 REVIEW AND EVALUATION OF INFORMATION

7.1 Land Use History

Based on the available historical records, the Phase I Properties have never been developed. No potential environmental concerns were noted with the historical and current land use of the subject properties.

Potentially Contaminating Activities and Areas of Potential Environmental Concern

No potentially contaminating activities (PCAs)) were identified on the Phase I Properties. The railway tracks to the west of Block 21 were identified as a PCA within the Phase I Study Area. Based on the nature of the tracks and their distance from the site, the railway line is not considered to represent an area of potential environmental concern (APEC) on the Phase I Property.

Contaminants of Potential Concern

No Contaminants of Potential Concern (CPCs) were identified on the subject site.

7.2 Conceptual Site Model

Geological and Hydrogeological Setting

Based on the information from the Geological Survey of Canada, the overburden in the area consists of offshore marine sediments of clay and silt, with a drift thickness ranging from 5 to 10 m. Bedrock in the area consists of interbedded sandstone and dolomite, of the March Formation.

Groundwater flow is interpreted to be in an easterly direction towards the Rideau River.

Existing Buildings and Structures

There are no buildings or structures on the Phase I Properties.

Water Bodies and Areas of Natural Significance

No areas of natural significance or water bodies were identified on the Phase I Properties or within the Phase I Study Area.

Drinking Water Wells

There are no potable water wells on the subject site. Four (4) domestic well records were identified as well as their respective abandonment records.

Neighbouring Land Use

Neighbouring land use in the Phase I Study Area consists of vacant land, a residential subdivision with institutional and community centre as well as the transit way and railway tracks.

Potentially Contaminating Activities and Areas of Potential Environmental Concern

As per Section 7.1 of this report, one PCA (railway tracks) was identified within the Phase I Study Area; however, as discussed previously, it does not represent an area of potential environmental concern to the Phase I Properties.

Contaminants of Potential Concern

As per Section 7.1 of this report, no Contaminants of Potential Concern (CPCs) were identified on the Phase I Properties.

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 no APECs on the Phase I Properties. A variety of independent sources were consulted as part of this assessment, 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

Assessment

Paterson Group was retained by Mattino Developments Inc. to conduct a Phase I-Environmental Site Assessment (ESA) for the properties located at 255 and 285 Mountshannon Drive and 591 Longfields Drive, in the City of Ottawa, Ontario. The purpose of this Phase I-ESA was to research the past and current use of the subject site and the Phase I Study Area and to identify any environmental concerns with the potential to have impacted the Phase I Properties.

According to the historical research, the Phase I Properties have never been developed and were historically used for agricultural purposes. Historical land use of the neighbouring properties was for residential and agricultural purposes. No potentially contaminating activities were identified with the historical use of the subject site or surrounding lands.

Following the historical research, a site visit was conducted. The subject properties are currently vacant. No potential environmental concerns were noted with the current use of the Phase I Properties. Neighbouring properties in the Phase I Study Area consist of vacant lands, a residential subdivision with schools and a community centre and railway tracks. Railway tracks are considered a potentially contaminating activity, however, based on the nature of their use and distance from the subject site, they are not considered to represent an area of potential environmental concern. Therefore, no areas of potential environmental concern with respect to the Phase I Properties were identified.

Based on the results of the assessment, it is **our opinion that a Phase II-Environmental Site Assessment is not required for the subject properties.**

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, 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.

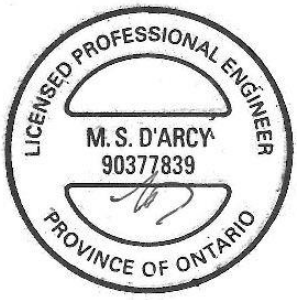
Should any conditions be encountered at the subject site and/or historical information that differ from our findings, we request that we be notified immediately in order to allow for a reassessment.

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

Paterson Group Inc.

Mandy Witteman, M.A.Sc.

Mark S. D'Arcy, P.Eng.



Report Distribution:

- ❑ Mattino Developments Inc.
- ❑ Paterson Group

10.0 REFERENCES

Federal Records
Air photos at the Energy Mines and Resources Air Photo Library.
National Archives.
Maps and photographs (Geological Survey of Canada surficial and subsurface mapping).
Natural Resources Canada – The Atlas of Canada.
Environment Canada, National Pollutant Release Inventory.
PCB Waste Storage Site Inventory.

Provincial Records
MECP Freedom of Information and Privacy Office.
MECP Municipal Coal Gasification Plant Site Inventory, 1991.
MECP document titled “Waste Disposal Site Inventory in Ontario”.
MECP Brownfields Environmental Site Registry.
Office of Technical Standards and Safety Authority, Fuels Safety Branch.
MNR Areas of Natural Significance.
MECP Water Well Record Inventory.
Chapman, L.J., and Putnam, D.F., 1984: ‘The Physiography of Southern Ontario, Third Edition’, Ontario Geological Survey Special Volume 2.

Municipal Records
City of Ottawa Document “Old Landfill Management Strategy, Phase I - Identification of Sites.”, prepared by Golder Associates, 2004.
Intera Technologies Limited Report “Mapping and Assessment of Former Industrial Sites, City of Ottawa”, 1988.
geoOttawa: City of Ottawa electronic mapping website.
City of Ottawa Historical Land Use Inventory (HLUI) Database

Local Information Sources
Personal Interviews.

Public Information Sources
Google Earth.
Google Maps/Street View.

FIGURES

FIGURE 1 – KEY PLAN

FIGURE 2 – TOPOGRAPHIC MAP

DRAWING PE4589-1 – SITE PLAN

DRAWING PE4589-2 – SURROUNDING LAND USE PLAN

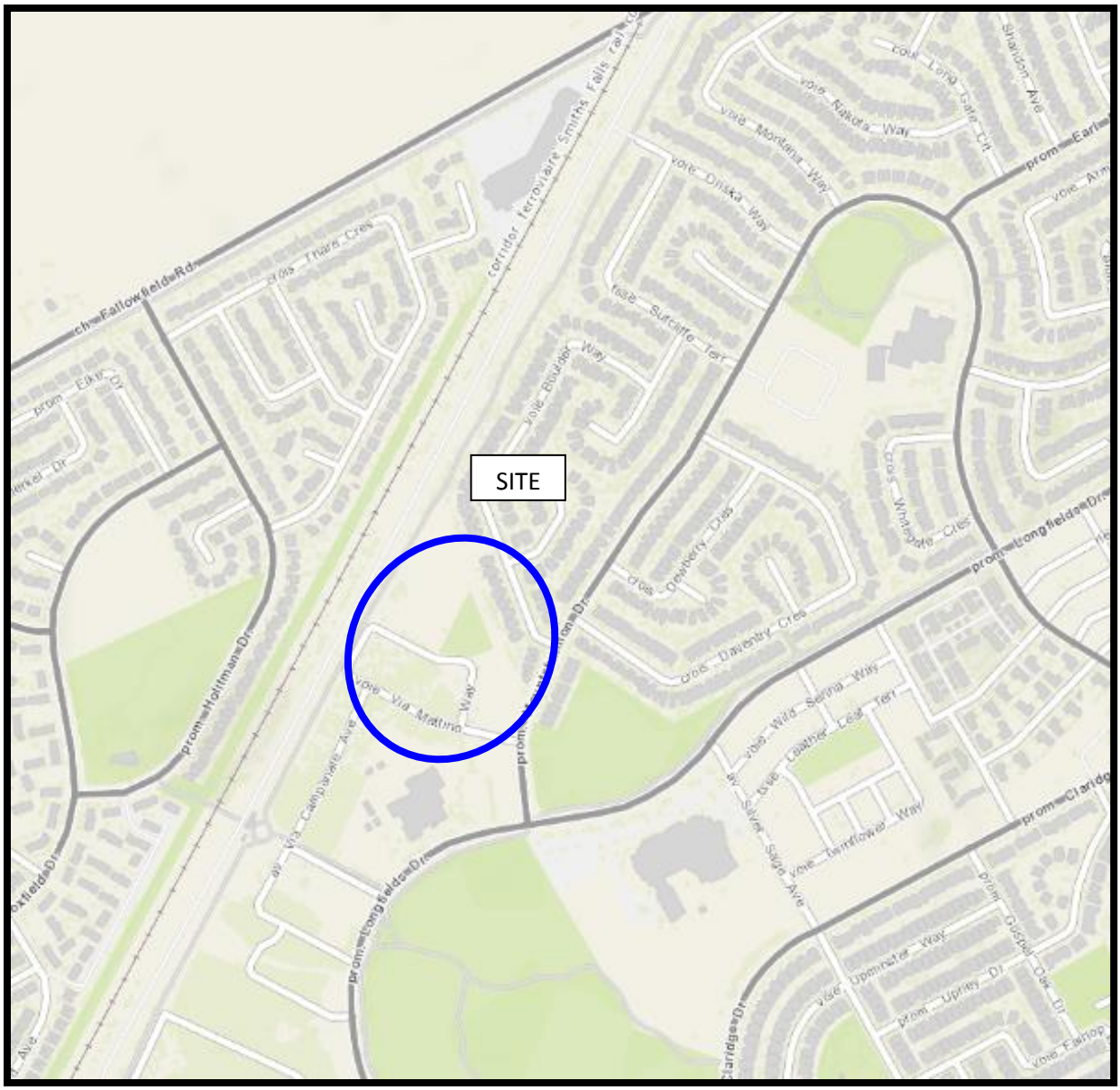


FIGURE 1

KEY PLAN

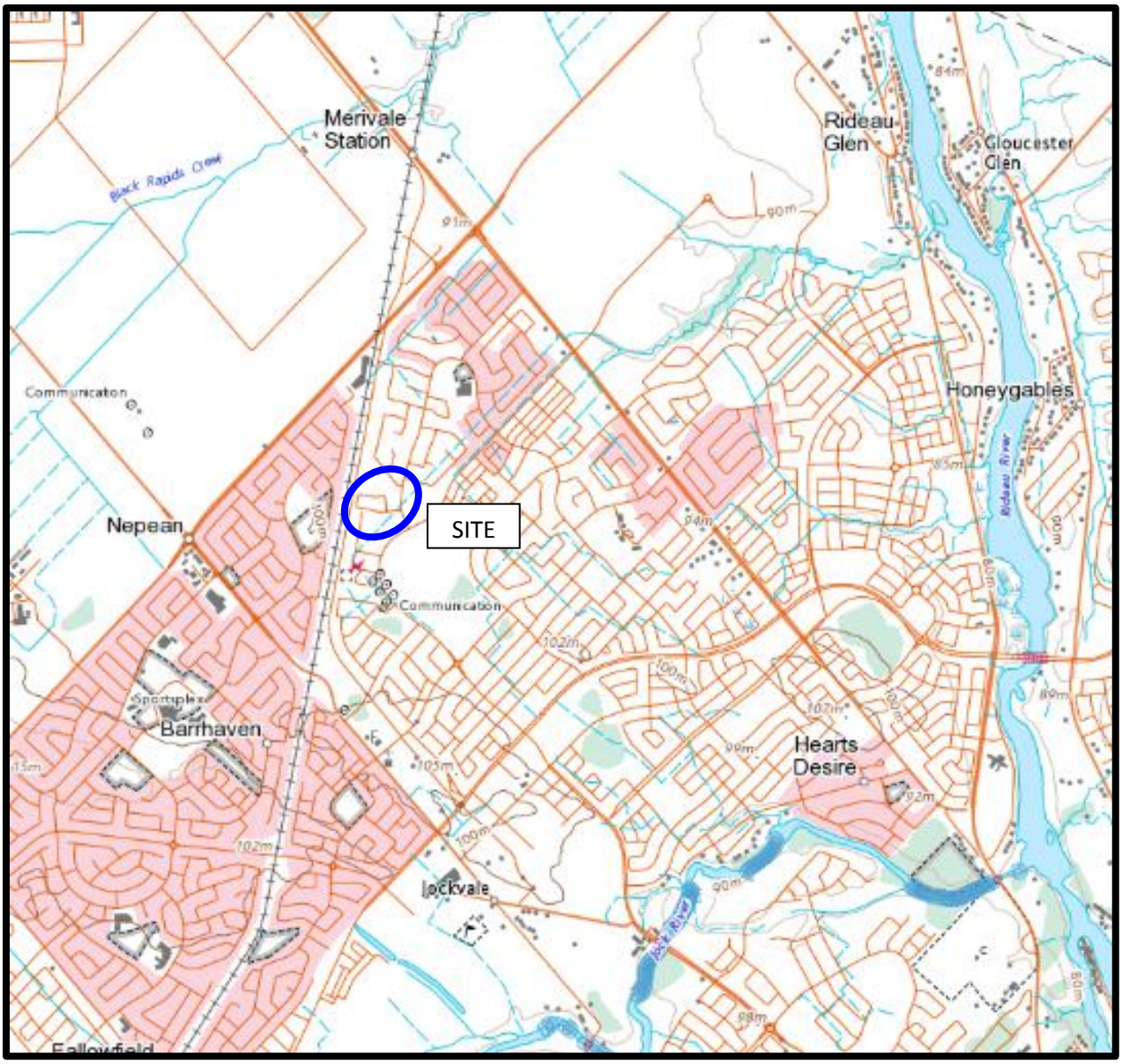
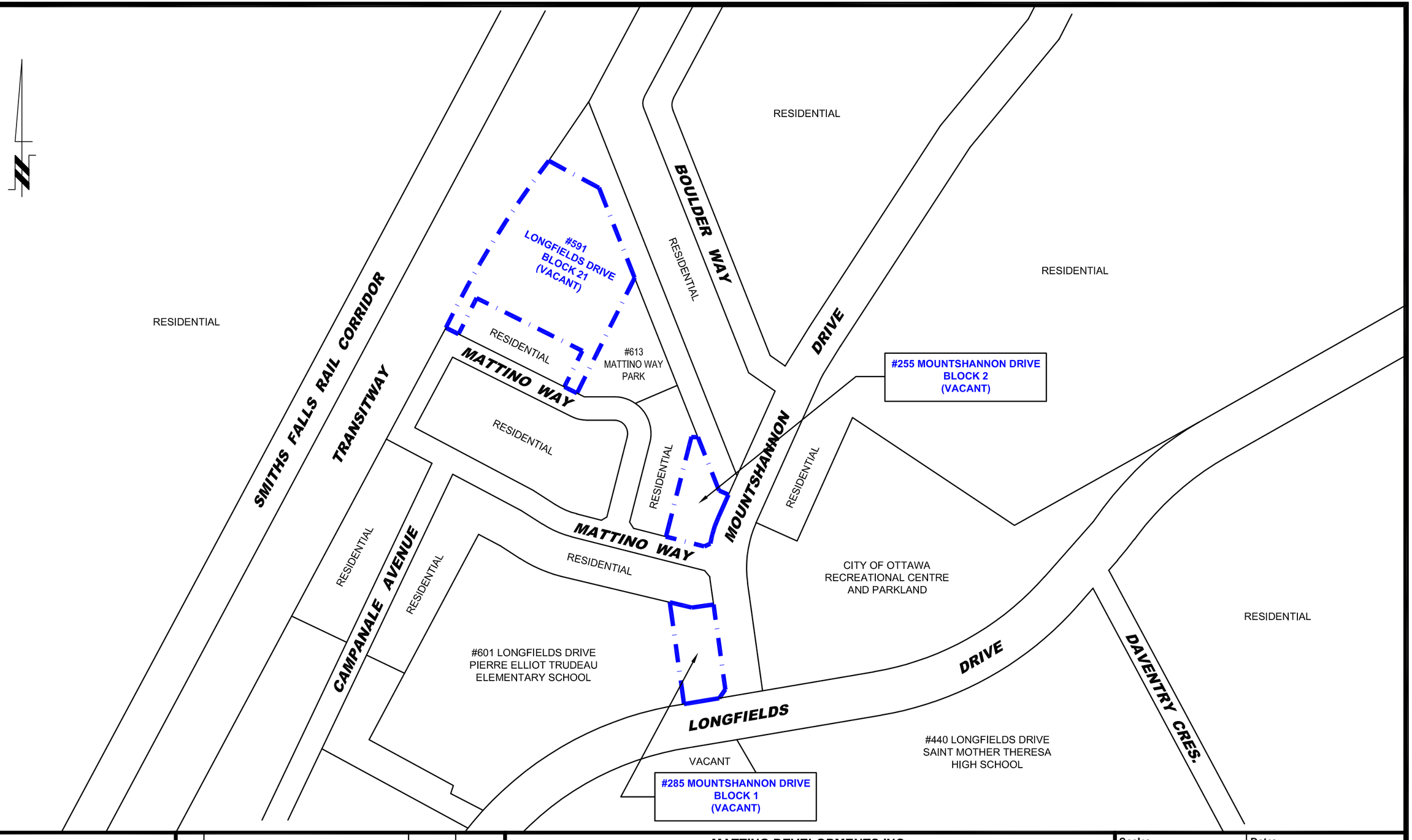


FIGURE 2

TOPOGRAPHIC MAP



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NO.	REVISIONS	DATE	INITIAL

MATTINO DEVELOPMENTS INC.

