

Mineral Resource Impact Assessment Proposed Commercial Development Expansion

7628 Flewellyn Road
Stittsville, Ontario

Prepared for CFT Group

Report PG7229-1 Revision 1
dated September 20, 2024



Table of Contents

1.0	Introduction	1
2.0	Proposed Development	1
3.0	Location and Surface Conditions	1
4.0	Zoning	3
5.0	Adjacent Bedrock Quarry	4
5.1	Status, Type and Location of Quarry Operation	4
5.2	City of Ottawa Official Plan	4
5.3	Provincial Standards - Aggregate Resources of Ontario	6
6.0	Compatibility and Mitigation Analysis.....	7
6.1	Noise	7
6.2	Traffic	8
6.3	Dust	8
6.4	Vibration	8
6.5	Groundwater.....	9
7.0	Conclusions.....	10
8.0	Statement of Limitations.....	11

Appendix

- Appendix 1**
- Paterson Drawing PG7229-1 – Site Plan
 - McRobie Architects – Zoning Information, Location Plan, Existing and New Site Plan – SP-A01
 - McRobie Architects – Site Plan Detail Proposed – SP-A02
 - Historical Aerial Photographs
 - Aggregate Resource – Goulburn Quarry
 - MECP Water Well Record - Tag # A378991
- Appendix 2**
- Gradient Wind - File No.: 21-119 – Response Letter dated September 3, 2024
 - Gradient Wind – File No.: 21-119 – Stationary Noise R1- Stationary Noise Assessment - September 3, 2024
 - Paterson Group Inc. - PH4401-LET.01- Revision 1- Hydrogeological Assessment and Terrain Analysis – August 21, 2024

1.0 Introduction

Paterson Group (Paterson) was commissioned by CFT Group to conduct a mineral resource impact assessment in support of a Zoning By-law Amendment and Site Plan Control application for the property located at the 7628 Flewellyn Road as required by Section 3.7.4 of the City of Ottawa Official Plan.

The objective of the current assessment is to evaluate whether the proposed development expansion in proximity to the adjacent mineral aggregate resources, can occur without impacting the current or future aggregate operation.

Based on Section 2.5 of the Provincial Policy Statement (PPS) 2020, mineral aggregate resources shall be protected from long-term use and, where provincial information is available, deposits of mineral aggregate resources shall be identified.

2.0 Proposed Development

It is understood the re-zoning and site plan application is for the proposed expansion of the existing commercial development. The expansion would include an additional structure for truck maintenance and repairs (Building G), as well as a 2-storey warehouse and office (Building H). While the original office building (Building F) will remain in place, it is understood the remaining existing buildings will be either demolished or relocated within the subject site.

The property consists of a 20.72 ha lot with approximately 114 m of frontage along the south side of Flewellyn Road and is approximately 700 m deep. Site Plan drawings for the proposed expansion have been prepared by McRobie Architects and are included in Appendix 1.

3.0 Location and Surface Conditions

The subject site is bordered by Flewellyn Road and residential dwellings to the north, rural vacant land to the east and south with access roads and fill storage areas, and to the west by an existing aggregate operation. The subject location is identified in Drawing PG7229-1 – Site Plan included in Appendix 1.

The northern portion of the subject site is currently occupied by a vehicle salvage yard and auto dealership, which includes several structures, gravel surface parking lot, and stockpiles of scrap metal. The southern portion of the site is currently vacant. The ground surface across the subject site generally slopes to the south with an approximate elevation difference of 4 to 5 m.

As noted above, the subject site is bordered to the west by an authorized aggregate operation (ALPS ID: 4114) noted herein as the Goulbourn Quarry. The adjacent Goulbourn Quarry is relatively flat with an approximate geodetic elevation of 128 m with central areas excavated to an approximate geodetic elevation of 118 m.

4.0 Zoning

The northwest portion of the subject site is zoned as Rural General Industrial Zone (RG1[21r]) with a minimum lot area of 8,000 m² (0.80 ha). The remainder of the site is zoned as Rural Countryside Zone (RU).

The majority of the surrounding lots to the north, east and south are within the Rural Countryside Zone (RU) with areas of Environmental Protected zones (EP3) further to the east and north. The neighbouring Goulbourn Quarry is designated as Mineral Extraction Zone (ME).

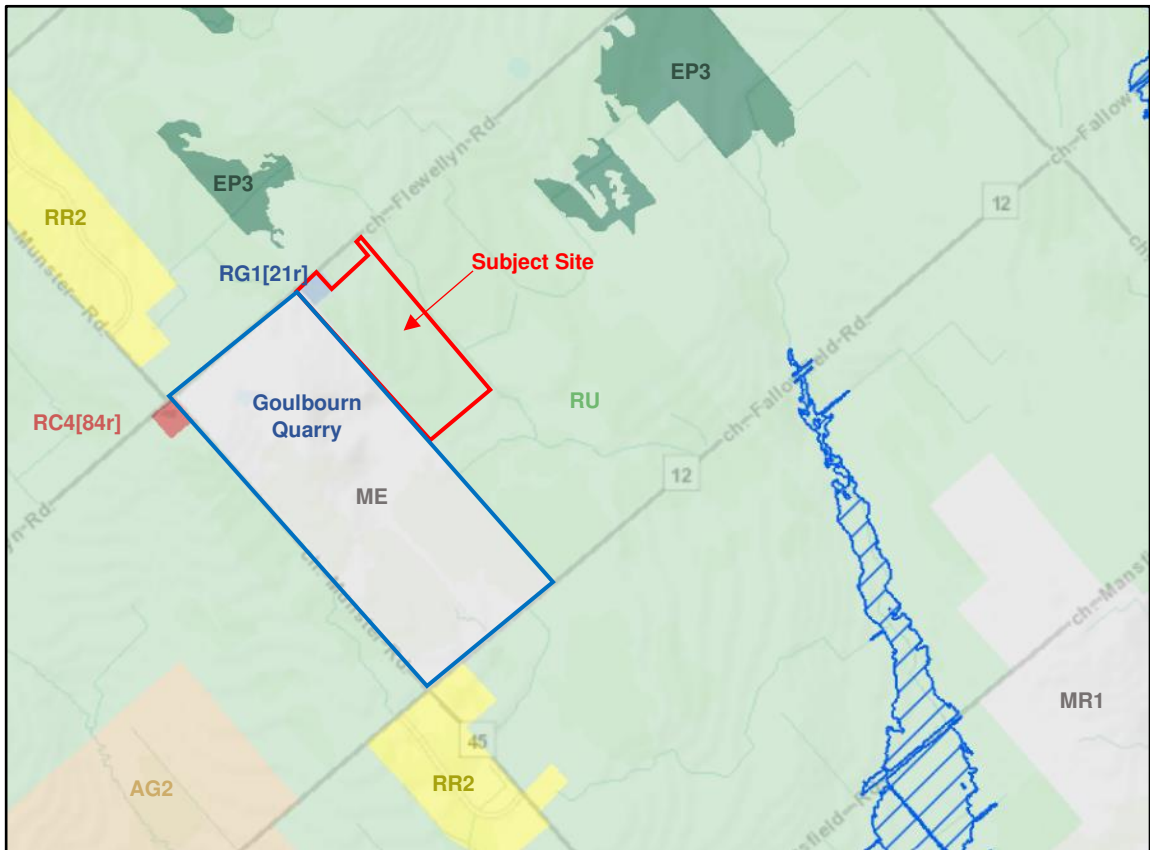


Figure 1: Subject Site and Surrounding Area Zoning

5.0 Adjacent Bedrock Quarry

5.1 Status, Type and Location of Quarry Operation

Goulbourn Quarry

The Goulbourn Quarry is located at 7676 Flewellyn Road and is adjacent to the west boundary of subject site. Based on the City of Ottawa Official Plan, it occupies Lot 11, Concession 8, in the Geographic Township of Goulbourn. The quarry is currently owned by Thomas Cavanagh Construction Ltd. Details of the quarry are provided below and included in Appendix 1 of the report. A series of historical aerial photographs have also been included in Appendix 1 to provide an extraction history of the aggregate resource.

A site visit of the Goulbourn Quarry was completed by Paterson on September 13, 2024. The site visit consisted of observing the current operation, site features, and a brief interview with a quarry representative to obtain additional information regarding the operation as it relates to current study.

The site consists of approximately 88.7 ha with approximately 70.5 ha of extraction area and a frontage of approximately 610 m along Flewellyn Road. Based on the Ministry of Natural Resources and Forestry database, the following information has been provided for the quarry:

- Site ID: 4114
- Approval Type: Class A Licence
- Operation Type: Both (Pit and Quarry)
- Max. Annual Tonnage: 1,000,00
- Licenced Area: 88.7 ha
- Location Name: Goulbourn Quarry

5.2 City of Ottawa Official Plan

The subject site occupies Part of Lot 12, Concession 8, in the Geographic Township of Goulbourn and is designated as Rural Countryside as shown on Schedule B9 - 'Rural Transect' of the City's Official Plan. The adjacent properties within the subject area have also been designated as Rural Countryside. However, a Bedrock Resource Area Overlay has been identified on the plan bordering the west property boundary. The land use of the areas neighbouring the subject site are presented below in Figure 2.

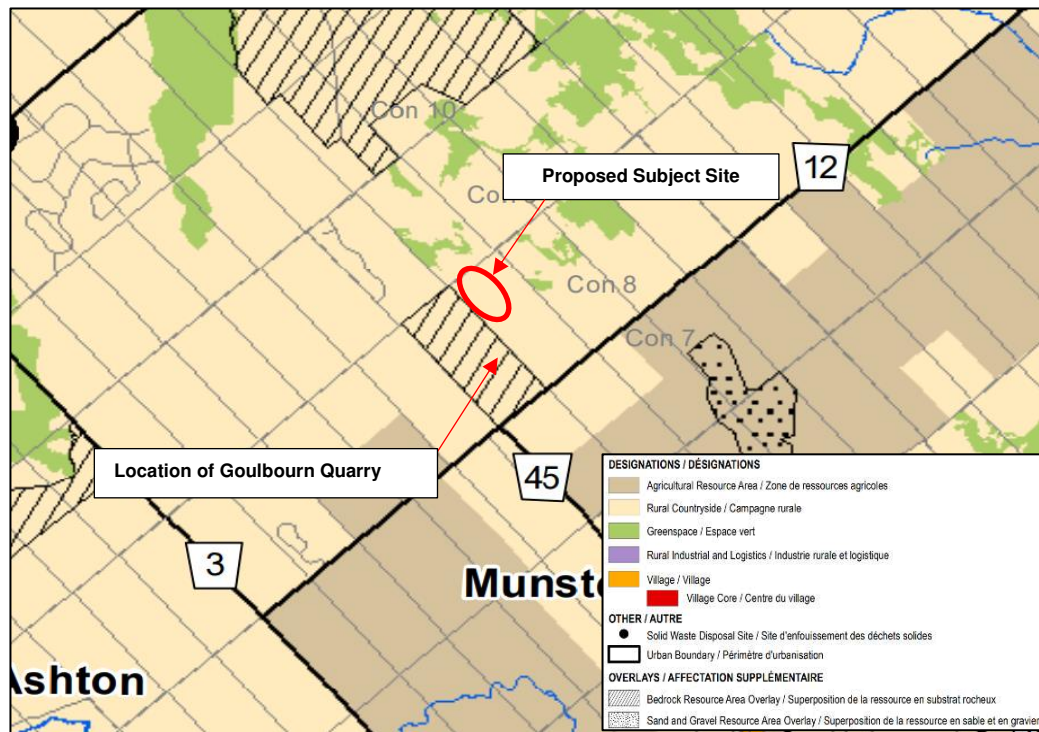


Figure 2: The City of Ottawa Official Plan - Schedule B9 – Rural Countryside

Given the subject site’s proximity to a designated Bedrock Resource Area Overlay on Schedule B9 of the City’s Official Plan, the proposed commercial development expansion is required to adhere to restrictions outlined in Policies 10, 11, 12 and 13 of Section 3.7.4 of the City’s Official Plan - Development Restriction on Adjacent Lands listed below.

Policy 10:

New development will not be approved within 500 meters of a Bedrock Resource Area or within 300 meters of a Sand and Gravel Resource Area, unless it can be demonstrated that such development will not conflict with future mineral aggregate extraction. Examples of conflicting land uses are new sensitive land uses that conflict with mineral aggregate extraction. These include but are not necessarily limited to:

- A. The creation of new lots;
- B. Rezoning to permit dwellings or lodging places (motels, camp grounds, nursing homes, etc.); and
- C. Farming or small-scale business uses where animals, equipment or employees are affected by pit or quarry activities.

Policy 11:

New development may be approved within 500 meters of an existing licensed bedrock quarry or within 300 meters of an existing sand and gravel pit if it can be demonstrated that the existing mineral aggregate operation, and potential future expansion of the operation in depth or extent, will not be affected by the development.

Policy 12:

The Ministry of Natural Resources will be consulted in review of studies necessary.

Policy 13:

Where the City approves the development of land in accordance with policies above, the City may impose conditions to ensure the development provides adequate buffering and/or separation between the new proposed use and the mineral aggregate area/operation.

5.3 Provincial Standards - Aggregate Resources of Ontario

Goulbourn Quarry

The Goulbourn Quarry located west of the subject site is currently being operated as an aggregate quarry. For the purpose of this report, it is understood that the future development of the quarry will be on the basis of a license for a quarry to extract resources to an elevation below the water table (Category 2 License - Class “A” quarry below water).

Based on the Operational Standards Section of the Aggregate Resources of Ontario: Provincial Standards, Version 1.0, excavation setbacks are required for all licensed mineral aggregate operations. Excavation setbacks are defined in **Section 5.10** of the Operational Standards for a Category 2 License as the following:

5.10.1 fifteen meters from the boundary of the site;

5.10.2 thirty meters from any part of the boundary of the site that abuts:

5.10.2.1 a highway,

5.10.2.2 land in use for residential purposes at the time the license was issued, or

5.10.2.3 land restricted to residential use by a zoning by-law when the license was issued; or

5.10.3 thirty meters from any body of water that is not the result of excavation below the water table

Based on Section 5.10 of the Operational Standards for a Category 2 License, a minimum setback of 15 m will be required from the eastern boundary of the Goulbourn Quarry, and adjacent to the subject site.

6.0 Compatibility and Mitigation Analysis

Based on our understanding of the Goulbourn Quarry, it is understood that the extraction of aggregate resources located at 7676 Flewellyn Road is currently ongoing and will continue for the foreseeable future.

As previously noted and illustrated in Figure 2 above, The City of Ottawa Official Plan - Schedule B9 - 'Rural Transect' has designated the subject site and adjacent properties as Rural Countryside. As such, the uses proposed for the subject site would not be impacted by the current or future expansion of the adjacent quarry operation, nor would the quarry operation be impacted by the proposed development expansion at the subject site. Furthermore, Paterson has reviewed the potential risks related to the proposed development expansion as well as the current or future expansion of the adjacent Goulbourn Quarry.

6.1 Noise

The subject site is identified within 500 m radius of the existing Goulbourn Quarry. A stationary noise assessment for the subject site was completed by Gradient Wind and has been included in Appendix 2 in support of the current study. The assessment detailed the effects of the proposed development expansion at the subject site on the neighbouring residential properties. Based on their review, the relocation and expansion of the stationary noise sources of the waste processing facility and the recycling center will not negatively impact the residential properties located along Flewellyn Road.

An alternative application to this information is that the proposed relocation and expansion of the salvage operations within the subject site will similarly not impact the Goulbourn Quarry.

Goulbourn Quarry

It is understood the aggregate extraction has been ongoing at the Goulbourn Quarry since 1989 and is anticipated to continue operating in the future. Historical photographs of the Goulbourn Quarry have been included in Appendix 1.

During a site visit conducted by Paterson personnel on September 13, 2024, an earth berm was noted along the eastern perimeter of the quarry operations bordering the subject site. The earth berm was densely vegetated and approximately 3 to 4 m in height.

A City of Ottawa response letter was prepared by Gradient Wind with regards to a component of their assessment in determining the affect of the noise produced by the existing quarry operation on the proposed development expansion at the subject site.

Based on the response letter, it was noted that the subject site is not considered a noise sensitive land use, and consideration of the impact of the quarry operation on the proposed commercial development expansion is not required. The response letter by Gradient Wind has been included in Appendix 2.

As such, a stationary noise assessment was not completed for the adjacent Goulbourn Quarry on the subject site.

6.2 Traffic

It is understood the primary truck route and entrance for the current operation at the Goulbourn Quarry is located along Flewellyn Road, approximately 215 m from the subject site. It is anticipated that the quarry will continue utilizing this route for future operations.

Based on our understanding, the change in traffic volume generated by the proposed development expansion at the subject site is expected to be negligible. As such, the additional traffic generated by the subject site will not preclude or hinder ongoing operations at the Goulbourn Quarry, nor will truck traffic generated by the quarry operation interfere with the proposed development expansion at the subject site. Therefore, no potential compatibility impacts are anticipated between the subject site and the current and future operation of the Goulbourn Quarry.

6.3 Dust

Under Section 3.1, 3.2 and 3.3 of the Operational Standards of the Aggregate Resources of Ontario: Provincial Standards, Version 1.0, all operations are responsible for maintaining dust emissions. Based on discussions with a Goulbourn Quarry representative, it is understood the operation utilizes standard practices for dust control. Dust control on the haul roads and processing areas at the operation are completed regularly using water as a suppressant. There may be additional stockpiles of extracted aggregates within the quarry for future operations and at the property south of the subject site. However, these stockpiles should not result in additional dust emissions. The Goulbourn Quarry must operate in accordance with the aforementioned sections of the Operational Standards of the Aggregate Resources of Ontario: Provincial Standards, Version 1.0. It is understood the proposed development expansion at the subject site will require water or other approved dust suppressants during the construction stages of the development.

6.4 Vibration

It is understood that current and future operations for the Goulbourn Quarry will require drilling and blasting for extraction purposes. All blasting operations at the quarry must comply with the applicable Ontario Provincial Standard Specifications.

The proposed development expansion at the subject site will include an additional structure for truck maintenance and repairs, a 2-storey warehouse and office, and relocation of existing buildings. Based on the current and future quarry operations, it is estimated a minimum of 75 m will separate the quarry operation from the proposed/existing structures within the subject site. Although vibrations may be perceptible at the proposed development as a result of quarry operations, it is expected that all quarry activities would follow provincial vibration standard specifications to ensure minimal impacts.

Blasting may occur as part of the excavation process during the construction stages of the proposed expansion at the subject site. However, it is unrealistic to assume the approximate vibration levels induced by construction activities at this stage.

6.5 Groundwater

It is understood that the proposed expansion at the subject site will consist of a private well and septic system. A new drilled well (Tag # A378991) was constructed in support of the proposed development. The MECP Water Well Record (WWR) indicates that the well extends to approximately 36.5 m below ground surface (bgs) with limestone bedrock encountered from ground surface. A copy of the WWR has been included in Appendix 1.

A hydrogeological assessment and terrain analysis was prepared by Paterson for the subject site. Based on the review and analysis completed, it is Paterson's opinion that the water supply aquifer underlying the subject site can support the proposed development from both a quality and quantity perspective. The hydrogeological assessment and terrain analysis for the subject site has been included in Appendix 2.

The subject well has been noted to be screened in the bedrock aquifer with sufficient vertical and horizontal separation between the current and future quarry operation and depth of well at the subject site. Therefore, the potential of the quarry operations to interfere with the water supply at the subject site is negligible. It is further understood that continuous groundwater monitoring and annual reporting is required by the Goulbourn Quarry under their current Permit to Take Water (PTTW) issued by the MECP (PTTW No. 2554-CLGQ53).