PHASE I - ENVIRONMENTAL SITE ASSESSMENT
255 & 285 MOUNTSHANNON DRIVE AND 591 LONGFIELDS DRIVE

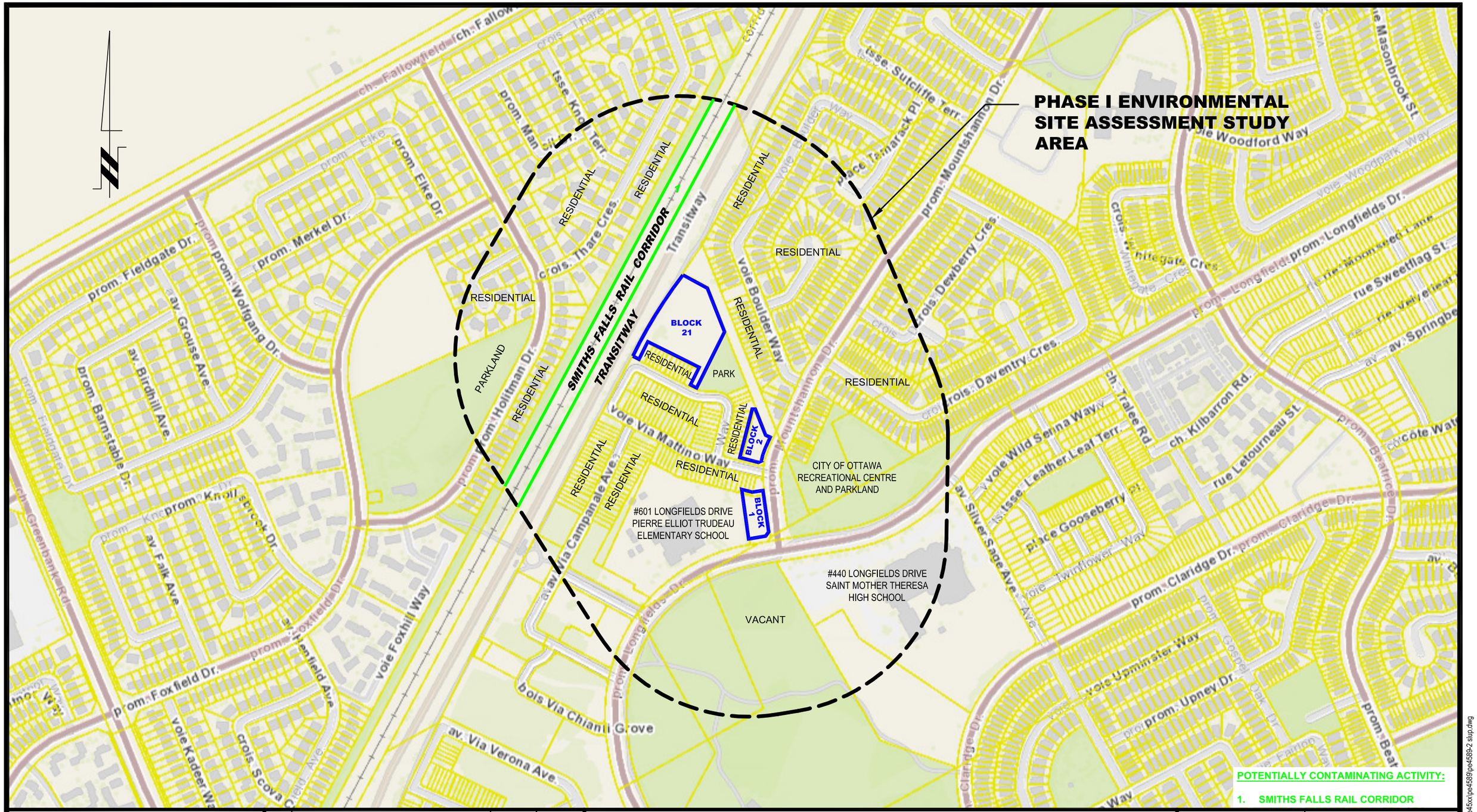
OTTAWA, ONTARIO

Title:

SITE PLAN

Scale: 1:2500	Date: 03/2019
Drawn by: MPG	Report No.: PE4589-1
Checked by: MW	PE4589-1
Approved by: MSD	Revision No.:

p:\autocad drawings\environmental\pe4589\pe4589-1 site plan.dwg



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NO.	REVISIONS	DATE	INITIAL

MATTINO DEVELOPMENTS INC.

PHASE I - ENVIRONMENTAL SITE ASSESSMENT
255 & 285 MOUNTSHANNON DRIVE AND 591 LONGFIELDS DRIVE
OTTAWA, ONTARIO

Title:

SURROUNDING LAND USE PLAN

Scale: 1:5000	Date: 03/2019
Drawn by: MPG	Report No.: PE4589-1
Checked by: MW	PE4589-2
Approved by: MSD	Revision No.:

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APPENDIX 1

AERIAL PHOTOGRAPHS

SITE PHOTOGRAPHS

AERIAL PHOTOGRAPH
1945

AERIAL PHOTOGRAPH
1953

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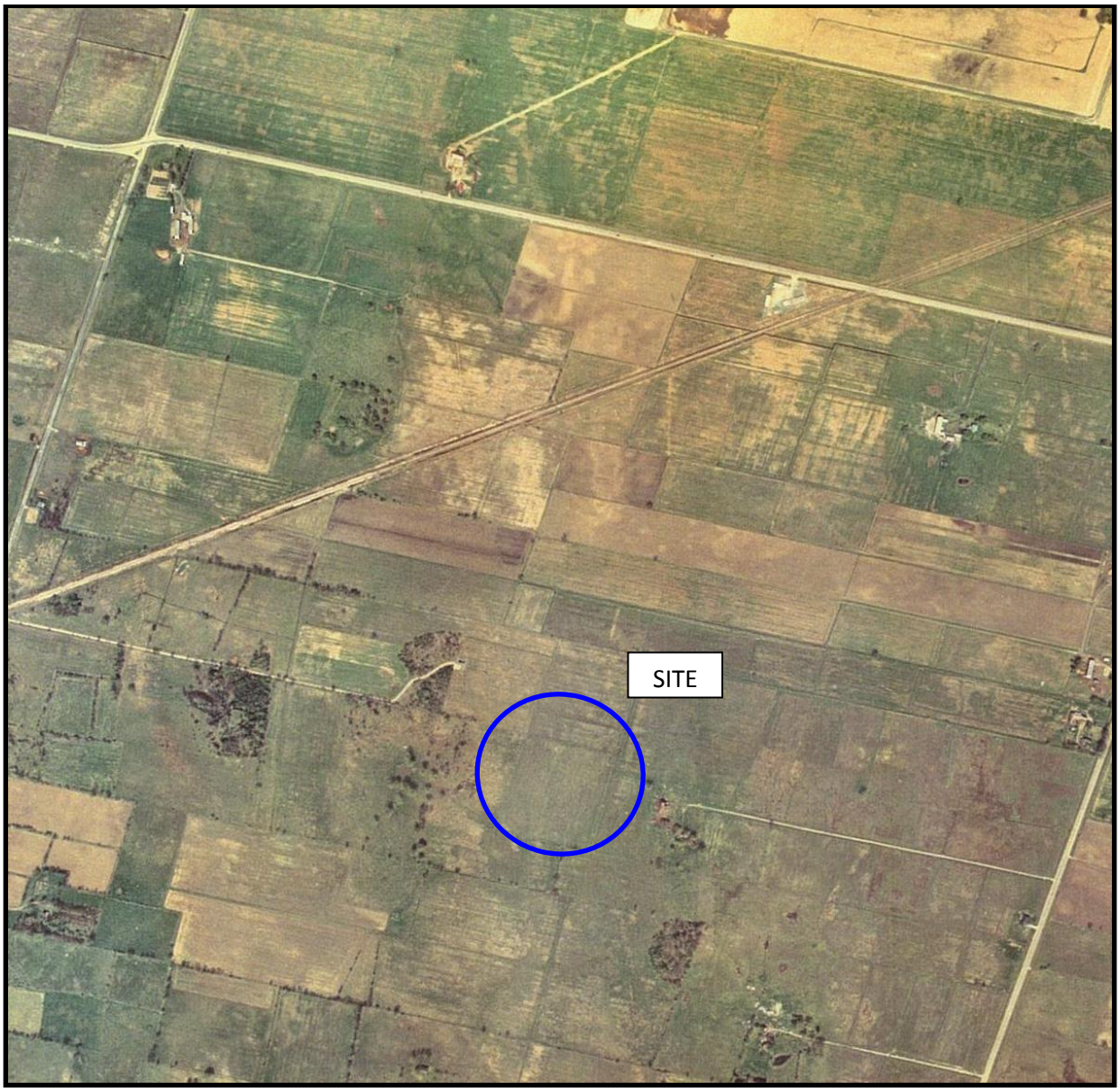
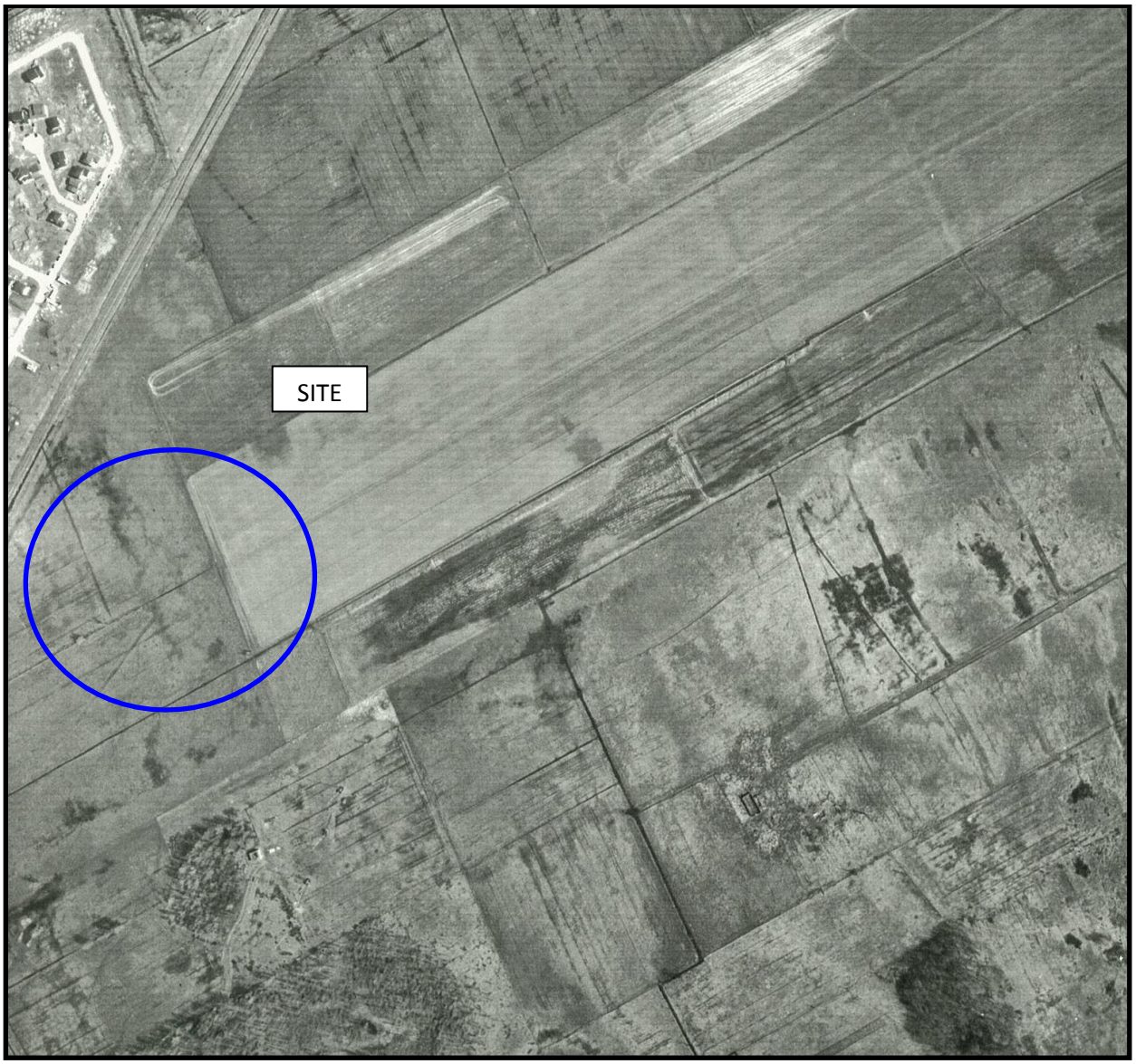