Similarly, the maximum total daily design volume of water required to support the proposed commercial development expansion (10,000 L/day) is not expected to impact the current and future quarry operation.

7.0 Conclusions

Based on Paterson's review of the subject site relating to noise, dust, traffic, vibration and groundwater impacts, the proposed commercial development will not be impacted by the existing and future operations at the Goulbourn Quarry currently operated by Thomas Cavanagh Construction Ltd. Alternatively, the proposed commercial expansion will not create excessive traffic, dust or noise that would impact the existing bedrock quarry.

In conclusion, it is our opinion that the Goulbourn Quarry will not have any adverse effects on the proposed development.

8.0 Statement of Limitations

The recommendations provided in this report are in accordance with our present understanding of the project.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than CFT Group, or their agent(s) is not authorized without review by Paterson Group for the applicability of our recommendations to the altered use of the report.

Paterson Group Inc.



Carly R. Ladd, B.Sc.



Nicholas Zulinski, P.Geo., géo.

Report Distribution:

- CFT Group (e-mail copy)
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APPENDIX 1

Paterson Drawing PG7229-1 – Site Plan

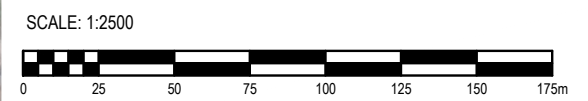
**McRobie Architects – Zoning Information, Location Plan, Existing and New Site
Plan – SP-A01**

McRobie Architects – Site Plan Detail Proposed – SP-A02

Historical Aerial Photographs

Aggregate Resource – Goulburn Quarry

MECP Water Well Record - Tag # A378991

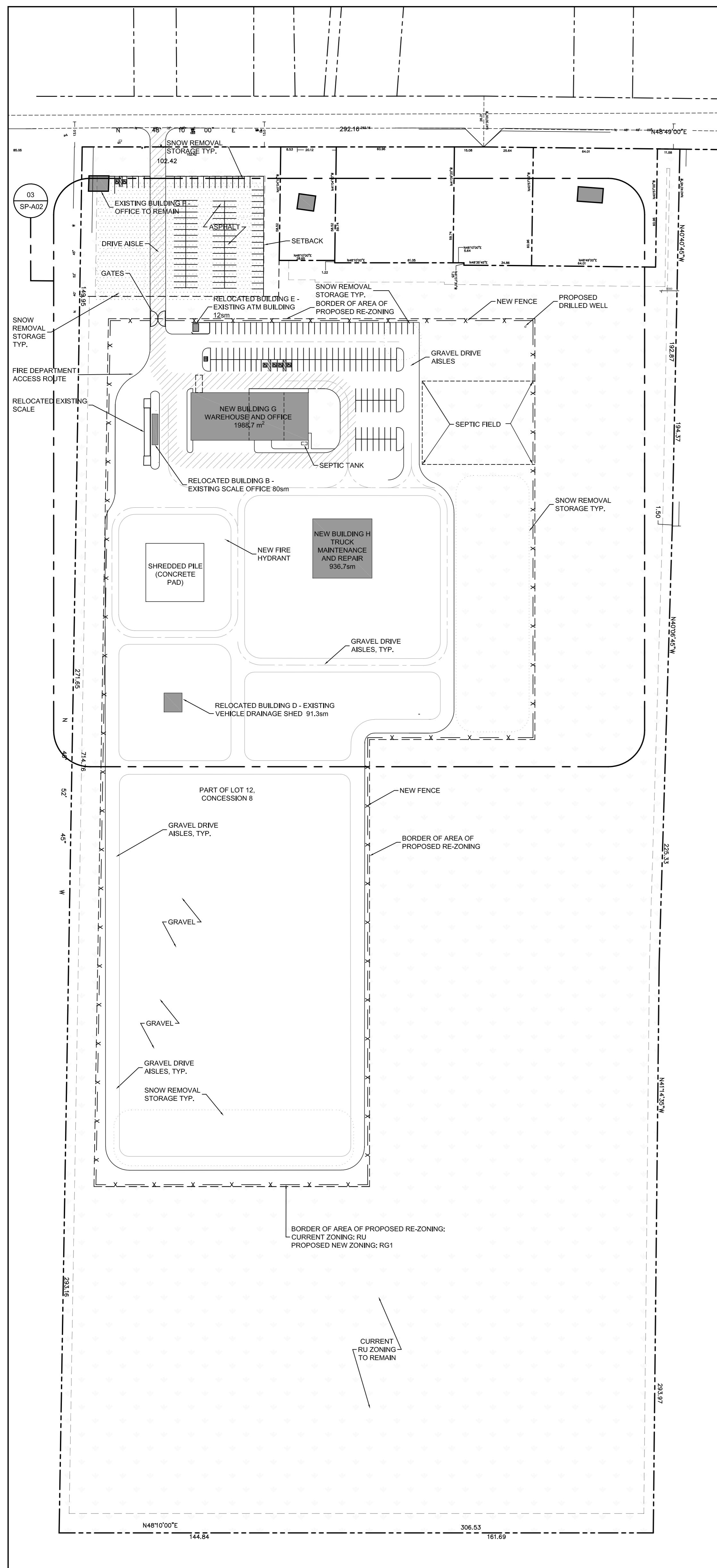


NO.	REVISIONS	DATE	INITIAL

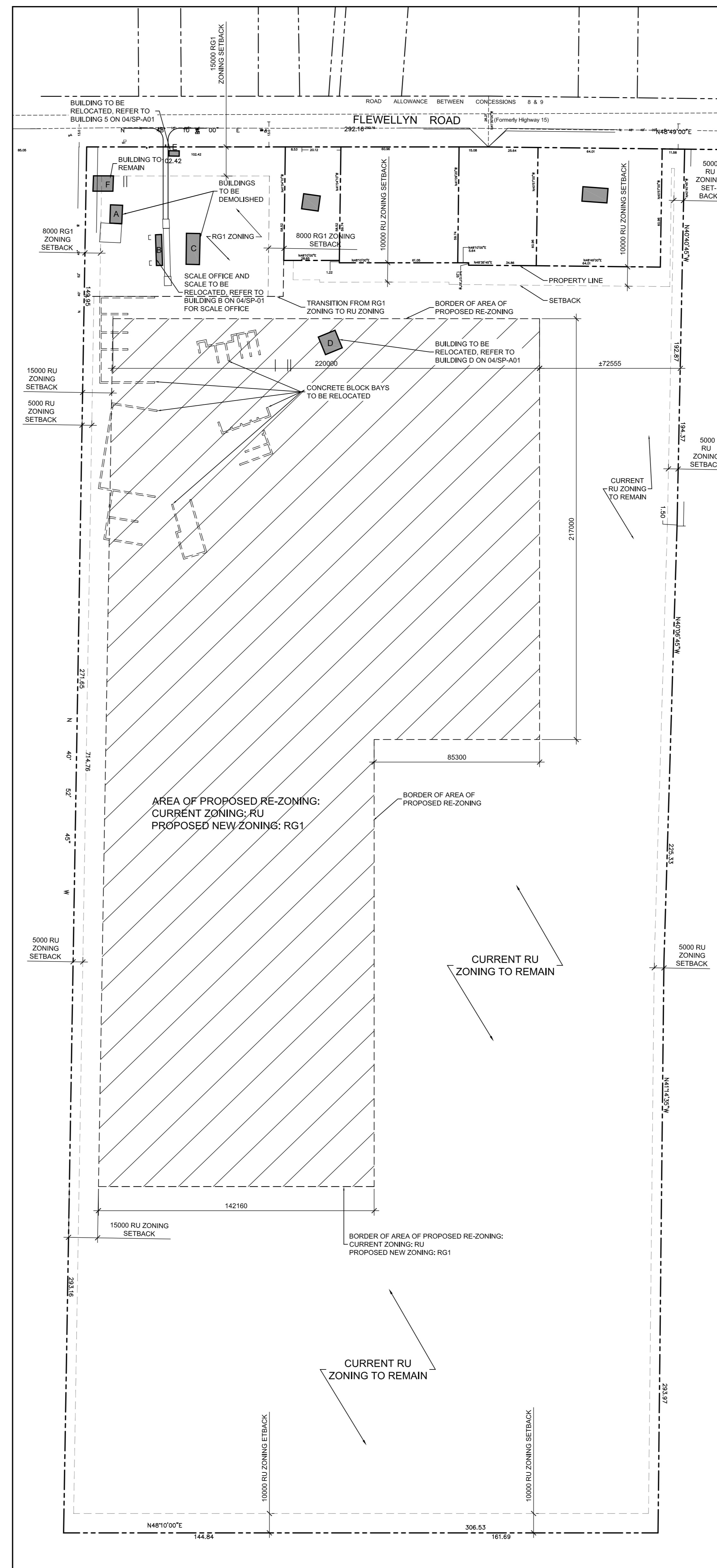
CFT GROUP
MINERAL RESOURCE IMPACT ASSESSMENT
PROPOSED DEVELOPMENT
7628 FLEWELLYN ROAD
ONTARIO

OTTAWA,
 Title: **SITE PLAN**

Scale:	1:2500	Date:	09/2024
Drawn by:	ZS	Report No.:	PG7229-1
Checked by:	CL	Dwg. No.:	PG7229-1
Approved by:	NZ	Revision No.:	



04 FULL SITE PLAN: NEW LAYOUT
SP-A01 SCALE: 1:1250



03 FULL SITE PLAN - EXISTING BUILDINGS, ZONING AND PROPOSED REZONING
SP-A01 SCALE: 1:1500

SITE INFORMATION:

SITE AREA: 20.725 hectares / 51.21 acres
LEGAL DESCRIPTION: PART OF LOT 12, CONCESSION 8
GEOGRAPHIC TOWNSHIP OF GOULBOURN
CITY OF OTTAWA
PIN: 04438-0006

BUILDING INFORMATION

EXISTING BUILDING AREA:	
BUILDING A - FERROUS METALS	59.0 SM
BUILDING B - WEIGH SCALE OFFICE	49.9 SM
BUILDING C - STAFF TRAILERS	111.8 SM
BUILDING D - VEHICLE DRAINAGE SHED	91.4 SM
BUILDING E - ATM	14.5 SM
BUILDING F - OFFICE	81.4 SM
TOTAL	408.0 SM

NOTE: BUILDINGS A & C ARE PROPOSED TO BE DEMOLISHED; BUILDINGS B, D & E ARE PROPOSED TO BE RELOCATED

NEW BUILDING AREA:	
BUILDING G - WAREHOUSE AND OFFICE (2 STOREYS)	2,008.6 SM
BUILDING H - TRUCK MAINTENANCE AND REPAIR	937.0 SM
TOTAL AREA PROPOSED	2,945.6 SM

EXISTING TO REMAIN AND TO BE RELOCATED BUILDING AREA:	
BUILDING B - WEIGH SCALE OFFICE (RELOCATED)	49.9 SM
BUILDING D - VEHICLE DRAINAGE SHED (RELOCATED)	91.4 SM
BUILDING E - ATM (RELOCATED)	14.5 SM
BUILDING F - OFFICE	81.4 SM
TOTAL TO REMAIN	237.2 SM

ZONING INFORMATION (CITY OF OTTAWA BYLAW 2008 250)

CURRENT ZONING DESIGNATIONS: RG1(21) - RURAL GENERAL INDUSTRIAL
RU - RURAL COUNTRYSIDE

RG1 ZONING IS TO REMAIN; A PORTION OF THE AREA CURRENTLY ZONED AS RU IS PROPOSED TO BE ZONED AS RG1

ZONING BYLAW 2008-250 (Part 11 Sections 219, 220 and 227)

RG1 PERMITTED USES:	RU PERMITTED USES:
ANIMAL CARE ESTABLISHMENT	AGRICULTURAL USE
ANIMAL HOSPITAL	AGRICULTURE-RELATED USE
AUTOMOBILE BODY SHOP	ANIMAL CARE ESTABLISHMENT
AUTOMOBILE DEALERSHIP	ANIMAL HOSPITAL
AUTOMOBILE SERVICE STATION	ARTIST STUDIO
CANNABIS PRODUCTION FACILITY	BED AND BREAKFAST
DRIVE-THROUGH FACILITY	CANNABIS PRODUCTION FACILITY
DWELLING UNIT	CEMETERY
GAS BAR	DETACHED DWELLING
HEAVY EQUIP. & VEHICLE SALES, RENTAL & SERV.	EQUESTRIAN ESTABLISHMENT
KENNEL	ENVIRON. PRESERVE & EDUCATIONAL AREA
LEAF AND YARD WASTE COMPOSTING FACILITY	FORESTRY OPERATION
LIGHT INDUSTRIAL USES	GROUP HOME
PARKING LOT	HOME-BASED BUSINESS
PRINTING PLANT	HOME-BASED DAY CARE
RETAIL STORE (LIMITED TO AGRI. CONST. & LANDSCAPE EQUIP. & SUPPLIES)	KENNEL
SERVICE AND REPAIR SHOP	ON-FARM DIVERSIFIED USE
STORAGE YARD	RETIREMENT HOME
TRUCK TRANSPORT TERMINAL	SECONDARY DWELLING UNIT
WAREHOUSE	
WASTE PROCESSING AND TRANSFER FACILITY (NON-PUTRESCIBLE)	

EXCEPTION 21R:
A DETACHED DWELLING MUST BE ACCESSORY TO A PRINCIPAL USE.

ZONING PROVISIONS (TABLE 219 AND 227):

	RG1	RU
MINIMUM LOT WIDTH:	60 M	50 M (60 M IF AGRICULTURAL)
MINIMUM LOT AREA:	8.0 HA	0.8 HA (2.0 HA IF AGRICULTURAL)
MINIMUM SETBACKS:		
FRONT YARD:	15.0 M	10.0 M
REAR YARD:	15.0 M	10.0 M
INTERIOR SIDE YARD:	8.0 M	5.0 M
CORNER SIDE YARD:	12.0 M	10.0 M
MAXIMUM BUILDING HEIGHT:	15.0 M	12.0 M
MAXIMUM LOT COVERAGE:	50%	20%

PARKING (Part 4, Sections 100-114)

PARKING DESIGNATION: SCHEDULE 1A: AREA D - RURAL

PARKING SPACES (TABLE 101, ROWS N49, N59 AND N95):

MINIMUM PARKING REQUIRED:	
LIGHT INDUSTRIAL:	8 (0.8 PER 100 SM OF GFA)
OFFICE:	24 (2.4 PER 100 SM OF GFA)
WAREHOUSE:	4 (0.4 PER 100 SM OF GFA)
TOTAL	36

PROPOSED PARKING : 224 (INCLUDING 91 FOR "CFT AUTO" STOCK)

PARKING AREA LANDSCAPING PROVISIONS (SECTION 110):

LANDSCAPE BUFFER REQUIRED: 1.5 M FOR PARKING AREAS NOT ABUTTING A STREET
PROPOSED: MINIMUM 1.5 M

BICYCLE PARKING (SECTION 111): 1 PER 1,000 SM

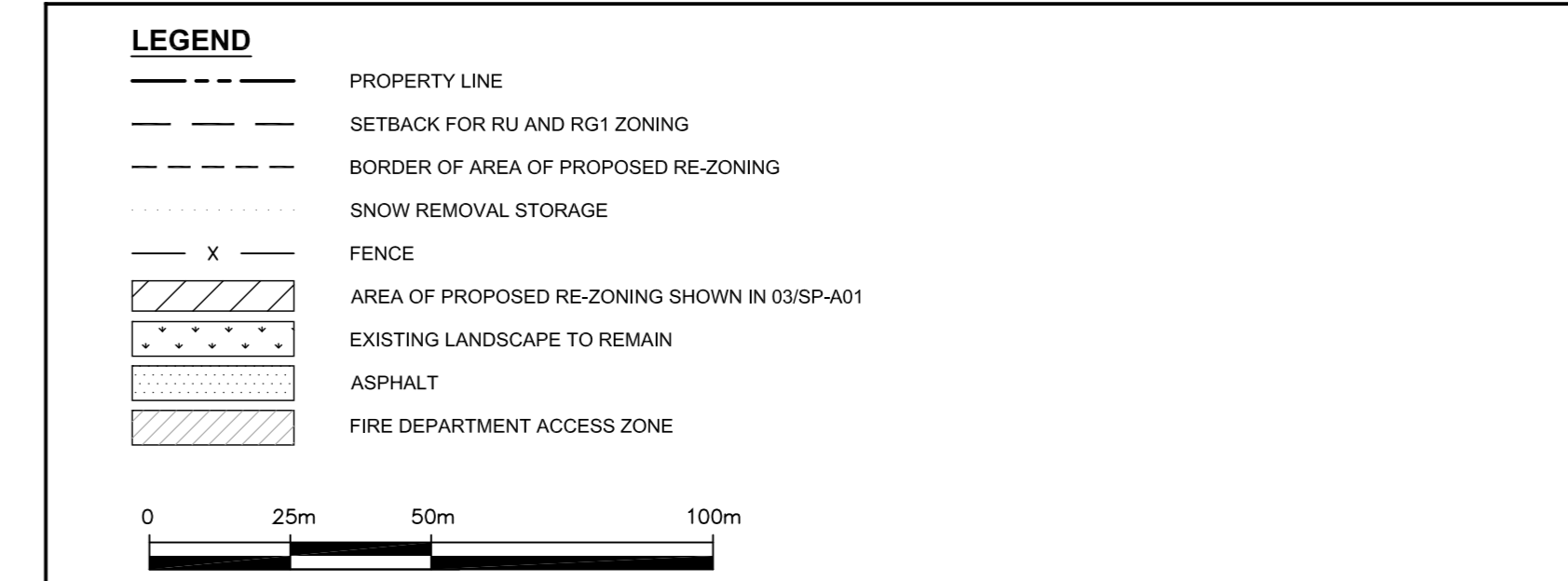
REQUIRED FOR BUILDING G:	3	REQUIRED FOR BUILDING H:	1
PROPOSED FOR BUILDING G:	3	PROPOSED FOR BUILDING H:	1

NOTE THAT BUILDING G AND BUILDING H PROPOSED BICYCLE PARKING WILL BE PROVIDED IN ONE LOCATION CLOSE TO BUILDING G

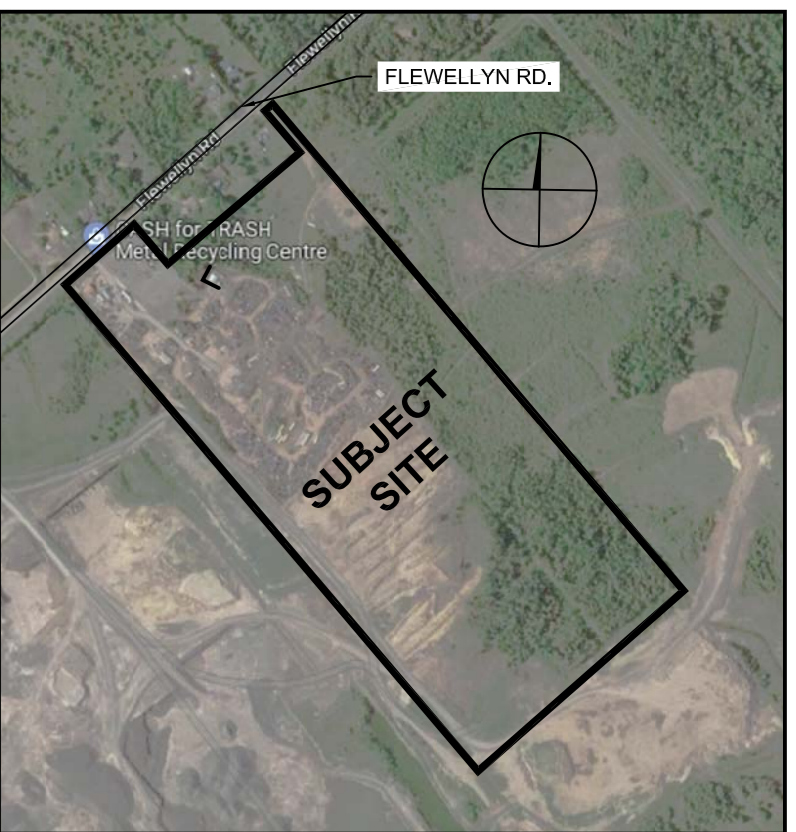
SEE 03/SP-A02 FOR CONTINUATION OF ZONING INFORMATION