AERIAL PHOTOGRAPH
1963

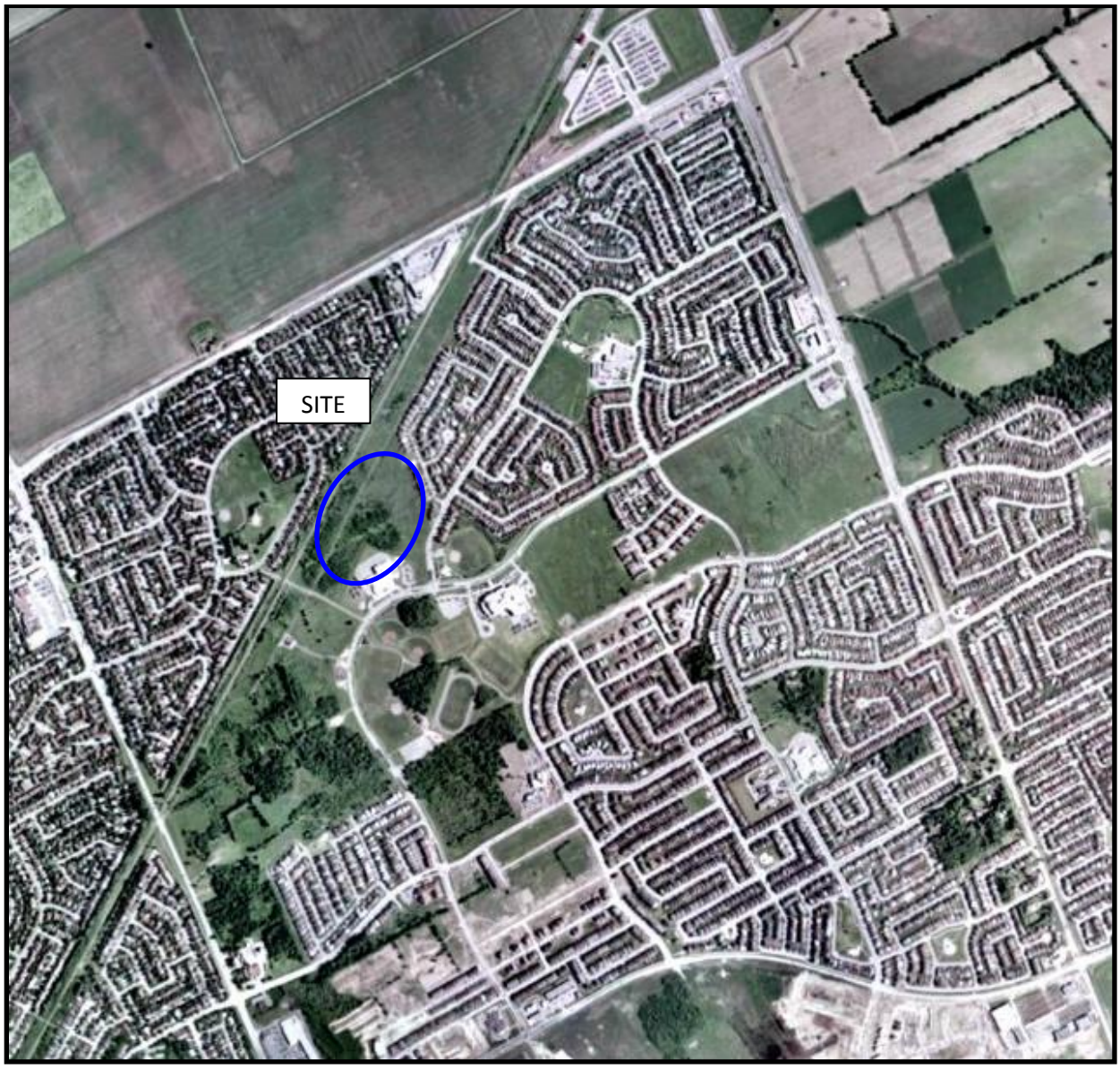
patersongroup



AERIAL PHOTOGRAPH
1983

patersongroup

AERIAL PHOTOGRAPH
1996



AERIAL PHOTOGRAPH
2005

AERIAL PHOTOGRAPH
2017

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Site Photographs

PE4589 255 and 285 Mountshannon Drive, and 591 Longfields Drive, Ottawa, ON

March 25, 2019

Photograph 1. View of 285 Mountshannon Drive (Block 1), taken from Mountshannon Drive, looking west.

Photograph 2: View of255 Mountshannon Drive (Block 1), taken from the northeast property boundary, looking southwest.

Photograph 3: View of 591 Longfields Drive (Block 21), taken from the western property boundary, looking northeast.

Photograph 4: View of 591 Longfields Drive (Block 21), taken from the western property boundary, looking east.

APPENDIX 2

MECP FREEDOM OF INFORMATION

TSSA CORRESPONDENCE

HLUI RESPONSE

MECP WELL RECORDS

Ontario Ministry of Environment and Energy

Freedom of Information Request

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

Requester Data

Name, Company Name, Mailing Address and Email Address of Requester

Mandy Witteman
Paterson Group Inc.
154 Colonnade Road
Ottawa, ON K2E 7J5
Email address: mwitteman@patersongroup.ca

Telephone/Fax Nos.
Tel. 613-226-7381
Fax 613-226-6344

Your Project/Reference No.
PE-45xx

Signature/Print Name of Requester
Mandy Witteman

For Ministry Use Only

FOI Request No.

Date Request Received

Fee Paid
☐ ACCT ☐ CHQ ☐ VISA/MC ☐ CASH

☐ CNR ☐ ER ☐ NOR ☐ SWR ☐ WCR
☐ SAC ☐ IEB ☐ EAA ☐ EMR ☐ SWA

Request Parameters

Municipal Address / Lot, Concession, Geographic Township **(Municipal address essential for cities, towns or regions)**

571 Mattino Way (Block 21), 255 + 285 Mountsharrow Dr., Ottawa, ON (This is one site/project + one owner),

Present Property Owner(s) and Date(s) of Ownership

Mattino Developments Inc.

Previous Property Owner(s) and Date(s) of Ownership

Present/Previous Tenant(s) (if applicable)

Search Parameters *Files older than 2 years may require $60.00 retrieval cost. There is no guarantee that records responsive to your request will be located.*	**Specify Year(s) Requested**
Environmental concerns (General correspondence, occurrence reports, abatement)	all
Orders	all
Spills	all
Investigations/prosecutions ➤ Owner AND tenant information must be provided	all
Waste Generator number/classes	all

Certificates of Approval ➤ Proponent information must be provided

1985 and prior records are searched manually. **Search fees in excess of $300.00** could be incurred, depending on the types and years to be searched. Specify Certificates of Approval number(s) (if known). **If supporting documents are also required, mark SD box** and specify type e.g. maps, plans, reports, etc.

	SD	**Specify Year(s) Requested**
air - *emissions*		1986-present
water - *mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster)*		1986-present
sewage - *sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations*		1986-present
waste water - *industrial discharges*		1986-present
waste sites - *disposal, landfill sites, transfer stations, processing sites, incinerator sites*		1986-present
waste systems - *PCB destruction, mobile waste processing units, haulers: sewage, non-hazardous & hazardous waste*		1986-present
pesticides - *licenses*		1986-present

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

Mandy Witteman

From: Public Information Services <publicinformationservices@tssa.org>
Sent: March-25-19 9:37 AM
To: Mandy Witteman
Subject: RE: Records Search Request (PE4589)

Thank you for your inquiry.

We have no record in our database of any fuel storage tanks at the subject address (addresses).

For a further search in our archives please complete our release of public information form found at https://www.tssa.org/en/about-tssa/release-of-public-information.aspx?_mid_=392 and email the completed form to publicinformationservices@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.

Although TSSA believes the information provided pursuant to your request is accurate, please note that TSSA does not warrant this information in any way whatsoever.

Thank you and have a great day,

Roxana

Roxana Mashtaler | Public Information Agent
Facilities
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1-416-734-3472 | Fax: +1-416-231-6183 | E-Mail: rmashtaler@tssa.org
www.tssa.org

From: Mandy Witteman <MWitteman@Patersongroup.ca>
Sent: March 25, 2019 9:07 AM
To: Public Information Services <publicinformationservices@tssa.org>
Subject: Records Search Request (PE4589)

Good Morning,

Could you please complete a search of your records for **underground/aboveground storage tanks, historical spills or other incidents/infractions** for the following addresses in Ottawa (Cumberland), ON:

Mountshannon Drive: 255, 285
Longfields Drive: 601, 400, 625, 600
Foxfield Dr: 70,

Thank you.

Cheers,

Mandy Witteman

patersongroup
Solution Oriented Engineering

154 Colonnade Road South
Ottawa - Ontario - K2E 7J5
Tel: (613) 226-7381
Fax: (613) 226-6344
Cell: (403)-921-1157
Email: mwitteman@patersongroup.ca

March 25, 2019
File: PE4589-HLUI

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

Subject: **Authorization Letter, HLUI Search**
Phase I-Environmental Site Assessment
255 and 285 Mountshannon Drive and 591 Longsfield Drive, Ottawa, Ontario

Dear Sir,

Please consider this letter as confirmation that Paterson Group has been retained 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: Matthews Developments Inc.

Name of Representative/Owner G. Matteucci

Signature of Representative/Owner

Date March 25, 2019

Well ID Number: 7278712
Well Audit Number: *Z220185*
Well Tag Number:

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

Well Location

Address of Well Location	124 HOLITMAN DR
Township	NEPEAN TOWNSHIP
Lot	020
Concession	RF 02
County/District/Municipality	OTTAWA-CARLETON
City/Town/Village	NEPEAN
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 18 Easting: 441279.00 Northing: 5015039.00
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
.8 m	4.9 m	BENTONITE GROUT	
.8 m	4.9 m	ABANDONMENT	

Method of Construction & Well Use

Method of Construction	Well Use
	Not Used

Status of Well

Abandoned-Other

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
5 cm	OTHER	.8 m	4.9 m

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 4875

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?	Y

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
.8 m	4.9 m	5 cm

Audit Number: Z220185

Date Well Completed: October 13, 2016

Date Well Record Received by MOE: January 10, 2017

Updated: March 7, 2019
Rate Rate
Share facebook twitter Print
Tags

MINISTRY OF THE ENVIRONMENT

...ne Ontario Water Resources Act

...ER WELL RECORD

31G/5b

Ontario

...N SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 1514575 | MUNICIP. 15008 | CON. RF | 02

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
[redacted]	None	~~TW#1~~ 2RF	019

[redacted] Box 4218 Station "E" Ottawa, Ont. K1S 5A7 — DATE COMPLETED: DAY 21 MO. 02 YR. 75

...NING	RC	ELEVATION	RC	BASIN CODE	II	III	IV
1514575 18	441290	5014849	4	322	4	26	JUN 28, 1977	300

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	clay			0	17
	clay	sand gravel, boulders		17	22
	bedrock	limestone		22	27.8
brown	limestone			27.8	38
	limestone	sandstone		38	44
	sandstone	limestone streaks		44	50
	limestone	sandstone streaks		50	62
white	sandstone	limestone streaks		62	75
	limestone	sandstone streaks		75	81
white	sandstone			81	83
	limestone	sandstone streaks		83	88
white	sandstone			88	91

31 | 0017 05 | 0022 0528 11 | 0028 26 15 | 0038 15 | 0044 15 18 | 0050 18 74 | 1

32 | 0062 15 18 74 | 0075 ~~18~~ 15 74 | 0081 15 18 74 | 0083 11 18 | 0088 15 18 74 | 0091 11 18

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0030	1 ☒ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
~~10 1/2~~ X	~~1~~ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE ~~4 ☒ OPEN HOLE~~	240	0	~~20.0~~ 0029
10	~~1~~ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE ~~4 ☒ OPEN HOLE~~		~~20.0~~	~~350~~
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			
10				0250
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER — PUMPING RATE: 0202 GPM — DURATION OF PUMPING: 48 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☐ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
020 FEET	~~NOT TESTED~~	FEET	FEET	FEET	FEET

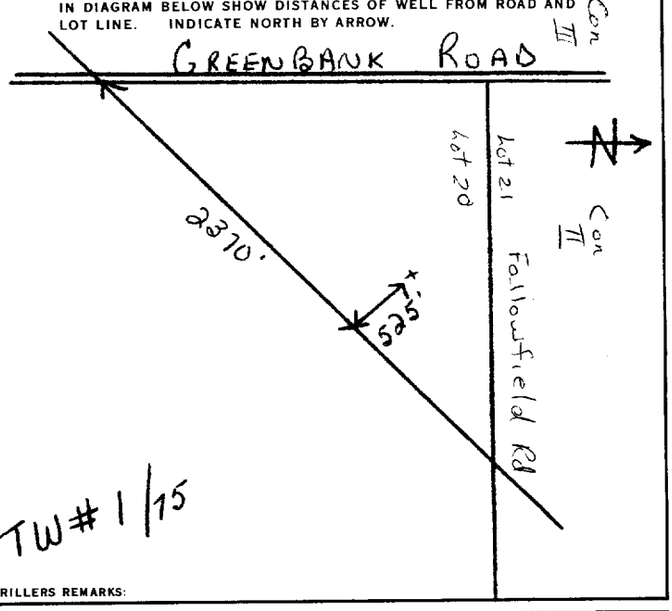
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	50 FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	050 FEET	~~MAX~~ 0300 GPM

GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 4/14

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL 54: 1 ☒ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED

WATER USE 55-56: 06 — 1 ☐ DOMESTIC; 2 ☐ STOCK; 3 ☐ IRRIGATION; 4 ☐ INDUSTRIAL; ☐ OTHER; 5 ☐ COMMERCIAL; 6 ☒ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED

METHOD OF DRILLING 57: 4 — 1 ☐ CABLE TOOL; 2 ☐ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☒ ROTARY (AIR); 5 ☐ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Capital Water Supply Ltd. — LICENCE NUMBER: 1558

ADDRESS: Box 490 Stittsville, Ont. K0A 3G0

NAME OF DRILLER OR BORER: M. Hamilton & D. McDougall — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Walter Savanagh — SUBMISSION DATE: DAY 26 MO. 2 YR. 75

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 1558 — DATE RECEIVED 63-68: 110375

DATE OF INSPECTION: June 17, 1976 — INSPECTOR: A Chentney

REMARKS: Page 1 of 2

P ~~CAP~~

WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 MOE 07-091

MINISTRY OF THE ENVIRONMENT
The Ontario Water Resources Act

Batch 300

WATER WELL RECORD

Page 2 of 14575

Ontario

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 SEE PAGE 1.

MUNICIP. CON.