02 SITE, BUILDING AND ZONING INFORMATION

SP-A01 SCALE: NA

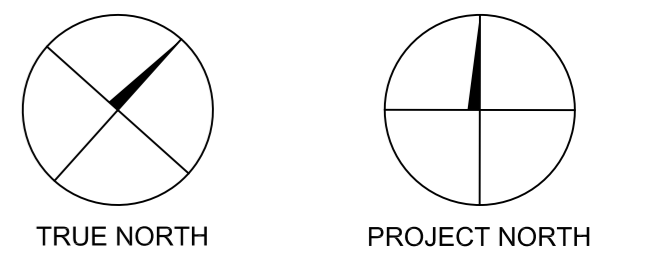


01 LEGEND & SCALE
SP-A01 SCALE: NA



LOCATION PLAN

North



Revisions

No.	By	Description	Date
01	JT	ISSUED FOR SITE PLAN APPLICATION	31 JAN 2024
02	JT	REVISED AND ISSUED FOR REVIEW	15 AUG 2024

Project

**CFT
SITE PLAN
ZONING AMENDMENT**

7628 FLEWELLYN RD., OTTAWA

Drawing

**ZONING INFORMATION
LOCATION PLAN, EXIST.
AND NEW SITE PLAN**

Scale AS NOTED Stamp

Drawn JAS/KE

Checked

Project No.

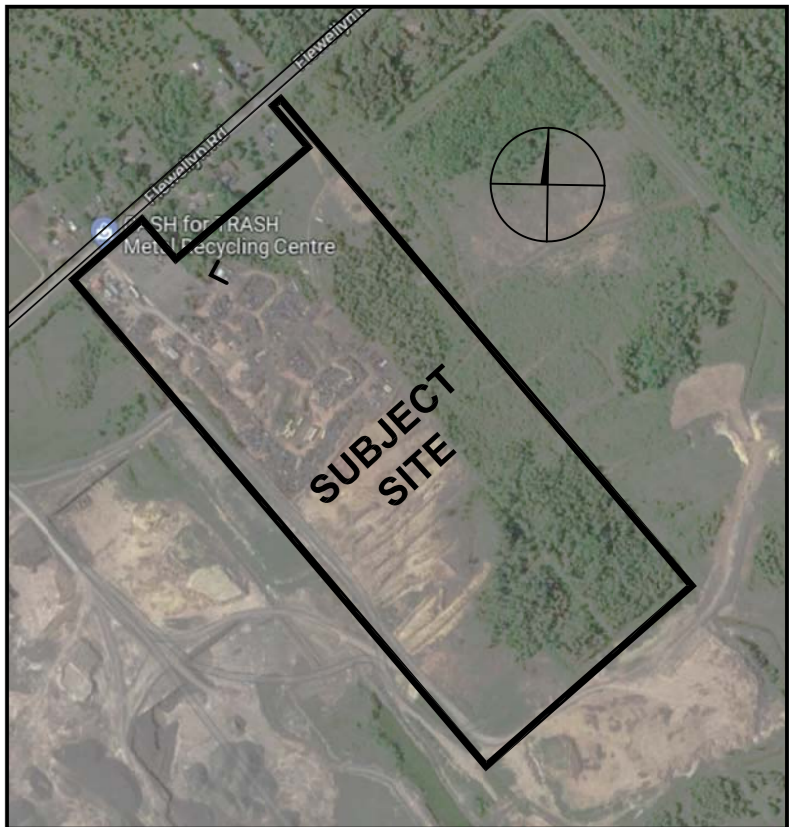
21-139

Date

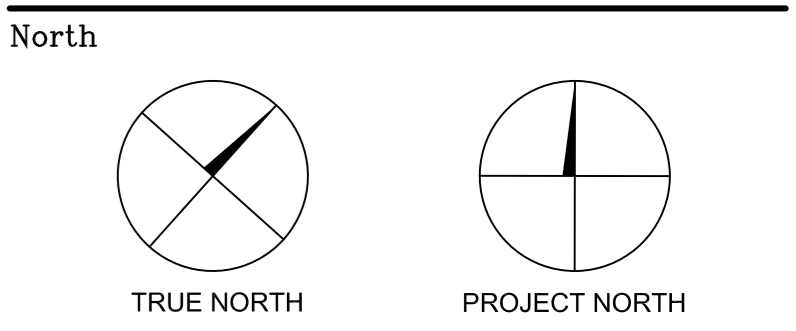
AUGUST 2021

Drawing No.

SP-A01



LOCATION PLAN



Revisions

No.	By	Description	Date
01	JT	ISSUED FOR SITE PLAN APPLICATION	31 JAN 2024
02	JT	REVISED AND ISSUED FOR REVIEW	15 AUG 2024

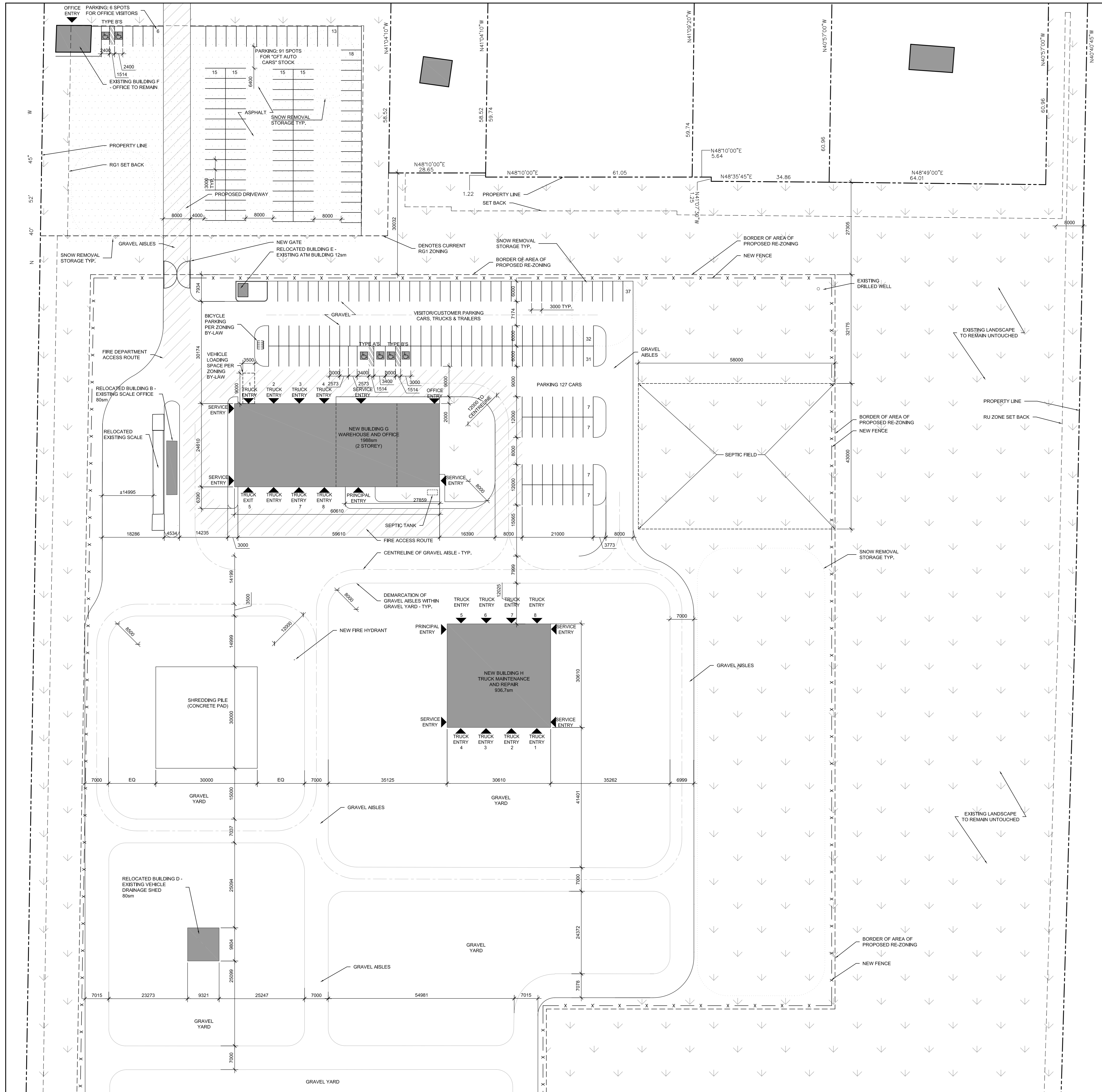
Project
**CFT
PROPOSED SITE PLAN
ZONING AMENDMENT**

7628 FLEWELLYN RD., OTTAWA

Drawing
**SITE PLAN DETAIL
PROPOSED**

Scale AS NOTED
Stamp
Drawn JAS/KE
Checked

Project No. 21-139
Drawing No. **SP-A02**
Date AUGUST 2021



SEE 03/SP-A02 FOR CONTINUATION OF ZONING INFORMATION

LOADING SPACES (SECTION 113, TABLE 113A):