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
[redacted]	Nepean	~~NE~~ 3RF	19

[redacted] Box 4218 Station "E" Ottawa, Ontario

DATE COMPLETED: DAY 21 MO. 2 YR. 75

ING RC. ELEVATION RC. BASIN CODE I II III IV

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
CONT'	limestone			91	95
white	sandstone			95	108
	sandstone	limestone streaks		108	124
	limestone	sandstone streaks		124	165
	sandstone	limestone streaks		165	183
	sandstone	~~183~~		183	201
	sandstone			201	208
	sandstone	limestone streaks		208	212
white	sandstone			212	214
	sandstone	limestone streaks		214	226
	sandstone			226	250

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-13 ~~30~~	~~1 ☐ FRESH~~ 3 ☐ SULPHUR 14 / 2 ☐ SALTY 4 ☐ MINERAL
15-18	1 ☐ FRESH 3 ☐ SULPHUR 19 / 2 ☐ SALTY 4 ☐ MINERAL
20-23	1 ☐ FRESH 3 ☐ SULPHUR 24 / 2 ☐ SALTY 4 ☐ MINERAL
25-28	1 ☐ FRESH 3 ☐ SULPHUR 29 / 2 ☐ SALTY 4 ☐ MINERAL
30-33	1 ☐ FRESH 3 ☐ SULPHUR 34 80 / 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
10-11	1 ☐ STEEL 12 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			13-16
17-18	1 ☐ STEEL 19 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			20-23
24-25	1 ☐ STEEL 26 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			27-30

SCREEN

SIZE(S) OF OPENING (SLOT NO.) 31-33	DIAMETER 34-38 INCHES	LENGTH 39-40 FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN 41-44 FEET	80

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	14-17	
18-21	22-25	
26-29	30-33 80	

71 PUMPING TEST

PUMPING TEST METHOD 10	PUMPING RATE 11-14	DURATION OF PUMPING
1 ~~☒~~ PUMP 2 ☐ BAILER	~~202~~ GPM	~~40~~ 15-16 HOURS ~~[redacted]~~ 17-18 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	25 WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
19-21 ~~20~~ FEET	22-24 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	26-28 FEET	29-31 FEET	32-34 FEET	35-37 FEET

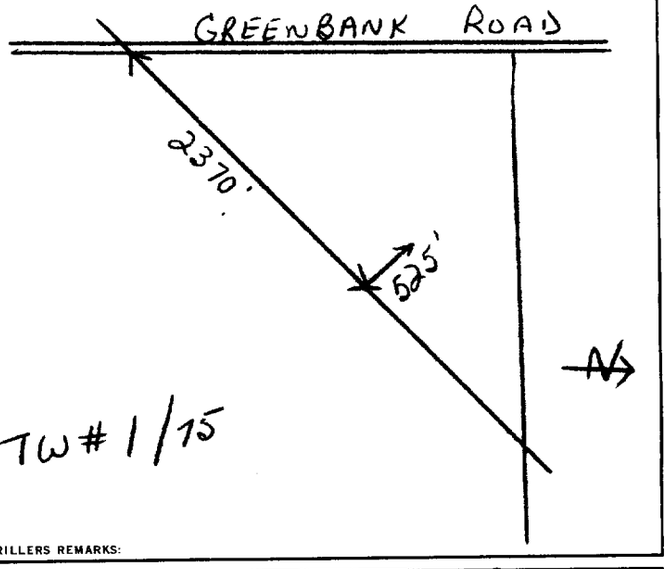
IF FLOWING, GIVE RATE 38-41 GPM	PUMP INTAKE SET AT FEET	WATER AT END OF TEST 42
		1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED ~~MAX~~ PUMPING RATE 46-49
☐ SHALLOW ☒ DEEP	~~40~~ 45 ~~50~~ FEET	~~300~~ GPM

50-53 ~~1.8~~ GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



TW# 1/15

DRILLERS REMARKS:

FINAL STATUS OF WELL 54

1 ~~☒~~ WATER SUPPLY 5 ☐ ABANDONED, INSUFFICIENT SUPPLY
2 ☐ OBSERVATION WELL 6 ☐ ABANDONED, POOR QUALITY
3 ☐ TEST HOLE 7 ☐ UNFINISHED
4 ☐ RECHARGE WELL

WATER USE 55-56

1 ☐ DOMESTIC 5 ☐ COMMERCIAL
2 ☐ STOCK 6 ~~☒~~ MUNICIPAL
3 ☐ IRRIGATION 7 ☐ PUBLIC SUPPLY
4 ☐ INDUSTRIAL 8 ☐ COOLING OR AIR CONDITIONING
☐ OTHER 9 ☐ NOT USED

METHOD OF DRILLING 57

1 ☐ CABLE TOOL 6 ☐ BORING
2 ☐ ROTARY (CONVENTIONAL) 7 ☐ DIAMOND
3 ☐ ROTARY (REVERSE) 8 ☐ JETTING
4 ~~☒~~ ROTARY (AIR) 9 ☐ DRIVING
5 ☐ AIR PERCUSSION

CONTRACTOR

NAME OF WELL CONTRACTOR: Capital Water Supply Ltd. LICENCE NUMBER: ~~1556~~

ADDRESS: Box 490 Stittsville, Ontario

NAME OF DRILLER OR BORER: M. Hamilton & D. McDougall LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Walter Kawanagh SUBMISSION DATE: DAY 26 MO. 2 YR. 75

OFFICE USE ONLY

DATA SOURCE 58 | CONTRACTOR 59-62 | DATE RECEIVED 1 10375 63-68 80

DATE OF INSPECTION: June 17/76 | INSPECTOR: A.E. Kentner

REMARKS: Page 2 of 2

P OP

WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 MOE 07-091

Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below): A023058 (A023058)

Well Record

Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

MUN | CON | LOT

[redacted]

Address of Well Location (County/District/Municipality): OTTAWA-CARLETON | Township: NEPEAN | Lot: 18 | Concession: 2

RR#/Street Number/Name: #100 LONGFIELDS DRIVE | City/Town/Village: NEPEAN | Site/Compartment/Block/Tract etc.:

GPS Reading: NAD 83 | Zone: 18 | Easting: 447715 | Northing: 5014616 | Unit Make/Model: MAGELLAN | Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To
	CLAY			0	3.35
	GRAVEL SAND			3.35	11.88
	GREY SANDSTONE			11.88	54.25
	GREY PINK GRANITE			54.25	61.87

CTN PLUMBING — SEE ATTACHED

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)
0	13.87	31.12
13.87	61.87	20.3

Water Record

Water found at Metres / Kind of Water

- 54.25 m: ☒ Fresh ☐ Salty ☐ Sulphur ☐ Minerals ☐ Gas ☐ Other — NOT TESTED
- 57.30 m: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals ☐ Gas ☐ Other — NOT TESTED
- ___ m: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals ☐ Gas ☐ Other:

After test of well yield, water was: ☐ Clear and sediment free ☐ Other, specify — NOT TESTED

Chlorinated: ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
21.90	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	.48	0	14.32
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☒ Open hole		13.71	61.87

Test of Well Yield

Pumping test method: SubPump	Draw Down Time (min)	Draw Down Water Level (Metres)	Recovery Time (min)	Recovery Water Level (Metres)
Pump intake set at - (metres)	Static Level	1.0		30.5
Pumping rate - (litres/min)	1		1	18.9
Duration of pumping 3 hrs 0 min	2		2	13.9
Final water level end of pumping 30.5 metres	3		3	10.1
Recommended pump type: ☐ Shallow ☒ Deep	4		4	7.4
Recommended pump depth: 57.91 metres	5		5	5.5
Recommended pump rate. (litres/min)	10		10	2.7
	15		15	2.4
If flowing give rate - (litres/min)	20		20	2.3
	25		25	
If pumping discontinued, give reason.	30	8.9	~~35~~	2.3
	~~45~~ 40	17.9	40	
	50		50	1.8
	60	18.8	60	

Plugging and Sealing Record

☒ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
13.71	0	NEAT CEMENT SLURRY	.8172

Method of Construction

☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging
☐ Rotary (conventional) ☒ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

Water Use

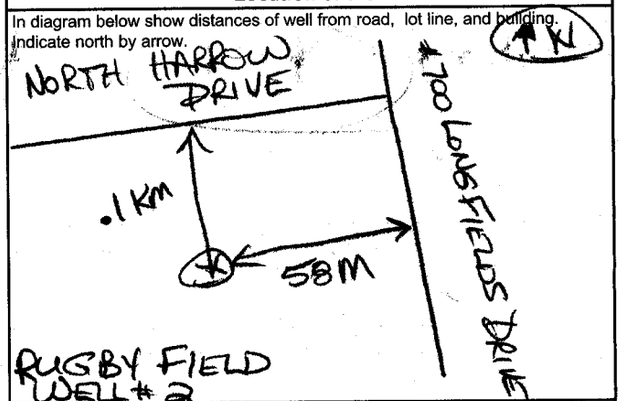
☐ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☒ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

☒ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other)
☐ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

Location of Well

In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.



Well Contractor/Technician Information

Name of Well Contractor: AIR ROCK DRILLING CO LTD | Well Contractor's Licence No.: 7119

Business Address (street name, number, city etc.): RR#1 RICHMOND ONT K0A2Z0

Name of Well Technician (last name, first name): PURCELL SHANNON | Well Technician's Licence No.: T2122

Signature of Technician/Contractor: X [signature] | Date Submitted: 2005 05 04

Audit No.: Z 23173 | Date Well Completed: 2005 08 04

Was the well owner's information package delivered? ☐ Yes ☒ No | Date Delivered

Ministry Use Only

Data Source | Contractor: 1119

Date Received: OCT 12 2005 | Date of Inspection

Remarks | Well Record Number

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☒ Well Owner's Copy ☐ *Cette formule est disponible en français*

well tag # A023058

Well for the rugby field (new irrigation system)

Flow USGPM	Time, min	Measured Level, in	Measured Le
0.0	0	38.4	1.0
N/A*	15	N/A	N/A
41.0	30	350.4	8.9
61.3	45	704.4	17.9
60.5	60	741.6	18.8
80.0	75	782.4	19.9
81.5	90	1332.0	33.8
81.5	105	1684.8	42.8
60.0	120	1227.6	31.2
60.5	135	1226.4	31.2
61.0	150	1231.2	31.3
60.5	165	1202.4	30.5
60.5	180	1200.0	30.5

*Flow meter. problem couldn't retest without risking going over 50 000L

After pumping (recovery)

Time elapsed	Measured Level in the well	
min	in	meters
1	744.0	18.9
2	546.0	13.9
3	396.0	10.1
4	291.6	7.4
5	216.0	5.5
10	106.8	2.7
15	96.0	2.4
20	90.0	2.3
35	90.0	2.3
50	69.6	1.8
80	To come	
110	To come	

OCT 1 2 2005 Z23173 1119

Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below) A023059 A023059

Well Record

Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
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- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

MUN | CON | LOT

Well Owner's Information and Location of Well Information

[redacted]

OTTAWA-CARLETON NEPEAN 18 9

RR#/Street Number/Name #700 LONGFIELDS DRIVE | City/Town/Village NEPEAN | Site/Compartment/Block/Tract etc.

GPS Reading NAD 83 | Zone 18 | Easting 441808 | Northing 5014580 | Unit Make/Model MAGELLAN | Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
	SAND, GRAVEL	BOULDERS		0	11.88
	LIMESTONE			11.88	15.54
	SANDSTONE			15.54	51.20

SEE ATTACHED

Hole Diameter

Depth From	Metres To	Diameter Centimetres
0	13.2	31.12
13.2	51.20	20.3

Water Record

Water found at - Metres / Kind of Water

15.2 m	☐ Fresh	☐ Sulphur	☐ Gas
☐ Salty	☐ Minerals	☐ Other NOT TESTED	
23.46 m	☐ Fresh	☐ Sulphur	☐ Gas
☐ Salty	☐ Minerals	☐ Other NOT TESTED	
50.29 m	☐ Fresh	☐ Sulphur	☐ Gas
☐ Salty	☐ Minerals	☐ Other NOT TESTED	

After test of well yield, water was ☐ Clear and sediment free ☐ Other, specify CLOUDY - NOT TESTED

Chlorinated ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
21.90	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	.48	0	13.71
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☒ Open hole		13.10	51.20

Test of Well Yield

Pumping test method: SUBPUMP

	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Pump intake set at - (metres)	Static Level	4.2		7.3
Pumping rate - (litres/min)	1		1	5.6
Duration of pumping 3 hrs 0 min	2		2	5.3
Final water level end of pumping 7.3 metres	3		3	5.2
Recommended pump type. ☐ Shallow ☒ Deep	4		4	5.1
Recommended pump depth 45.72 metres	5		5	5.0
Recommended pump rate. (litres/min)	10		10	4.8
	15	5.0	15	4.7
If flowing give rate - (litres/min)	20		20	4.6
	25		25	
If pumping discontinued, give reason. 45	30	5.7	~~30~~ 35	4.5
	~~40~~ 45	6.4	40	
	50		50	4.5
	60	6.8	60	

G.N. Plumbing

Plugging and Sealing Record

☒ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
13.10	0	NEAT CEMENT SLURRY	.4086

Method of Construction

☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging
☐ Rotary (conventional) ☒ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

Water Use

☐ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☒ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

☒ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other)
☐ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

Well Contractor/Technician Information

Name of Well Contractor: AIR ROCK DRILLING CO LTD | Well Contractor's Licence No.: 1119

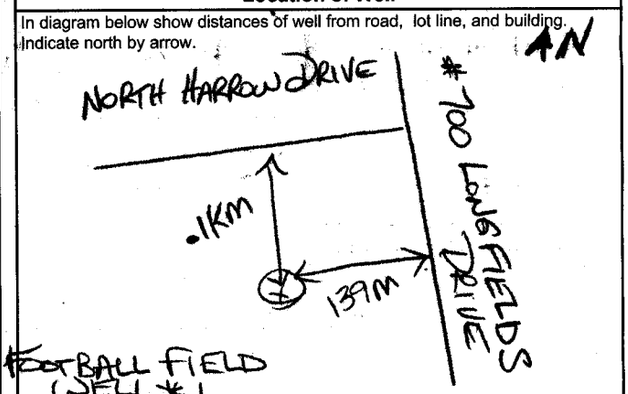
Business Address (street name, number, city etc.): RR#1 RICHMOND, ONT K0A 2Z0

Name of Well Technician (last name, first name): PURCELL SHANNON | Well Technician's Licence No.: 1022

Signature of Technician/Contractor: x [signature] | Date Submitted: 2005 OCT 04

Location of Well

In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.



Audit No. Z 23172 | Date Well Completed 2005 OCT 05

Was the well owner's information package delivered? ☐ Yes ☒ No | Date Delivered

Ministry Use Only

Data Source | Contractor 1119

Date Received OCT 12 2005 | Date of Inspection

Remarks | Well Record Number

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☒ Well Owner's Copy ☐ *Cette formule est disponible en français*

Well tag A023059

Well for the existing irrigation system

Flow USGPM	Time, min	Measured Level, in	Measured Level, m
0.0	0	164.4	4.2
22.0	15	196.8	5.0
39.7	30	223.2	5.7
60.6	45	252.0	6.4
80.0	60	268.8	6.8
80.0	75	273.6	6.9
80.0	90	277.2	7.0
80.0	105	279.6	7.1
80.0	120	282.0	7.2
80.0	135	284.4	7.2
80.0	150	284.4	7.2
80.0	165	286.8	7.3
80.0	180	286.0	7.3

After pumping (recovery)

Time elapsed	Measured Level in the well	
min	in	meters
1	220.8	5.6
2	208.8	5.3
3	205.2	5.2
4	200.4	5.1
5	196.8	5.0
10	187.2	4.8
15	184.8	4.7
20	182.4	4.6
35	177.6	4.5
50	175.2	4.5
80	172.8	4.4
110	172.8	4.4

OCT 12 2005 Z 23172 1119

Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below) N/A

Well Record

Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

MUN | CON | LOT

Well Owner's Information and Location of Well Information

[redacted]

OTTAWA - CARLETON | NEPEAN | 18 | Q

RR#/Street Number/Name: #700 LONGFIELDS DRIVE | City/Town/Village: NEPEAN | Site/Compartment/Block/Tract etc.

GPS Reading: NAD 83 | Zone: 18 | Easting: 441802 | Northing: 5014571 | Unit Make/Model: MAGELLAN | Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
	WELL ABANDONMENT			0	17.68

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)

Water Record

Water found at ___ Metres / Kind of Water

- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

After test of well yield, water was ☐ Clear and sediment free ☐ Other, specify

Chlorinated ☐ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☒ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		

No Casing or Screen

☐ Open hole

Test of Well Yield

Pumping test method	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Pump intake set at - (metres)	Static Level			
Pumping rate - (litres/min)	1		1	
Duration of pumping ___hrs +___ min	2		2	
Final water level end of pumping ___metres	3		3	
Recommended pump type. ☐ Shallow ☐ Deep	4		4	
Recommended pump depth ___metres	5		5	
Recommended pump rate. (litres/min)	10		10	
	15		15	
If flowing give rate - (litres/min)	20		20	
	25		25	
If pumping discontinued, give reason.	30		30	
	40		40	
	50		50	
	60		60	

Plugging and Sealing Record

☐ Annular space ☒ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
17.68	0.61	HOLE PLUG	
0.61	0	NEAT CEMENT SLURRY	

Method of Construction

☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging
☐ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

Water Use

☐ Domestic ☐ Industrial ☐ Public Supply ☐ er
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

☐ Water Supply ☐ Recharge well ☐ Unfinished ☒ Abandoned, (Other) POOR QUALITY
☐ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

Well Contractor/Technician Information

Name of Well Contractor: AIR ROCK DRILLING CO LTD | Well Contractor's Licence No.: 7119

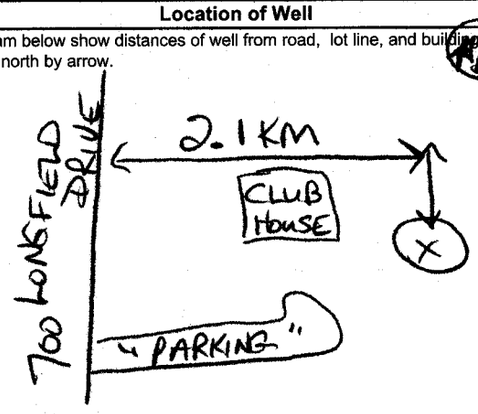
Business Address (street name, number) city etc.: RR#1 RICHMOND ONT K0A2Z0

Name of Well Technician (last name, first name): DESAULNIERS KEN | Well Technician's Licence No.: 7 4

Signature of Technician/Contractor: x [signature] | Date Submitted YYYY MM DD: 2005 10 05

Location of Well

In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.



Audit No. Z 23361 | Date Well Completed YYYY MM DD: 2005 09 13

Was the well owner's information package delivered? ☐ Yes ☒ No | Date Delivered YYYY MM DD

Ministry Use Only

Data Source | Contractor: 1119

Date Received: OCT 25 2005 | Date of Inspection YYYY MM DD

Remarks | Well Record Number

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☒ Well Owner's Copy ☐ *Cette formule est disponible en français*

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)*

AC19093 BH8B A019093

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 2

[redacted]

Address of Well Location (Street Number/Name, RR): 3684 Fallowfield Road

Township | Lot | Concession

County/District/Municipality | City/Town/Village: Ottawa. | Province: Ontario | Postal Code

UTM Coordinates NAD 83 | Zone 18 | Easting 449995 | Northing 5015428 | GPS Unit Make: Garmin | Model: Etrex | Mode of Operation: ☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
Grey	Gravel Fill		Coarse grained	0	0.1
Grey	Sand Fill		Med grained	0.1	2.4
Brown	Sand + Gravel silt		Coarse grained	2.4	4.3
Grey	Limestone (weathered)			4.3	7.9

Hole Details

Depth (Metres) From	Depth (Metres) To	Diameter (Centimetres)
0	4.3	20
4.3	7.9	10

Water Use

☐ Public ☐ Industrial ☐ Not used ☐ Other, *specify*
☐ Domestic ☐ Commercial ☑ Dewatering
☐ Livestock ☐ Municipal ☑ Monitoring
☐ Irrigation ☐ Test Hole ☐ Cooling & Air Conditioning

Method of Construction

☐ Cable Tool ☐ Air Percussion ☐ Digging
☐ Rotary (Conventional) ☑ Diamond ☐ Boring
☐ Rotary (Reverse) ☐ Jetting ☑ Other, *specify* HSA
☐ Rotary (Air) ☐ Driving

Status of Well

☑ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, *specify*
☐ Alteration (Construction) ☐ Abandoned, other, *specify*

Construction Details

Inside Diameter (Centimetres)	Material (steel, plastic, fibreglass, concrete, galvanized)	Wall Thickness	Depth (Metres) From	Depth (Metres) To
5.1	PVC	sched 40	0	4.6

No Casing and Screen Used

Open Hole ☐ Yes ☑ No

Static Water Level Test

[ ][ ] Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☑ Plastic

Outside Diameter (Centimetres): 5.8 | Slot No.: 10

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	Depth Set at (Metres) To	Type of Sealant Used (Material and Type)	Volume Used (Cubic Metres)
0	4.3	Bentonite	88 Kgs

Water Details

Water found at Depth	Kind of Water
[ ][ ] Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
[ ][ ] Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
[ ][ ] Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Disinfected ☐ Yes ☑ No If no, provide reason: Monitoring Wells

Date Master Well Completed (yyyy/mm/dd): 2009/04/08

Cluster Information ***(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)***

Total Wells in Cluster: 4

Total Wells on this Property: unknown

Please indicate Number of Cluster Well Information Log Sheets Submitted: 1

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.

☑ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

[redacted]

Well Contractor and Well Technician Information

Business Name of Well Contractor: George Downing Estate Drilling | Well Contractor's Licence No.: 1844

Business Address (Street No./Name, number, RR): 410 Rue Principale | Municipality: Grenville-sur-la-Rouge

Province: QC | Postal Code: J0V1B0 | Business E-mail Address: downing@hawk.igs.net

Bus. Telephone No. (inc. area code): 8192426469 | Name of Well Technician (Last Name, First Name): Downing Bruce

Well Technician's Licence No.: 2173 | Signature of Technician | Date Submitted (yyyy/mm/dd): 2009/04/27

Ministry Use Only

Audit No.: M 04460 | Well Contractor No.:

Date Received (yyyy/mm/dd): MAY 20 2009 | Date of Inspection (yyyy/mm/dd):

Remarks:

1992 (11/2006)

Ministry's Copy

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)* A019093

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

[redacted]

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
3684 Fallowfield Road				

City/Town/Village	Province	Postal Code	GPS Unit Make	Model	Unit Mode of Operation	
Ottawa	Ontario		Garmin	Etrex	☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify:	

upon request

Signature of Technician/Contractor: Bruce Downing — Date (yyyy/mm/dd): 2009/04/27

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
BH 1	18	441020	5015411	6.3	20/10	HSA/DIA	PVC	3.2	3.2	6.3	Bentonite				2009/04/07.
BH 2	18	441031	5015437	4.4	20/10	HSA/DIA	"	3.0	3.0	4.1	"				2009/04/07.
BH 8A	18	441999	5015428	4.3	20	HSA	"	1.2	1.2	4.3	"				2009/04/08

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
George Downing Estate Drilling Ltd.	410 Rue Principale	Grenville Sur La Rouge	QC.

Postal Code	Business Telephone No. (incl. area code)	Well Contractor's Licence No.	Business E-mail Address
J0V 1B0	819 242 6449	1844	downing@hawk.igs.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Date Submitted (yyyy/mm/dd)	Signature of Technician
Bruce Downing.	2173	2009/04/27.	Bruce Downing

Date 1st Well in Cluster Constructed (yyyy/mm/dd)	Date Last Well in Cluster Constructed (yyyy/mm/dd)
2009/04/07	2009/04/08.

Ministry Use Only

Date Received (yyyy/mm/dd)	Date Inspected (yyyy/mm/dd)
	MAY 20 2009
Audit No. C05166	Remarks M04460

1991 (11/2006)

Ministry's Copy

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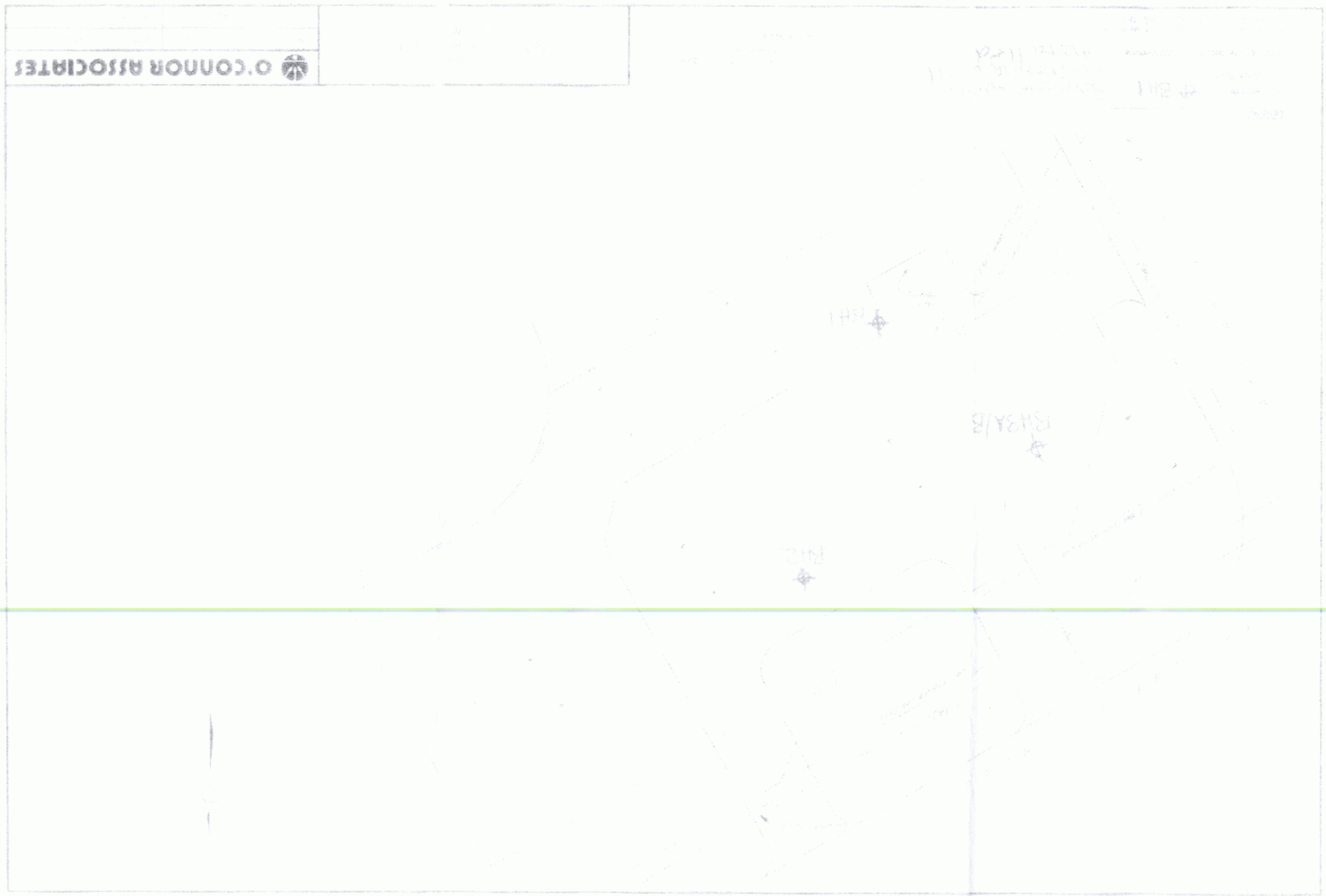


Ontario Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)*

AC19093 BH8B A019093

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Page 1 of 2

[redacted]

Address of Well Location (Street Number/Name, RR): 3684 Fallowfield Road

Township | Lot | Concession

County/District/Municipality | City/Town/Village: Ottawa. | Province: Ontario | Postal Code

UTM Coordinates NAD 83 | Zone 18 | Easting 449995 | Northing 5015428 | GPS Unit Make: Garmin | Model: Etrex | Mode of Operation: ☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
Grey	Gravel Fill		Coarse grained	0	0.1
Grey	Sand Fill		Med grained	0.1	2.4
Brown	Sand + Gravel silt		Coarse grained	2.4	4.3
Grey	Limestone (weathered)			4.3	7.9

Hole Details

Depth (Metres) From	Depth (Metres) To	Diameter (Centimetres)
0	4.3	20
4.3	7.9	10

Water Use

☐ Public ☐ Industrial ☐ Not used ☐ Other, *specify*
☐ Domestic ☐ Commercial ☑ Dewatering
☐ Livestock ☐ Municipal ☑ Monitoring
☐ Irrigation ☐ Test Hole ☐ Cooling & Air Conditioning

Method of Construction

☐ Cable Tool ☐ Air Percussion ☐ Digging
☐ Rotary (Conventional) ☑ Diamond ☐ Boring
☐ Rotary (Reverse) ☐ Jetting ☑ Other, *specify* HSA
☐ Rotary (Air) ☐ Driving

Status of Well

☑ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, *specify*
☐ Alteration (Construction) ☐ Abandoned, other, *specify*

Construction Details

Inside Diameter (Centimetres)	Material (steel, plastic, fibreglass, concrete, galvanized)	Wall Thickness	Depth (Metres) From	Depth (Metres) To
5.1	PVC	sched 40	0	4.6

No Casing and Screen Used

Open Hole ☐ Yes ☑ No

Static Water Level Test

[ ][ ] Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☑ Plastic

Outside Diameter (Centimetres): 5.8 | Slot No.: 10

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	Depth Set at (Metres) To	Type of Sealant Used (Material and Type)	Volume Used (Cubic Metres)
0	4.3	Bentonite	88 Kgs

Water Details

Water found at Depth	Kind of Water
[ ][ ] Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
[ ][ ] Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
[ ][ ] Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Disinfected ☐ Yes ☑ No If no, provide reason: Monitoring Wells

Date Master Well Completed (yyyy/mm/dd): 2009/04/08

Cluster Information ***(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)***

Total Wells in Cluster: 4

Total Wells on this Property: unknown

Please indicate Number of Cluster Well Information Log Sheets Submitted: 1

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.

☑ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

[redacted]

Well Contractor and Well Technician Information

Business Name of Well Contractor: George Downing Estate Drilling | Well Contractor's Licence No.: 1844

Business Address (Street No./Name, number, RR): 410 Rue Principale | Municipality: Grenville-sur-la-Rouge

Province: QC | Postal Code: J0V1B0 | Business E-mail Address: downing@hawk.igs.net

Bus. Telephone No. (inc. area code): 8192426469 | Name of Well Technician (Last Name, First Name): Downing Bruce

Well Technician's Licence No.: 2173 | Signature of Technician | Date Submitted (yyyy/mm/dd): 2009/04/27

Ministry Use Only

Audit No.: M 04460 | Well Contractor No.:

Date Received (yyyy/mm/dd): MAY 20 2009 | Date of Inspection (yyyy/mm/dd):

Remarks:

1992 (11/2006)

Ministry's Copy

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)* A019093

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

[redacted]

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
3684 Fallowfield Road				

City/Town/Village	Province	Postal Code	GPS Unit Make	Model	Unit Mode of Operation	
Ottawa	Ontario		Garmin	Etrex	☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify:	

upon request

Signature of Technician/Contractor: Bruce Downing — Date (yyyy/mm/dd): 2009/04/27

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
BH 1	18	441020	5015411	6.3	20/10	HSA/DIA	PVC	3.2	3.2	6.3	Bentonite				2009/04/07.
BH 2	18	441031	5015437	4.4	20/10	HSA/DIA	"	3.0	3.0	4.1	"				2009/04/07.
BH 8A	18	441999	5015428	4.3	20	HSA	"	1.2	1.2	4.3	"				2009/04/08

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
George Downing Estate Drilling Ltd.	410 Rue Principale	Grenville Sur La Rouge	QC.