REQUIRED FOR BUILDING G:	1
PROPOSED FOR BUILDING G:	1
REQUIRED FOR BUILDING H:	0
PROPOSED FOR BUILDING H:	0
MINIMUM LANE WIDTH: (2 DIR.):	6 M
MINIMUM AISLE WIDTH:	9 M
MINIMUM LOADING SPACE WIDTH:	3.5 M
MINIMUM LOADING SPACE LENGTH:	9 M

BARRIER-FREE PARKING (BYLAW 2017-301 (PART C, SECTION 111)) AND CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS, ITEM 3.1.2, TABLE 3: BASED ON 133 PARKING SPACES (EXCLUDES 91 FOR "CFT AUTO" STOCK) REQUIRED ACCESSIBLE SPACES: 6 (3 TYPE A AND 3 TYPE B)

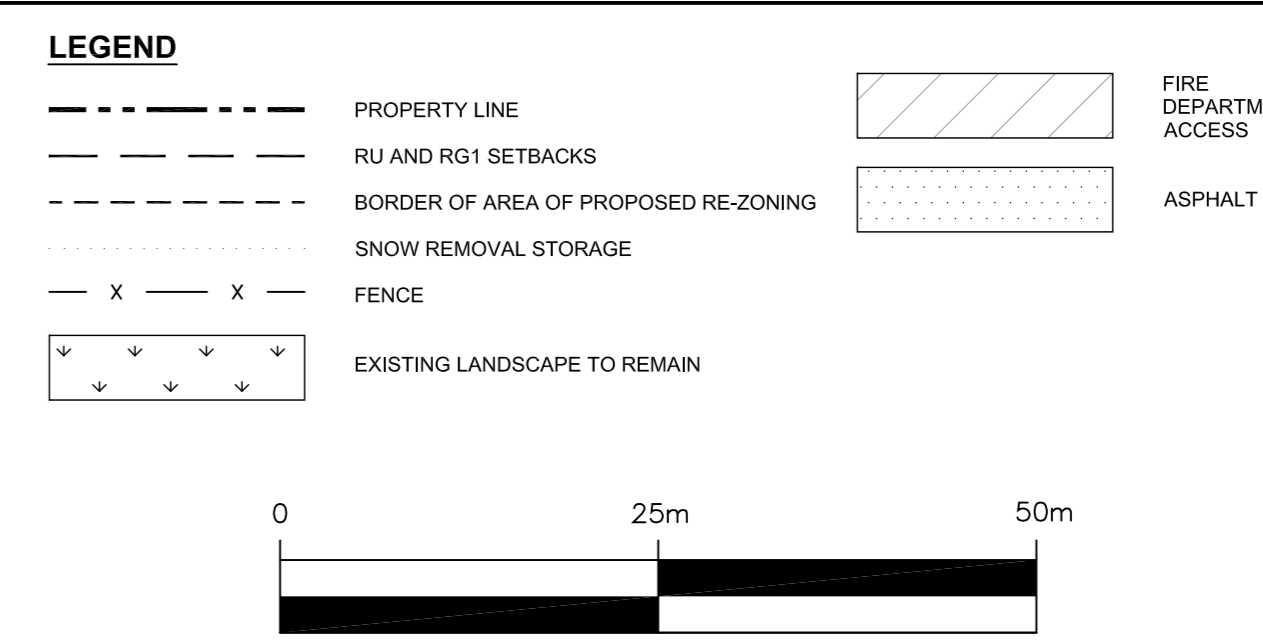
03 ZONING INFORMATION CONTINUED

SCALE: N/A

O.B.C Reference	O.B.C Compliance	Compliance
3.2.5.4	For buildings greater than 600 square meters, provide access routes for fire department vehicles to face of building with principal entrance, and all building faces having access opening.	Complies
3.2.5.5	Locate fire access routes between 3m and 15m from face of building, allow for fire equipment vehicle to park adjacent the building and have an unobstructed path to hydrant.	Complies
3.2.5.6	Portions of the roadways and yard acting as access route must have a 6m minimum clear width, 12m minimum centerline radius, 5m minimum overhead clearance, and 90m maximum dead-end. In addition grading must not slope more than 1 in 12.5 over 15m, and be able to support expected equipment loads.	Complies
3.2.5.7	Locate Hydrant within 90m of any point on required building faces.	Complies

02 BUILDING CODE REVIEW

SCALE: N/A



01 LEGEND & SCALE

SCALE: N/A

04 ENLARGED SITE PLAN - PROPOSED

SCALE: 1:500



FIGURE 1

HISTORICAL PHOTOGRAPH – 1976

↑
N



FIGURE 2

HISTORICAL PHOTOGRAPH – 1999

↑
N



FIGURE 3

HISTORICAL PHOTOGRAPH - 2002



FIGURE 4

HISTORICAL PHOTOGRAPH - 2008

↑
N



FIGURE 5
HISTORICAL PHOTOGRAPH - 2014



FIGURE 6
HISTORICAL PHOTOGRAPH - 2017



FIGURE 7
HISTORICAL PHOTOGRAPH - 2019

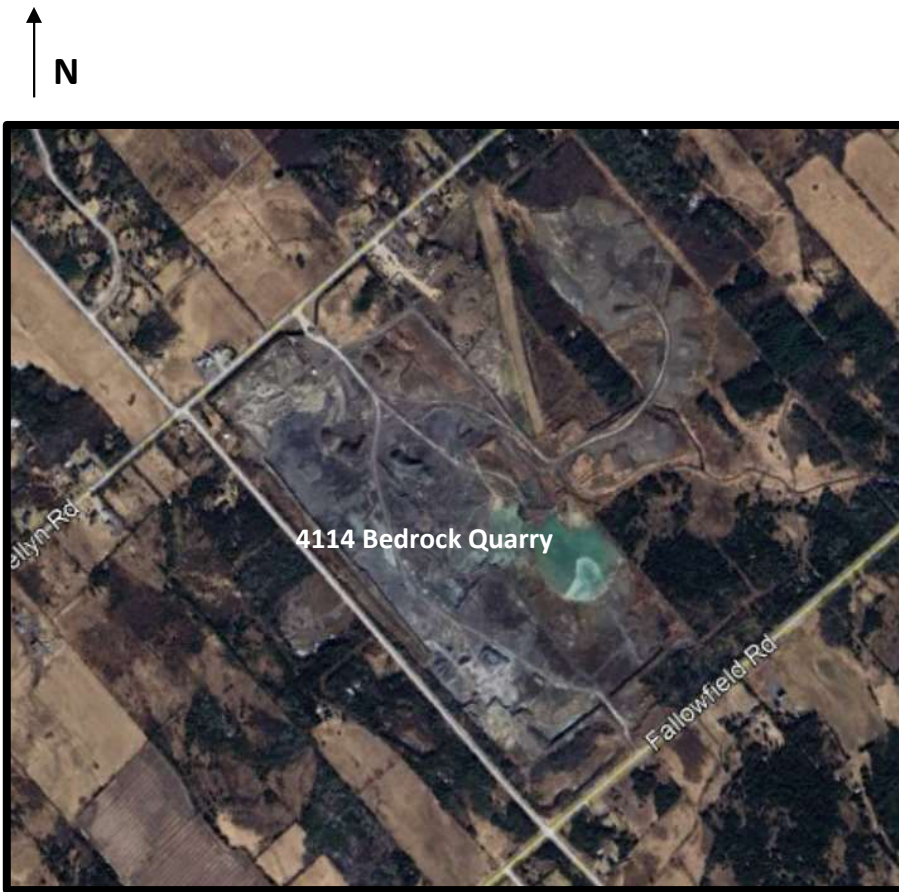
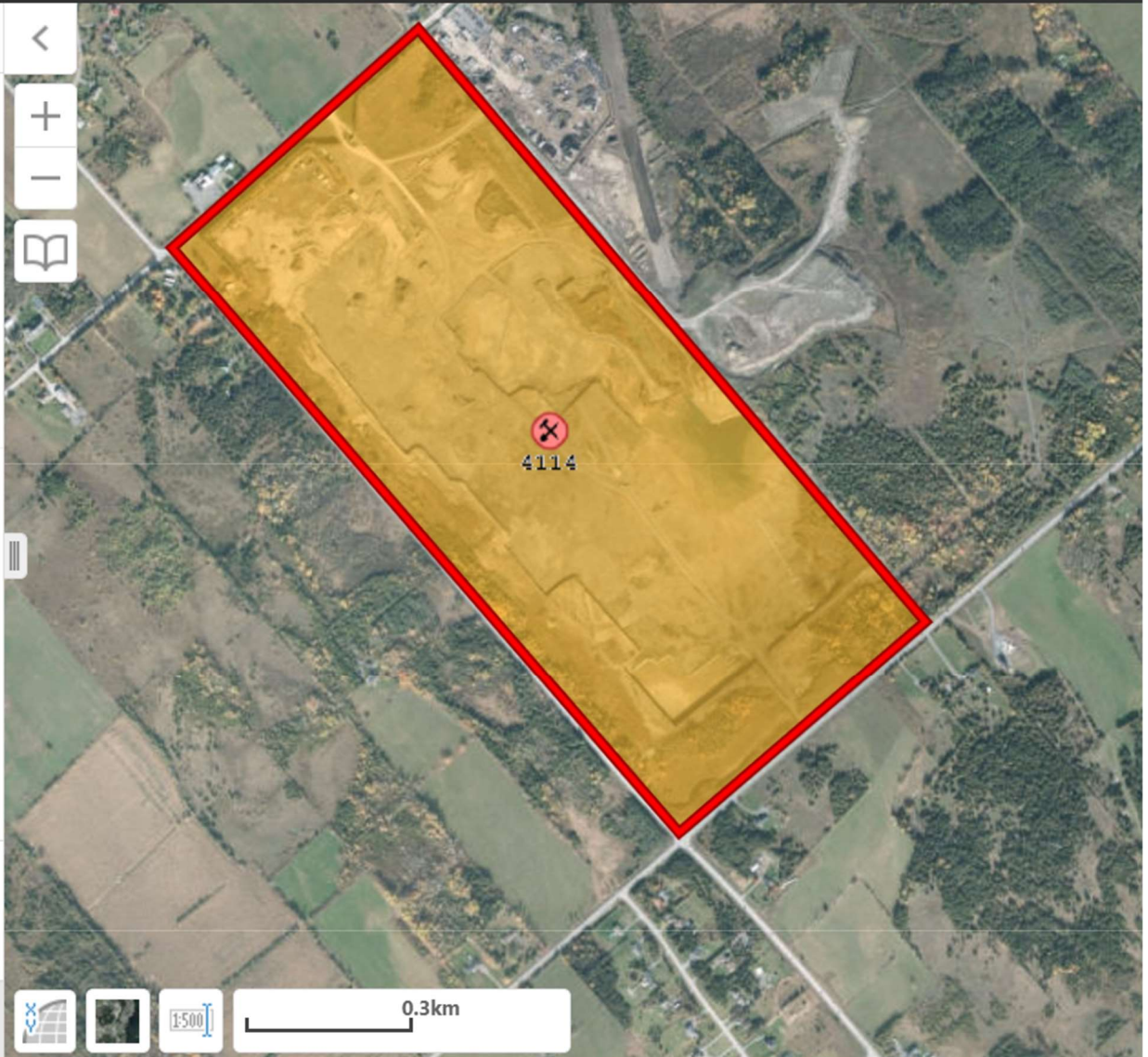