Postal Code	Business Telephone No. (incl. area code)	Well Contractor's Licence No.	Business E-mail Address
J0V 1B0	819 242 6449	1844	downing@hawk.igs.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Date Submitted (yyyy/mm/dd)	Signature of Technician
Bruce Downing.	2173	2009/04/27.	Bruce Downing

Date 1st Well in Cluster Constructed (yyyy/mm/dd)	Date Last Well in Cluster Constructed (yyyy/mm/dd)
2009/04/07	2009/04/08.

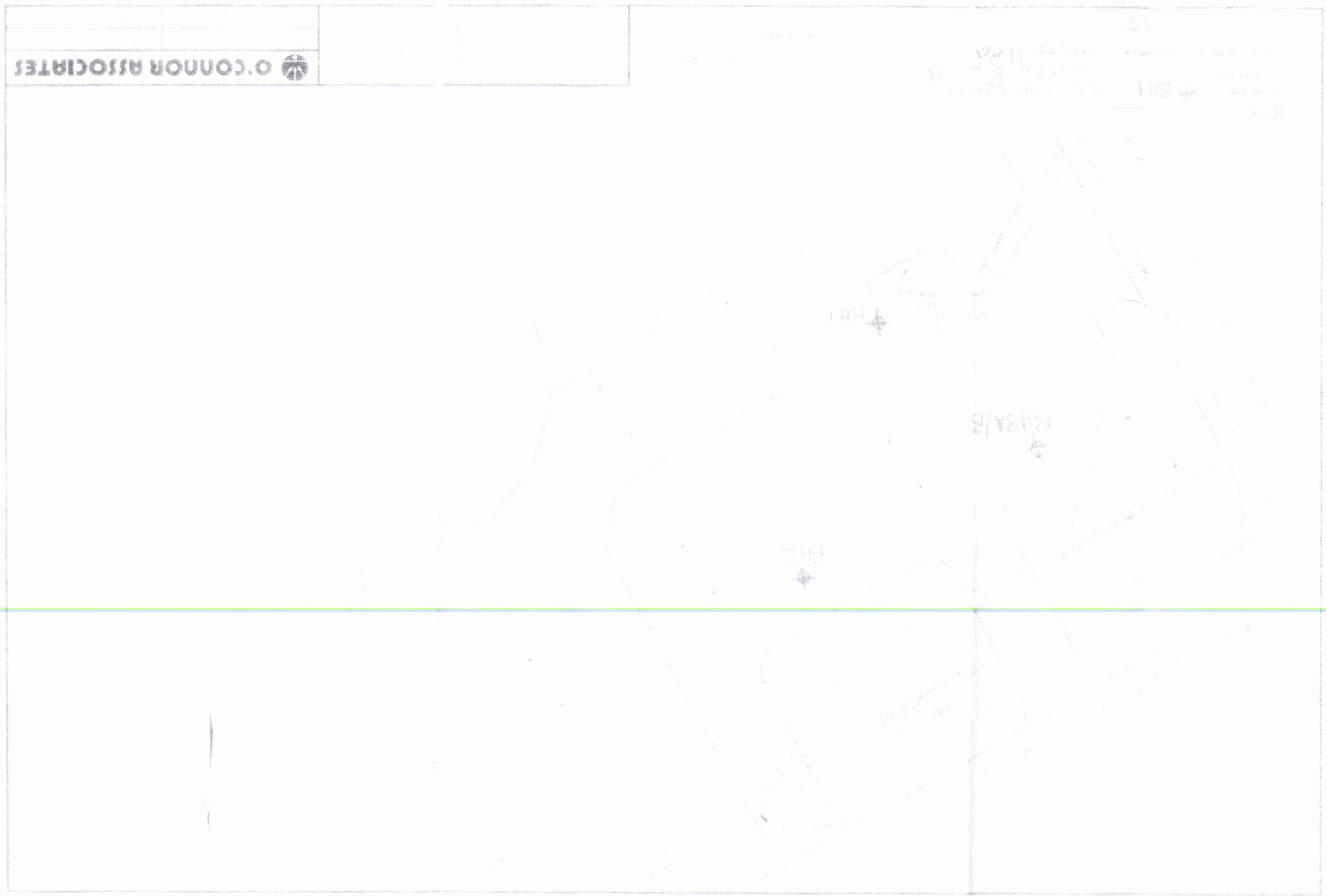
Ministry Use Only

Date Received (yyyy/mm/dd)	Date Inspected (yyyy/mm/dd)
	MAY 20 2009
Audit No. C05166	Remarks M04460

1991 (11/2006)

Ministry's Copy

C-1846 marked copies



Ontario Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)*
4 m.w. Abandonments
Tag A019093

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

[redacted]

Address of Well Location (Street Number/Name, RR): 3684 Fallowfield Road
Township:
Lot:
Concession:
County/District/Municipality:
City/Town/Village: Ottawa
Province: Ontario
Postal Code:

UTM Coordinates: NAD 83 | Zone 18 | Easting 444199 | Northing 5015128
GPS Unit Make: Garmin
Model: Etrex
Mode of Operation: ☐ Differentiated, specify ☑ Undifferentiated ☑ Averaged

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
	Abandon 4 Monitoring wells				
	Remove casing + screen; overdrill and backfill boreholes with Bentonite Cement Slurry from 7.9 m below surface to surface as per ONT MOE Reg 903				

Hole Details

Depth (Metres) From	Depth (Metres) To	Diameter (Centimetres)
0	7.9	20/10

Water Use

☐ Public ☐ Industrial ☐ Not used ☐ Other, specify
☐ Domestic ☐ Commercial ☐ Dewatering
☐ Livestock ☐ Municipal ☐ Monitoring
☐ Irrigation ☐ Test Hole ☐ Cooling & Air Conditioning

Method of Construction

☐ Cable Tool ☐ Air Percussion ☐ Digging
☐ Rotary (Conventional) ☐ Diamond ☐ Boring
☐ Rotary (Reverse) ☐ Jetting ☐ Other, specify
☐ Rotary (Air) ☐ Driving

Status of Well

☐ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, specify
☐ Alteration (Construction) ☑ Abandoned, other, specify M.W.

Construction Details

Inside Diameter (Centimetres)	Material (steel, plastic, fibreglass, concrete, galvanized)	Wall Thickness	Depth (Metres) From	Depth (Metres) To

No Casing and Screen Used

Open Hole ☐ Yes ☑ No

Static Water Level Test

Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☐ Plastic

Outside Diameter (Centimetres):
Slot No.:

Water Details

Water found at Depth: Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth: Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth: Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Disinfected ☐ Yes ☑ No. If no, provide reason: Abandon
Date Master Well Completed (yyyy/mm/dd): 2009/09/17

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	Depth Set at (Metres) To	Type of Sealant Used (Material and Type)	Volume Used (Cubic Metres)
0	7.9	Bentonite Cement	100 Kgs

Cluster Information *(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)*

Total Wells in Cluster: 4
Please indicate Number of Cluster Well Information Log Sheets Submitted: 1
Total Wells on this Property: Unknown

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.
☑ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

Signature of Technician/Contractor: [signature]
Date (yyyy/mm/dd): 2009/09/23

Master Well Owner's/Land Owner's consent to use Cluster Form

Signature: [signature]
Date (yyyy/mm/dd): 2009/10/05

Well Contractor and Well Technician Information

Business Name of Well Contractor: George Downing Estate Drilling
Well Contractor's Licence No.: 1814
Business Address (Street No./Name, number, RR): 410 Rue Principale
Municipality: Grenville Sur La Rouge
Province: QC
Postal Code: J0V 1B0
Business E-mail Address: downing@hawk.iga.net
Bus. Telephone No. (inc. area code): 8192426469
Name of Well Technician (Last Name, First Name): Downing, Bruce
Well Technician's Licence No.: 2173
Signature of Technician: [signature]
Date Submitted (yyyy/mm/dd): 2009/09/23.

Ministry Use Only

Audit No.: M 04520
Well Contractor No.:
Date Received (yyyy/mm/dd): OCT 27 2009
Date of Inspection (yyyy/mm/dd):
Remarks:

1992 (11/2006)

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)*
4 m.w. abandonments
Tag A019093

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

[redacted]

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
3684 Fallowfield.				

City/Town/Village	Province	Postal Code	GPS Unit Make	Model	Unit Mode of Operation	Signature of Technician/Contractor	Date *(yyyy/mm/dd)*
Ottawa	Ontario		Garmin	Etrex.	☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify:		upon request 2009/09/23

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
BH 1	18	441020	5015411	6.3	20/10								Bentonite cement slurry		2009/09/17
BH 2	18	441031	5015437	6.4	20/10										
BH 8A	18	441999	5015428	4.3	20										

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
George Downing Estate Drilling Ltd	410 Rue Principale Granville	Ile La Rouge	QC

Postal Code	Business Telephone No. *(inc. area code)*	Well Contractor's Licence No.	Business E-mail Address
J0V1B0	8197426469	1844	downing@hawkesbury.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Date Submitted *(yyyy/mm/dd)*	Signature of Technician
Bruce Downing	2173	2009/09/23	

Date 1st Well in Cluster Constructed *(yyyy/mm/dd)*	Date Last Well in Cluster Constructed *(yyyy/mm/dd)*
2009/09/17	2009/09/17

Ministry Use Only

Date Received *(yyyy/mm/dd)*	Date Inspected *(yyyy/mm/dd)*
OCT 27 2009	
Audit No. c06110	Remarks md4520

1991 (11/2006)

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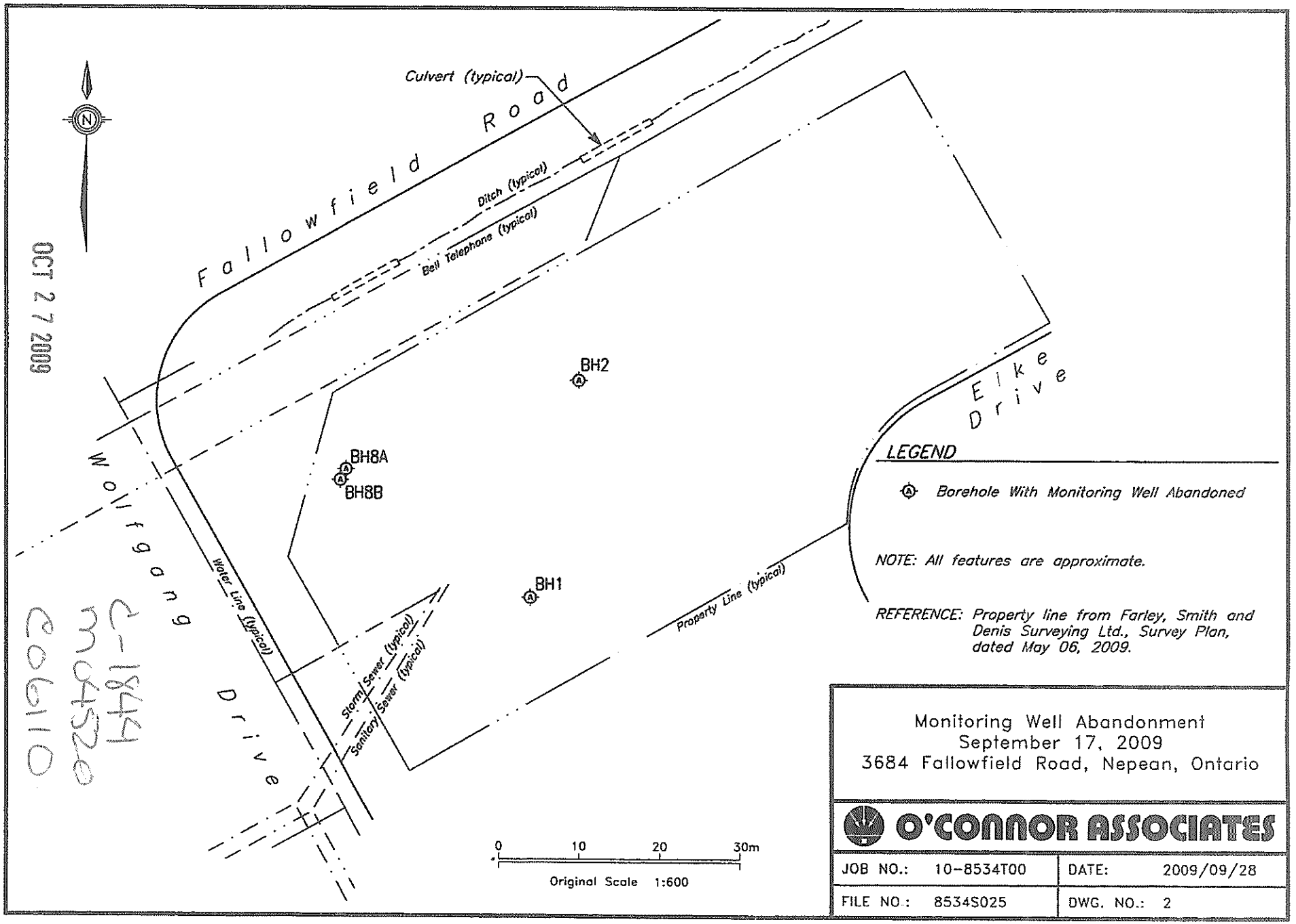

OCT 27 2009

2-1841
30432
20610

Monitoring Well Abandonment
September 17, 2009
3684 Fallowfield Road, Nepean, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8534T00	DATE: 2009/09/28
FILE NO.: 8534S025	DWG. NO.: 2

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)*
4 m.w. Abandonments
Tag A019093

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

[redacted]

Address of Well Location (Street Number/Name, RR): 3684 Fallowfield Road
Township:
Lot:
Concession:
County/District/Municipality:
City/Town/Village: Ottawa
Province: Ontario
Postal Code:

UTM Coordinates: NAD 83 | Zone 18 | Easting 444199 | Northing 5015128
GPS Unit Make: Garmin
Model: Etrex
Mode of Operation: ☐ Differentiated, specify ☑ Undifferentiated ☑ Averaged

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
	Abandon 4 Monitoring wells				
	Remove casing + screen; overdrill and backfill boreholes with Bentonite Cement Slurry from 7.9 m below surface to surface as per ONT MOE Reg 903				

Hole Details

Depth (Metres) From	Depth (Metres) To	Diameter (Centimetres)
0	7.9	20/10

Water Use

☐ Public ☐ Industrial ☐ Not used ☐ Other, specify
☐ Domestic ☐ Commercial ☐ Dewatering
☐ Livestock ☐ Municipal ☐ Monitoring
☐ Irrigation ☐ Test Hole ☐ Cooling & Air Conditioning

Method of Construction

☐ Cable Tool ☐ Air Percussion ☐ Digging
☐ Rotary (Conventional) ☐ Diamond ☐ Boring
☐ Rotary (Reverse) ☐ Jetting ☐ Other, specify
☐ Rotary (Air) ☐ Driving

Status of Well

☐ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, specify
☐ Alteration (Construction) ☑ Abandoned, other, specify M.W.