FIGURE 8
HISTORICAL PHOTOGRAPH - 2024

← Aggregate Site Authorized (1) 

☆ ALPS ID: 4114  

Client Name: THOMAS CAVANAGH CONSTRUCTION LIMITED	
Approval Type: CLASS A LICENCE > 20000 TONNES	Operation Type: Both (Pit and Quarry)
Max. Annual Tonnage: 1000000	Authorized Area (ha): 88.7
Location Name: Goulbourn Quarry	



Displaying 1 - 1 (Total: 1)

◀◀ Page 1 of 1 ▶▶

Measurements recorded in: Metric Imperial

A378991

Regulation 802 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information
 First Name: Last Name/Corporation: 2052196 Ontario Inc. E-mail Address: Well Constructed by Well Owner:

Mailing Address (Street Number/Name): 7628 Flewellyn Road Municipality: Sarnia Postal Code: K2S 1B6 Telephone No. (no area code):

Well Location: 7628 Flewellyn Road Township: Chatham County/Parish: 12 Latitude: 42 Longitude: 81

Address of Well Location (Street Number/Name): 7628 Flewellyn Road City/Town/Village: Chatham Postal Code: M6A 1R7

UTM Coordinates (Northings, Eastings): City: Ontario State: Ontario

NAD 83: 18 424230 5005379

Description and Bedrock Material (Mandatory) Logging Record (see instructions on the back of this form)

General Color	Most Common Material	Other Material	General Description	Depth (m)	Depth (ft)
Grey	Limestone			0	0
Grey	Limestone w/ white Quartzite	Quartzite	mix	85	100
Grey	Limestone w/ white Quartzite	Quartzite	mix	100	110
Grey	Limestone w/ white Quartzite	Quartzite	mix	110	120

Annular Space	Annular Space	Volume (m ³)
Depth (m) or (ft): 42	Type of material (sand, silt, gravel, etc.) and Type: neat cement	10.92

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool <input type="checkbox"/> Rotary (Conventional) <input type="checkbox"/> Rotary (Reverse) <input type="checkbox"/> Auger <input checked="" type="checkbox"/> Jet <input type="checkbox"/> Other specify:	<input type="checkbox"/> Domestic <input checked="" type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Other specify:

Construction Record - Casing	Depth (m)	Depth (ft)
Hole Diameter (mm, inches, feet, etc.): 6 1/4" Steel Material (Steel, Aluminum, etc.): Steel Weight (kg/m, lb/ft): 100 Depth (m): 42 Depth (ft): 120	+2'	42'

Construction Record - Screen	Depth (m)	Depth (ft)
Outside Diameter (mm, inches, feet, etc.): Material (Steel, Aluminum, etc.): Mesh Size (mm, inches, feet, etc.): Depth (m): Depth (ft):		

Water Details	Well Diameter
Water found at Depth (m): 100 Kind of Water: Gas Water found at Depth (m): 110 Kind of Water: Gas Water found at Depth (m): Kind of Water: Gas	Depth (m): 0' Depth (ft): 42' Depth (m): 42' Depth (ft): 120'

Well Contractor and Well Technician Information
Business Name of Well Contractor: Air Rock Drilling Co. Ltd. Business Address (Street Number/Name): 6050 Franktown Road City/Town/Village: Richmond Postal Code: K0A 2Z0 Business E-mail Address: air-rock@sympatico.ca Well Technician's License No.: 7861 Well Technician's Name: Hanna, Jeremy

Well Technician's License No.	Signature of Well Technician	Date
8150932170	Hanna, Jeremy	2023 05 18

Records of Well Yield Testing	Time (min)	Water Level (m)	Water Level (ft)
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify: Not tested		36.0'	37.4'
Flowing (m ³ /min, gal/min):	1	37.1	38.3
Pumping rate (m ³ /min, gal/min):	2	37.1	38
110	3	37.1	38
20	4	37.4	38
Duration of pumping:	5	37.5	38
1 hr water level and if pumping still:	10	37.3	38
37.4'	15	37.3	38
2 hr water level and if pumping still:	18	37.3	38
3 hr water level and if pumping still:	20	37.4	38
4 hr water level and if pumping still:	21	37.4	38
5 hr water level and if pumping still:	25	37.4	38
6 hr water level and if pumping still:	40	37.4	38
7 hr water level and if pumping still:	50	37.4	38
8 hr water level and if pumping still:	80	37.4	38

Map of Well Location
Please provide a map below following instructions on the back of this form. #7628 FLEWELLYN ROAD Munster Road 0.9 km 200m HP-205PM S&E 100FT 2023 05 18 2023 05 18 Ministry Use Only 407849

APPENDIX 2

Gradient Wind - File No.: 21-119 – Response Letter dated September 3, 2024

**Gradient Wind - File No.: 21-119 - Stationary Noise R1- Stationary Noise
Assessment - September 3, 2024**

**Paterson Group Inc. - PH4401-LET.01- Revision 1- Hydrogeological Assessment
and Terrain Analysis – August 21, 2024**

September 3, 2024

Cash for Trash Canada
7628 Flewellyn Road
Stittsville, ON K2S 1B6

Re: Stationary Noise Assessment City Comments Response
Letter
7628 Flewellyn Road ,Stittsville
GW File No.: 21-119 – Response Letter

This letter describes how we have addressed the comments received from the City of Ottawa., dated March 15, 2024, on the Stationary Noise Assessment provided by Gradient Wind, dated April 21, 2024, for the proposed development located at 7628 Flewellyn Road, in Stittsville (Ottawa), Ontario. The City's comments are provided for context in italic text below, with our responses following. The number of each comment are per the City's original memo:

City: 28. If more sensitive land uses remain for the proposed zoning amendment the Noise study should also address proximity to the quarry. Should also address office uses in proximity to the quarry.

Gradient Wind Response:

The proposed development is for an industrial site with auxiliary office space. The ENCG defines noise sensitive land use as:

Means a land use that is sensitive to noise, whether inside and/or outside the building and that must be planned and/or designed using appropriate land use compatibility principles. Examples of sensitive land uses:

- Residential developments;
- Seasonal residential developments;
- Hospitals, nursing/retirement homes, schools, day-care centres;
- Other land uses that may contain outdoor and/or outdoor areas/spaces where an intruding noise may create an adverse effect.¹

¹ City of Ottawa, Environmental Noise Control Guidelines, Introduction and Glossary, Page 7, January 2016

As office and industrial uses nor not in the above definition the subject site is not considered a noise sensitive land use, and thus the consideration of the impact of the quarry on to the development is not necessary. Furthermore under NPC-300 an auxiliary noise sensitive space is not considered to be noise sensitive if it is within the boundary of an non -noise sensitive property, see below:

A land use that would normally be considered noise sensitive, such as a dwelling, but is located within the property boundaries of the stationary source is not considered a noise sensitive land use.²

City: 29. The footer at the bottom of page 1, referencing Long Sault Rail Yards, seems misplaced.

Gradient Wind Response

This has been corrected in the revised report.

City: 30. Please confirm that no office space is proposed for the application in section 2. If there is any, please add impacts to office staff to section 3 and thereafter

Gradient Wind Response

As stated above the auxiliary office uses are not considered to be noise sensitive as the site is an industrial site and overall, non noise sensitive.

² Ministry of Environment, Environmental Noise Guidelines (NPC-300), Definitions August 2013



This concludes our response letter to address the round of comments received from the City of Ottawa for the proposed industrial development. If you have any questions or wish to discuss our findings, please contact the undersigned.

Sincerely,

Gradient Wind Engineering Inc.



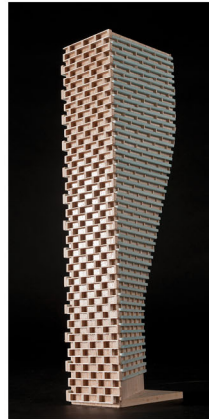
Joshua Foster, P.Eng.
Lead Engineer

Gradient Wind File 21-119 – Response Letter

**STATIONARY NOISE
ASSESSMENT**

7628 Flewellyn Road
Stittsville, Ontario

REPORT: 21-119-Stationary Noise R1



September 3, 2024

PREPARED FOR

Cash for Trash Canada
7628 Flewellyn Road
Stittsville, ON K2S 1B6

PREPARED BY

Joshua Foster, P.Eng., Lead Engineer

EXECUTIVE SUMMARY

This report describes a stationary noise assessment in support of Zoning By-Law Amendment (ZBA) and Site Plan Control (SPA) applications for the proposed recycling facility located at 7628 Flewellyn Road in Stittsville, Ontario. The property comprises a 50.0-acre approximately rectangular parcel of land, bordering Flewellyn Road from the south, and is currently occupied by an existing salvage yard on the north portion of the site. The recycling facility is to be relocated to the south portion of the site, in a 27.0-acre rectangular portion of the property land. Figure 1 illustrates the site plan and surrounding context.