Construction Details

Inside Diameter (Centimetres)	Material (steel, plastic, fibreglass, concrete, galvanized)	Wall Thickness	Depth (Metres) From	Depth (Metres) To

No Casing and Screen Used

Open Hole ☐ Yes ☑ No

Static Water Level Test

Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☐ Plastic

Outside Diameter (Centimetres):
Slot No.:

Water Details

Water found at Depth: Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth: Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth: Metres ☐ Gas — Kind of Water: ☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Disinfected ☐ Yes ☑ No. If no, provide reason: Abandon
Date Master Well Completed (yyyy/mm/dd): 2009/09/17

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	Depth Set at (Metres) To	Type of Sealant Used (Material and Type)	Volume Used (Cubic Metres)
0	7.9	Bentonite Cement	100 Kgs

Cluster Information *(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)*

Total Wells in Cluster: 4
Please indicate Number of Cluster Well Information Log Sheets Submitted: 1
Total Wells on this Property: Unknown

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.
☑ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

Signature of Technician/Contractor: [signature]
Date (yyyy/mm/dd): 2009/09/23

Master Well Owner's/Land Owner's consent to use Cluster Form

Signature: [signature]
Date (yyyy/mm/dd): 2009/10/05

Well Contractor and Well Technician Information

Business Name of Well Contractor: George Downing Estate Drilling
Well Contractor's Licence No.: 1814
Business Address (Street No./Name, number, RR): 410 Rue Principale
Municipality: Grenville Sur La Rouge
Province: QC
Postal Code: J0V 1B0
Business E-mail Address: downing@hawk.iga.net
Bus. Telephone No. (inc. area code): 8192426469
Name of Well Technician (Last Name, First Name): Downing, Bruce
Well Technician's Licence No.: 2173
Signature of Technician: [signature]
Date Submitted (yyyy/mm/dd): 2009/09/23.

Ministry Use Only

Audit No.: M 04520
Well Contractor No.:
Date Received (yyyy/mm/dd): OCT 27 2009
Date of Inspection (yyyy/mm/dd):
Remarks:

1992 (11/2006)

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)*
4 m.w. abandonments
Tag A019093

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

[redacted]

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
3684 Fallowfield.				

City/Town/Village	Province	Postal Code	GPS Unit Make	Model	Unit Mode of Operation	Signature of Technician/Contractor	Date *(yyyy/mm/dd)*
Ottawa	Ontario		Garmin	Etrex.	☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify:		upon request 2009/09/23

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
BH 1	18	441020	5015411	6.3	20/10								Bentonite cement slurry		2009/09/17
BH 2	18	441031	5015437	6.4	20/10										
BH 8A	18	441999	5015428	4.3	20										

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
George Downing Estate Drilling Ltd	410 Rue Principale Granville	Ile La Rouge	QC

Postal Code	Business Telephone No. *(inc. area code)*	Well Contractor's Licence No.	Business E-mail Address
J0V1B0	8197426469	1844	downing@hawkesbury.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Date Submitted *(yyyy/mm/dd)*	Signature of Technician
Bruce Downing	2173	2009/09/23	

Date 1st Well in Cluster Constructed *(yyyy/mm/dd)*	Date Last Well in Cluster Constructed *(yyyy/mm/dd)*
2009/09/17	2009/09/17

Ministry Use Only

Date Received *(yyyy/mm/dd)*	Date Inspected *(yyyy/mm/dd)*
OCT 27 2009	
Audit No. c06110	Remarks md4520

1991 (11/2006)

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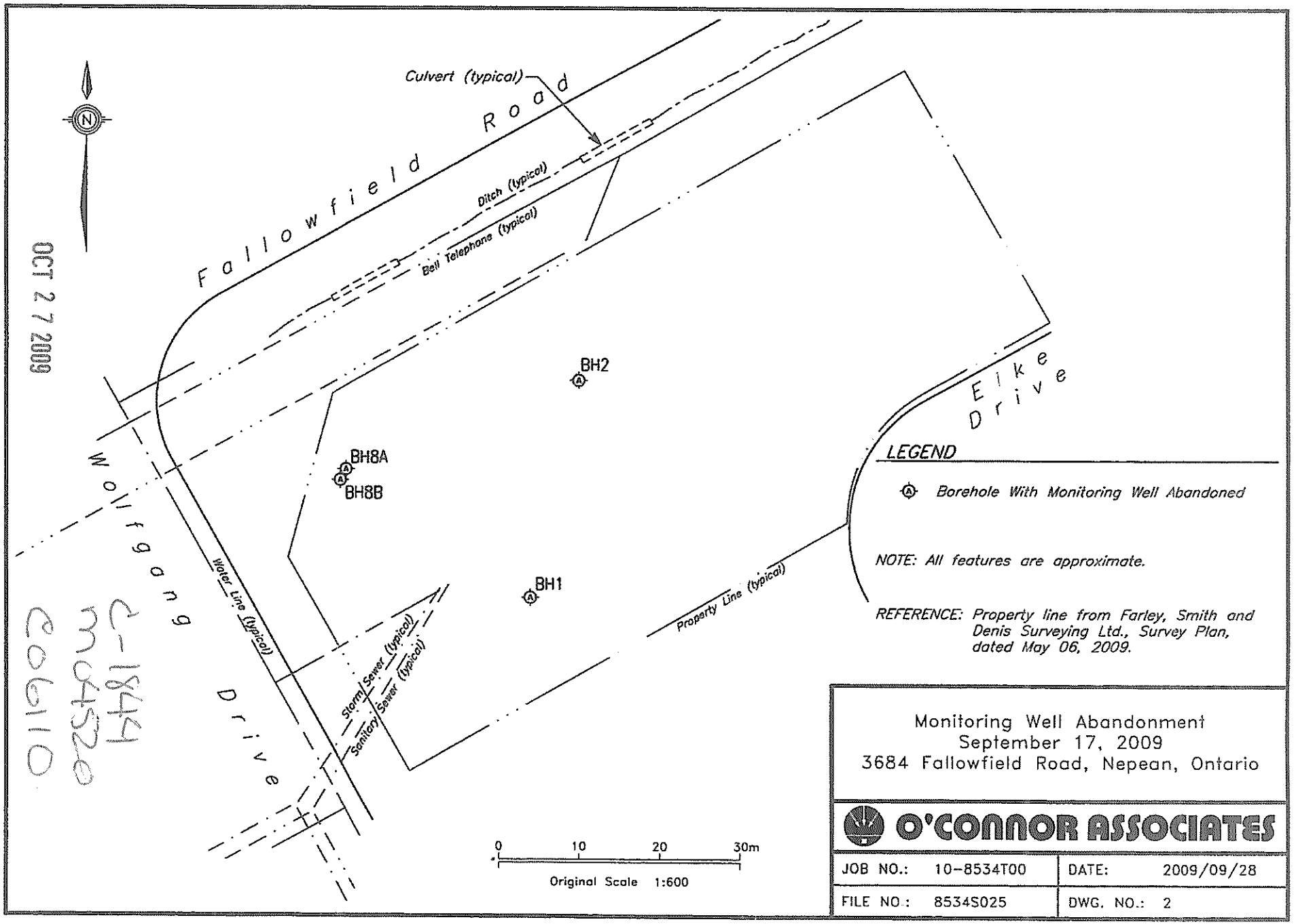

OCT 27 2009

2-1841
30432
20610

Monitoring Well Abandonment
September 17, 2009
3684 Fallowfield Road, Nepean, Ontario

O'CONNOR ASSOCIATES

JOB NO.: 10-8534T00	DATE: 2009/09/28
FILE NO.: 8534S025	DWG. NO.: 2

Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* Tag#: A133499 A133499

S-12859

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Measurements recorded in: ☐ Metric ☐ Imperial

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	City of OTTAWA		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
110 Laurier Avenue west	Ottawa	ON	K1P1J1	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Foxfield Dr.			

County/District/Municipality	City/Town/Village	Province	Postal Code
	OTTAWA	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	441368	5014920		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
B/K	Topsoil	Sand	Dry	0	.07
Brn	Clay	silt	Soft.	.07	3.1
Brn	clay	silt	Soft, wet	3.1	5.49

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
0	2.13	Bead.	
2.13	5.49	Sand.	

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☒ Other, *specify* direct push

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☒ Test Hole ☒ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify*

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
3.45	plastic	.356	0	2.44

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
4.21	plastic	10	2.44	5.49

Status of Well

☐ Water Supply
☐ Replacement Well
☒ Test Hole
☐ Recharge Well
☐ Dewatering Well
☒ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, *specify*
☐ Other, *specify*

Water Details

Water found at Depth (m/ft)	Kind of Water	
	☐ Gas	☐ Fresh ☐ Untested ☐ Other, *specify*
	☐ Gas	☐ Fresh ☐ Untested ☐ Other, *specify*
	☐ Gas	☐ Fresh ☐ Untested ☐ Other, *specify*

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	5.49	8.25

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, *specify*

If pumping discontinued, give reason:

Pump intake set at *(m/ft)*

Pumping rate *(l/min / GPM)*

Duration of pumping ____ hrs + ____ min

Final water level end of pumping *(m/ft)*

If flowing give rate *(l/min / GPM)*

Recommended pump depth *(m/ft)*

Recommended pump rate *(l/min / GPM)*

Well production *(l/min / GPM)*

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

Lichfield MW12-9 on Map.

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Strata Soil Services	7241

Business Address (Street Number/Name)	Municipality
2-147 West Beaver Creek Rd.	Richmond Hill

Province	Postal Code	Business E-mail Address
ON	L4B1G6	wrecords@stratasoil.com

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
9057649309	Beatty, Brian

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3616		20120803

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☐ No	YYYY MM DD	20120802

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Audit No. Z154313

Received SEP 04 2012

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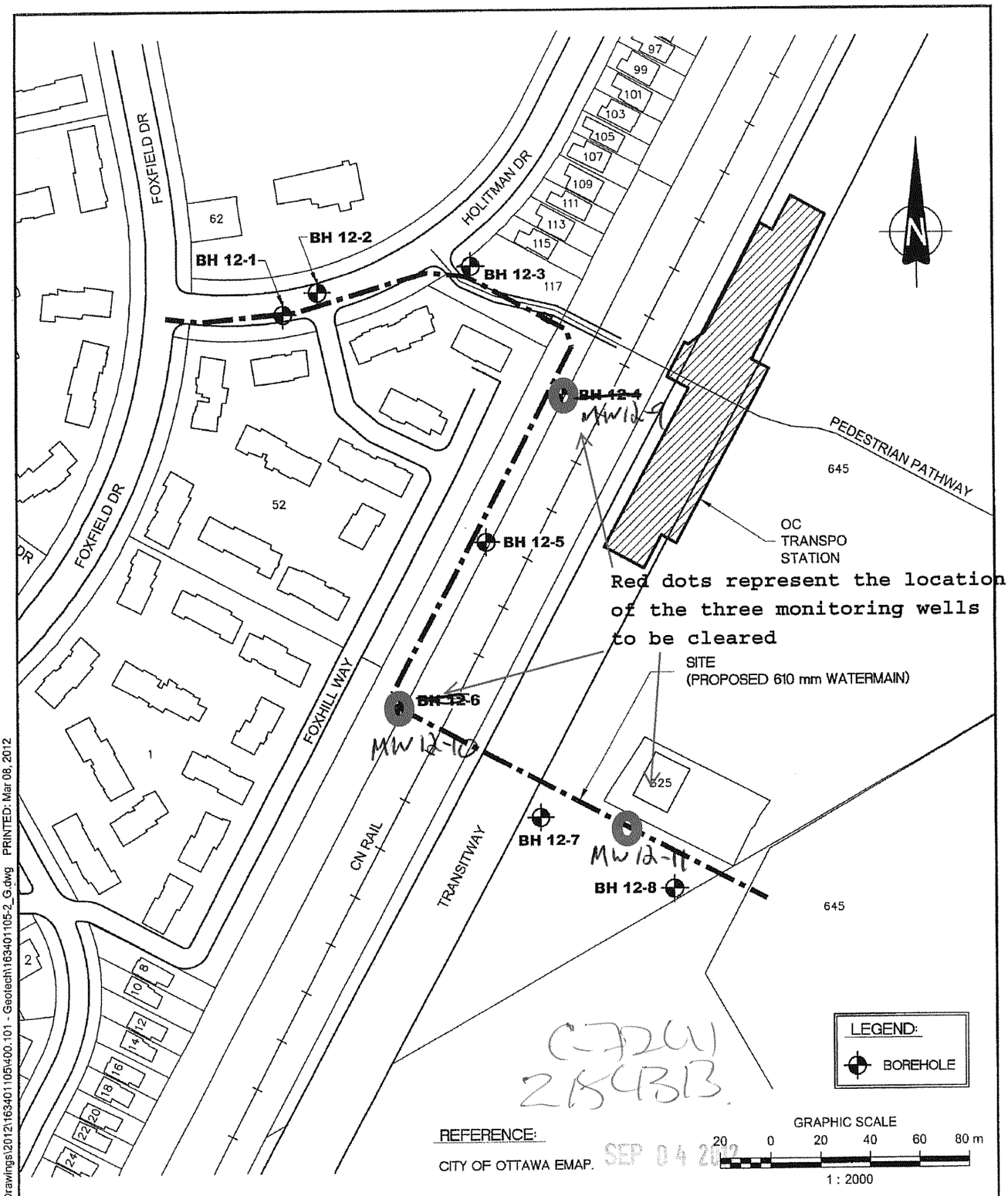
S-12859



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SITE PLAN

GEOTECHNICAL INVESTIGATION

PROPOSED 610 mm WATERMAIN, FOXFIELD DRIVE, OTTAWA, ON.

Client: CITY OF OTTAWA

Job No.:	163401105
Scale:	1 : 2000 (Approx.)
Date:	12/03/08
Dwn. By:	GBB
App'd By:	

Dwg. No.: 2

Stantec

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Ontario — Ministry of the Environment

Well Tag No. (Place Sticker and/or Print Below) **Tag#: A133500** A133500

S-12859

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Page ____ of ____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	Well Constructed by Well Owner
	City of Ottawa		[ ]

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
110 Laurier Avenue west	OTTAWA	ON	K1P1J1	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Foxfield Drive,			

County/District/Municipality	City/Town/Village	Province	Postal Code
	OTTAWA,	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	449298	5014824		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BLK	Topsoil	Sand	Dry	0	.07
Brown	clay	silt	soft	.07	3.1
Brn/Gry	clay	silt	soft, wet	3.1	5.79

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	0.31	Flushmount/concrete	
.31	2.13	Bensel	
2.13	5.79	Sand	

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[ ] Rotary (Reverse) [ ] Driving
[ ] Boring [ ] Digging
[ ] Air percussion
[X] Other, specify Direct push

Well Use

[ ] Public [ ] Commercial [ ] Not used
[ ] Domestic [ ] Municipal [ ] Dewatering
[ ] Livestock [X] Test Hole [X] Monitoring
[ ] Irrigation [ ] Cooling & Air Conditioning
[ ] Industrial
[ ] Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
3.45	plastic	.356	0	2.74

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
4.21	plastic	10	2.74	5.79

Status of Well

[ ] Water Supply
[ ] Replacement Well
[X] Test Hole
[ ] Recharge Well
[ ] Dewatering Well
[X] Observation and/or Monitoring Hole
[ ] Alteration (Construction)
[ ] Abandoned, Insufficient Supply
[ ] Abandoned, Poor Water Quality
[ ] Abandoned, other, specify
[ ] Other, specify

Water Details

Water found at Depth (m/ft)	Kind of Water	
	[ ] Gas	[ ] Fresh [ ] Untested [ ] Other, specify
	[ ] Gas	[ ] Fresh [ ] Untested [ ] Other, specify
	[ ] Gas	[ ] Fresh [ ] Untested [ ] Other, specify

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	5.79	8.25

Results of Well Yield Testing

After test of well yield, water was:
[ ] Clear and sand free
[ ] Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

Well production (l/min / GPM)

Disinfected? [ ] Yes [ ] No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

Labelled MW 12-10 on Map

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Strata Soil Sampling	7241

Business Address (Street Number/Name)	Municipality
2-147 West Beaver Creek Rd.	Richmond Hill

Province	Postal Code	Business E-mail Address
ON	L4B1C6	wrecords@stratasoil.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
9057649309	Beatty Brian

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3616		2012 08 03

Well owner's information package delivered: [ ] Yes [ ] No

Date Package Delivered: Y Y Y Y M M D D

Date Work Completed: 2012 08 02

Ministry Use Only

Audit No. Z 154315

Received AUG 4 2012

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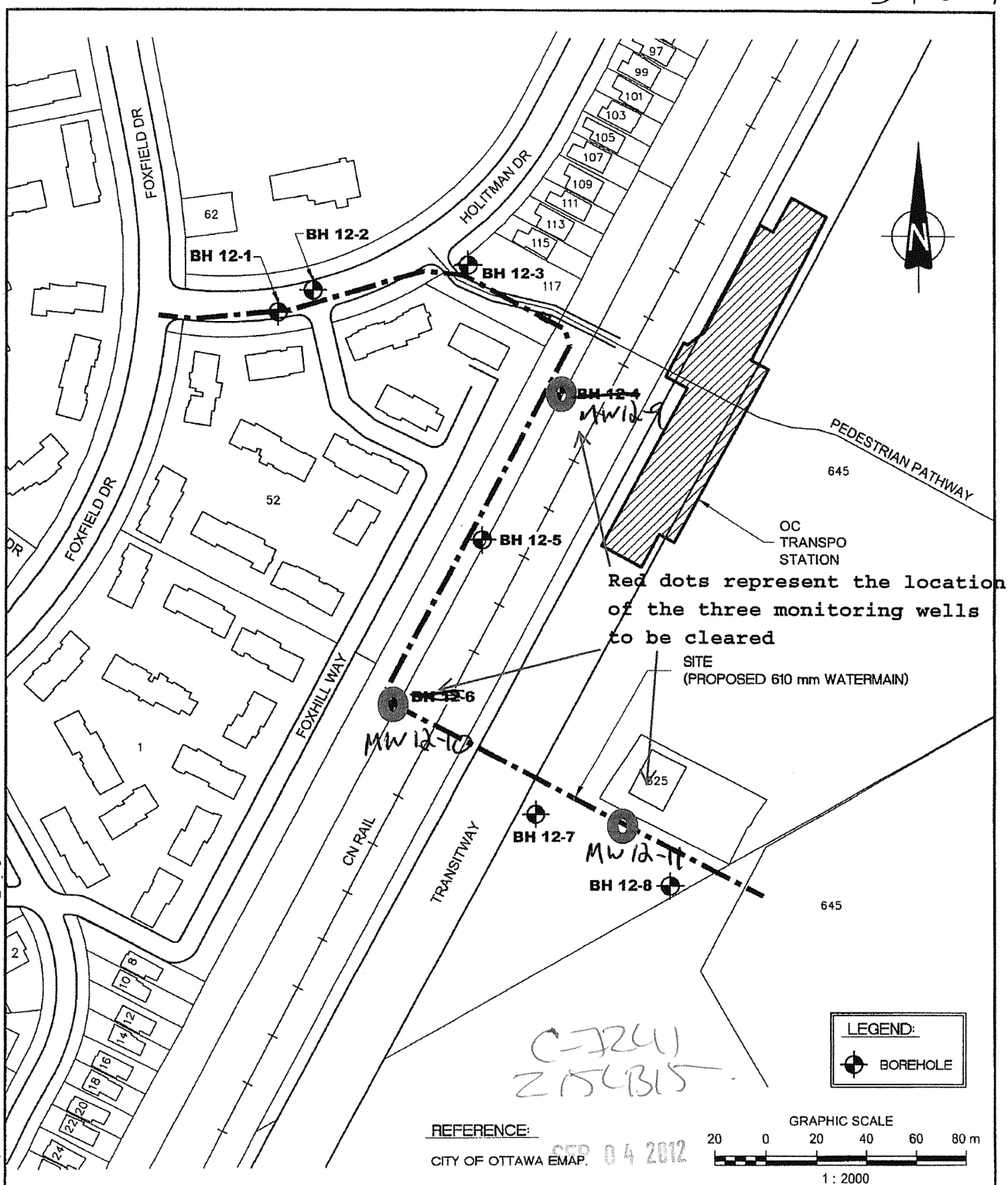

C-7241
Z15CB15

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SITE PLAN

GEOTECHNICAL INVESTIGATION

PROPOSED 610 mm WATERMAIN, FOXFIELD DRIVE, OTTAWA, ON.

Client: CITY OF OTTAWA

Job No.:	163401105
Scale:	1 : 2000 (Approx.)
Date:	12/03/08
Dwn. By:	GBB
App'd By:	

Dwg. No.: 2

Stantec

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Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* **Tag#: A133501** A133501

5-12859 **Well Record**

Regulation 903 Ontario Water Resources Act

Measurements recorded in: ☒ Metric ☐ Imperial

Page _____ of _____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	City of Ottawa.		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
110 Laurier Avenue west	OTTAWA	ON	K1P1J1	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Foxfield Drive.			

County/District/Municipality	City/Town/Village	Province	Postal Code
	OTTAWA	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	441391	5014748		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BLK	Topsoil	Sand	Dry	0	.07
Brwn	Silty Sand	Silt.	Dry, Loose.	.07	1.5
Brwn	Till		Hard?	1.5	3.1
Grey	Sandstone.			3.1	3.3
Brwn	Till		wet.	3.3	5.79.

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
0	.31	Flushmount/Concrete	
.31	2.13	Bensal	
2.13	5.79	Sand	

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☒ Other, *specify* Direct push

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☒ Test Hole ☒ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify* _____

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
3.45	plastic	.356	0	2.74

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
4.21	plastic	10	2.74	5.79

Status of Well

☐ Water Supply
☐ Replacement Well
☒ Test Hole
☐ Recharge Well
☐ Dewatering Well
☒ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, *specify*
☐ Other, *specify*

Water Details

Water found at Depth (m/ft)	☐ Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, *specify*

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	2.74	8.25
2.7	5.79	5.71

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, *specify* _____

If pumping discontinued, give reason:

Pump intake set at *(m/ft)*

Pumping rate *(l/min / GPM)*

Duration of pumping _____ hrs + _____ min

Final water level end of pumping *(m/ft)*

If flowing give rate *(l/min / GPM)*

Recommended pump depth *(m/ft)*

Recommended pump rate *(l/min / GPM)*

Well production *(l/min / GPM)*

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

Labelled MW12-11 on Map.

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Strata Soil Sampling	7241

Business Address (Street Number/Name)	Municipality
2-147 West Beaver Creek Rd.	Richmond Hill

Province	Postal Code	Business E-mail Address
ON	L4B1C6	wrecords@stratasoil.com

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
9057649304	Beatty, Brian

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3616		2012 08 03

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☐ No		2012 08 02

Ministry Use Only

Audit No. z154314

Received SEP 04 2012

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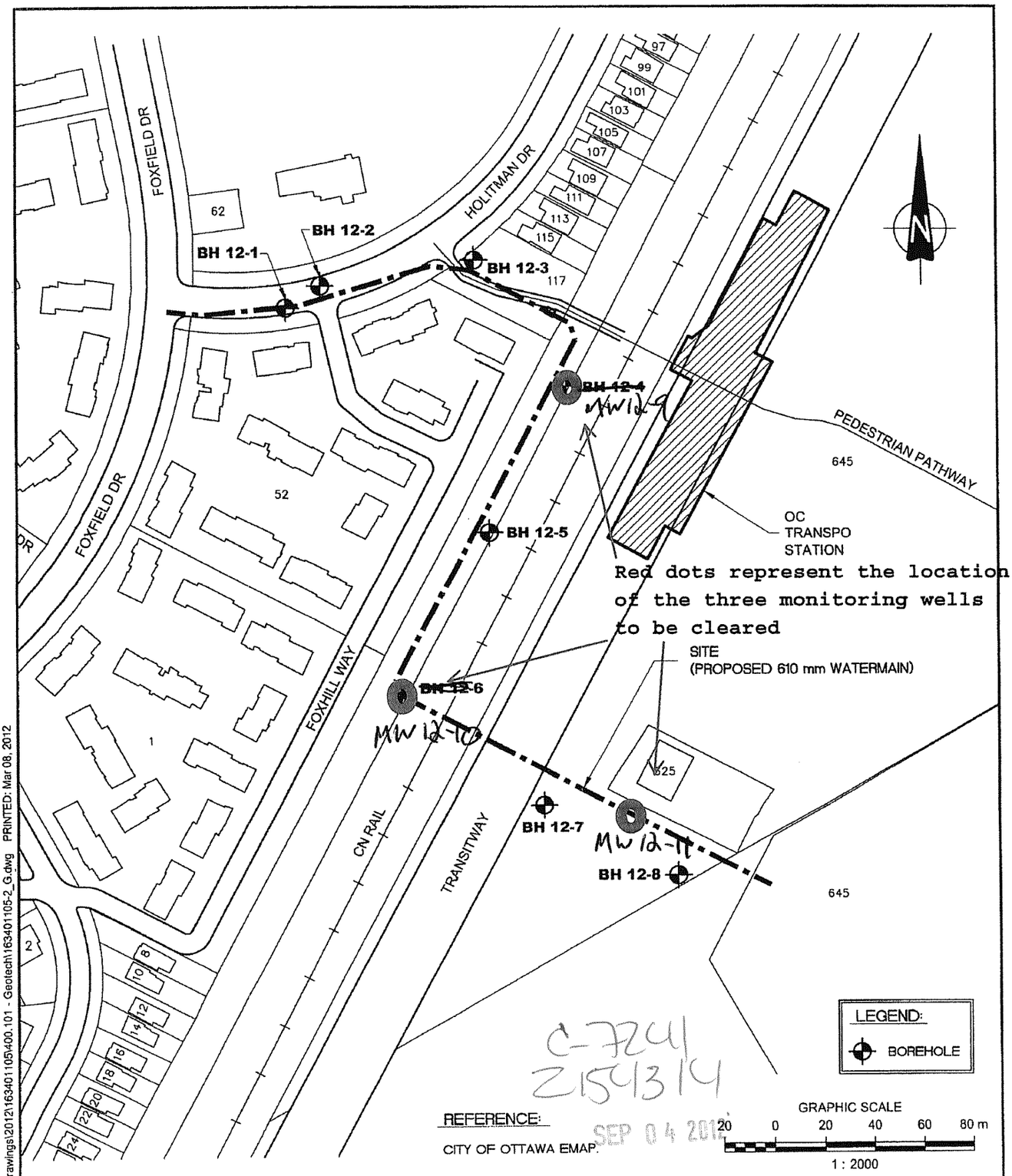

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SEP 04 2012

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SITE PLAN

GEOTECHNICAL INVESTIGATION

PROPOSED 610 mm WATERMAIN, FOXFIELD DRIVE, OTTAWA, ON.

Client: CITY OF OTTAWA

Job No.:	163401105
Scale:	1 : 2000 (Approx.)
Date:	12/03/08
Dwn. By:	GBB
App'd By:	

Dwg. No.: 2

Stantec

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Well ID Number: 1514574
Well Audit Number:
Well Tag Number:

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

Well Location

Address of Well Location	
Township	NEPEAN TOWNSHIP
Lot	020
Concession	RF 02
County/District/Municipality	OTTAWA-CARLETON
City/Town/Village	
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 18 Easting: 441421.70 Northing: 5015601.00
Municipal Plan and Sublot Number	
Other	

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
	CLAY	GRVL		0 ft	13 ft
	ROCK	LMSN		13 ft	19 ft
	SNDS	LMSN	LYRD	19 ft	64 ft
	LMSN			64 ft	69 ft
	SNDS	LMSN	LYRD	69 ft	72 ft
WHIT	SNDS			72 ft	82 ft
	SNDS	LMSN	LYRD	82 ft	132 ft
GREY	LMSN			132 ft	133 ft
	SNDS	LMSN	LYRD	133 ft	146 ft
WHIT	SNDS			146 ft	155 ft
WHIT	SNDS	LYRD		155 ft	175 ft

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
Rotary (Reverse)	
	Municipal

Status of Well

Water Supply

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
10 inch	STEEL		19 ft
10 inch	OPEN HOLE		175 ft

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 1558

Results of Well Yield Testing

After test of well yield, water was	
If pumping discontinued, give reason	
Pump intake set at	
Pumping Rate	20 GPM
Duration of Pumping	
Final water level	
If flowing give rate	
Recommended pump depth	
Recommended pump rate	
Well Production	PUMP
Disinfected?	

Draw Down & Recovery

Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
SWL	34 ft		
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
	Fresh

Hole Diameter

Depth From	Depth To	Diameter

APPENDIX 3

QUALIFICATIONS OF ASSESSORS

Mandy Witteman, E.I.T.

patersongroup

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

POSITION

Environmental Engineer

EDUCATION

Carleton University, M.A.Sc., Environmental Engineering, 2013
Carleton University, B.Eng., Environmental Engineering, 2008

MEMBERSHIPS & AWARDS

Alberta Professional Engineers and Geoscience Association
NSERC Industry R&D Scholarship

EXPERIENCE

2018 – Present
Paterson Group Inc.
Consulting Engineers
Geotechnical and Environmental Division
Environmental Engineer

2014 – 2015
Thurber Engineering Limited
Oil Sand Tailings Group
Tailings Engineer

2014 – 2013
Carleton University
Department of Civil & Environmental Engineering
Research Engineer

2013 - 2009
Carleton University
Department of Civil & Environmental Engineering
Research Assistant and Teachers Assistant

2008 – 2009
SLR Consulting Limited
Contaminated Sites
Junior Environmental Engineer

Mark S. D'Arcy, P. Eng.

patersongroup

Geotechnical Engineering

Environmental Engineering

Hydrogeology

Geological Engineering

Materials Testing

Building Science

Archaeological Services

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

EXPERIENCE

1991 to Present
Paterson Group Inc.
Associate and Senior Environmental/Geotechnical Engineer
Environmental and Geotechnical Division
Supervisor of the Environmental Division

SELECT LIST OF PROJECTS

Mary River Exploration Mine Site - Northern Baffin Island
Agricultural Supply Facilities - Eastern Ontario
Laboratory Facility – Edmonton (Alberta)
Ottawa International Airport - Contaminant Migration Study - Ottawa
Richmond Road Reconstruction - Ottawa
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
Commercial Properties – Guelph and Brampton
Brownfields Remediation – Alcan Site - Kingston
Montreal Road Reconstruction - Ottawa
Appleford Street Residential Development - Ottawa
Remediation Program - Ottawa Train Yards
Remediation Program - Bayshore and Heron Gate
Gladstone Avenue Reconstruction – Ottawa
Somerset Avenue West Reconstruction - Ottawa