The assessment was performed based on (i) theoretical noise calculation methods conforming to the City of Ottawa’s Environmental Noise Control Guidelines (ENCG); (ii) Ministry of the Environment, Conservation and Parks (MECP) NPC-300 guidelines; (iii) site plan drawing dated February 2023; (iv) a site visit conducted by Gradient Wind on November 1, 2021; (v) Gradient Wind’s experience with similar developments, and; (vi) recent satellite imagery.

The results of the current study indicate that stationary noise levels received at nearby noise sensitive dwellings, generated by the relocated waste processing and recycling operations, are expected to comply with ENCG sound level limits for a Class 2 area at all points of reception. The proposed relocation shifts sources of stationary noise farther away from points of reception, resulting in a reduction of noise received at the adjacent residential dwellings as compared to current conditions. The proposed development is expected to be compatible with the surrounding noise-sensitive dwellings, according to the assumptions outlined in Section 2.1.



TABLE OF CONTENTS

1. INTRODUCTION 1

2. TERMS OF REFERENCE 1

2.1 Assumptions 2

3. OBJECTIVES 2

4. METHODOLOGY..... 3

4.1 Perception of Noise..... 3

4.2 Criteria for Stationary Noise..... 3

4.3 Determination of Stationary Noise Source Power Levels 4

4.4 Stationary Source Noise Predictions..... 5

5. RESULTS AND DISCUSSION 8

5.1 Stationary Noise Results 8

6. CONCLUSIONS AND RECOMMENDATIONS..... 9

FIGURES



1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Fotenn Planning + Design on behalf of Cash for Trash Canada to undertake a stationary noise assessment in support of Zoning By-Law Amendment (ZBA) and Site Plan Control (SPA) applications for the proposed recycling facility located at 7628 Flewellyn Road in Stittsville, Ontario. This report summarizes the methodology, results and recommendations related to a stationary noise assessment.

The present scope of work involves assessing exterior noise levels generated by sources of anticipated stationary noise (relocated waste processing and recycling operations) introduced by the development on surrounding noise-sensitive residential properties adjacent to the subject property. The main sources of noise include three (3) cranes, one (1) bailer, one (1) loader, one (1) skid steer, truck movements and the operation of power tools. The assessment was performed based on theoretical noise calculation methods conforming to the City of Ottawa's Environmental Noise Control Guidelines¹ (ENCG), Ministry of the Environment, Conservation and Parks (MECP) NPC-300² guidelines, site plan drawing dated February 2023, a site visit conducted by Gradient Wind on November 1, 2021, Gradient Wind's experience with similar developments, and recent satellite imagery.

2. TERMS OF REFERENCE

The focus of this stationary noise assessment is the property located at 7628 Flewellyn Road in Stittsville, Ontario. For the purposes of this study, Flewellyn Road is referred to as project north. The property comprises a 50.0-acre approximately rectangular parcel of land, bordering Flewellyn Road from the south, and is currently occupied by an existing salvage yard on the north portion of the site.

The recycling facility is to be relocated to the south portion of the site, in a 27.0-acre rectangular portion of the property land. A 7.0-meter driveway is located north of the rezoning area, providing access to the relocated facilities from Flewellyn Road (north), while trees are retained to the east of the site. The site plan contains a warehouse and office, mechanic shop, vehicle processing building and a large outdoor metal storage area at the south end of the property. The surroundings of the proposed development are primarily open fields and wooded areas, with existing residential uses to the north and east, as well as an

¹ City of Ottawa Environmental Noise Control Guidelines, January 2016

² Ministry of the Environment, Conservation and Parks (MECP), Environmental Noise Guideline – Publication NPC-300, August 2013



existing quarry and future residential land parcel to the west. Figure 1 illustrates the site plan and surrounding context, and Figure 2 illustrates the location of points of reception (POR) included in this study.

Under the definition of a noise sensitive land use, office and industrial uses are not listed, therefore the impacts of the surroundings on the site, do not need to be considered. Furthermore NPC-300 states, “a land use that would normally be considered noise sensitive, such as a dwelling, but is located within the property boundaries of the stationary source is not considered a noise sensitive land use.”

2.1 Assumptions

The sound power levels used in this assessment were based on actual site measurements taken by Gradient Wind on November 1, 2021, and previous experience with similar developments. The following assumptions have been made in the analysis:

- (i) Operations at the facility occur only during the daytime period (08:00 - 19:00).
- (ii) Sources of stationary noise include three (3) cranes, one (1) bailer, one (1) loader, one (1) skid steer, truck movements and the operation of power tools.
- (iii) Sources of impulsive stationary noise (i.e., bangs) are produced by some of the operations such as throwing/splitting/crushing of recycled materials.
- (iv) In a 1-hour period during daytime hours (08:00 - 19:00), fifteen (15) light-, five (5) medium-, and two (2) heavy-truck movements occur.
- (v) Background noise is excluded from consideration as Flewellyn Road is classified as a rural collector road with minimal roadway traffic during off-peak hours. The area is considered a Class 2 Area.
- (vi) The ground region was modelled as absorptive for unpaved surfaces (soft ground).

3. OBJECTIVES

The main goals of this work are to (i) calculate the future noise levels on the surrounding noise-sensitive dwellings produced by stationary noise sources and (ii) ensure that exterior noise levels do not exceed the allowable limits specified by the ENCG, as outlined in Section 4 of this report.

4. METHODOLOGY

The impact of the external stationary noise sources on the nearby residential areas was determined through computer modelling. Stationary noise source modelling is based on the software program *Predictor-Lima* developed from the International Standards Organization (ISO) standard 9613 Parts 1 and 2. This computer program simulates three-dimensional surfaces and first reflections of sound waves over a suitable spectrum for human hearing. This methodology has been used on numerous assignments and has been accepted by the MECP as part of Environmental Compliance Approvals applications. Fourteen (14) receptor locations were selected for the study site, as illustrated in Figure 2.

4.1 Perception of Noise

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Its measurement is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level (2×10^{-5} Pascals). The 'A' suffix refers to a weighting scale, which represents the noise perceived by the human ear. With this scale, a doubling of sound power at the source results in a 3 dBA increase in measured noise levels at the receiver and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

Stationary sources are defined in NPC-300 as “a source of sound or combination of sources of sound that are included and normally operated within the property lines of a facility and includes the premises of a person as one stationary source, unless the dominant source of sound on those premises is construction”³.

4.2 Criteria for Stationary Noise

The equivalent sound energy level, L_{eq} , provides a weighted measure of the time varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time varying noise level over a selected period of time. For stationary sources,

³ NPC – 300, page 16

the L_{eq} is commonly calculated on an hourly interval, while for roadways, the L_{eq} is calculated on the basis of a 16-hour daytime/8-hour nighttime split.

Noise criteria taken from NPC-300 apply to outdoor points of reception (POR). A POR is defined under NPC-300 as “any location on a noise sensitive land use where noise from a stationary source is received”⁴. A POR can be located on an existing or zoned for future use premises of permanent or seasonal residences, hotels/motels, nursing/retirement homes, rental residences, hospitals, campgrounds, and noise sensitive buildings such as schools and places of worship. The recommended maximum noise levels for a Class 2 environment at a POR are outlined in Table 1 below. The residential areas relevant to this study are defined as Class 2 because they border on Flewellyn road, which is a rural collector roadway. Furthermore, an operational quarry borders the site directly to the west. These conditions indicate that the sound field is dominated by the activities of people (road traffic and industrial noise) during the daytime period. The sound levels limits used in this assessment are the exclusionary limits for Class 2 area, as listed in Table 1.

TABLE 1: EXCLUSIONARY LIMITS FOR CLASS 2 AREA

Time of Day	Outdoor Points of Reception (dBA)	Plane of Window (dBA)
07:00 – 19:00	50	50
19:00 – 23:00	45	50
23:00 – 07:00	N/A	45

4.3 Determination of Stationary Noise Source Power Levels

Sound power levels for this assessment were based on site measurements taken by Gradient Wind on November 1, 2021, and previous experience with similar developments. Table 2 (below) identifies all equipment considered in this assessment and their corresponding sound power levels.

TABLE 2: EQUIPMENT SOUND POWER LEVELS (dBA)

Source	Description	Height Above Grade (m)	Frequency (Hz)							
			63	125	250	500	1000	2000	4000	8000

⁴ NPC – 300, page 14

S1-S3	Crane	3.0	87	97	97	100	112	101	97	87	113
S4	Bailer	2.0	87	97	87	100	108	97	97	87	110
S5	Loader	2.0	73	83	87	96	96	94	89	78	101
S6	Skid Steer	1.5	-	-	-	-	96	-	-	-	96
S7	Light-Truck	1.25	-	-	-	-	96	-	-	-	90
S8	Medium-Truck	2.0	-	-	-	-	100	-	-	-	100
S9 - S10	Heavy-Truck	2.0	73	83	87	96	101	94	89	78	103
S11	Power Tools	1.5	-	-	-	-	96	-	-	-	96

4.4 Stationary Source Noise Predictions

The impact of stationary noise sources on nearby residential areas was determined by computer modelling using the software program Predictor-Lima, which has an algorithm for outdoor noise propagation based on ISO standard 9613 Parts 1 and 2. The methodology has been used on numerous assignments and has been accepted by the Ministry of the Environment, Conservation and Parks (MECP) as part of Environmental Compliance Approval applications.

A total of fourteen (14) receptor locations were chosen at nearby noise-sensitive dwellings to measure the noise impact at points of reception (POR) during the daytime period (07:00 - 19:00). POR locations include plane of window (POW) and outdoor points of reception (OPOR) of the adjacent residential properties. Sensor locations are described in Table 3 and illustrated in Figure 2. Sources were modeled as point sources and moving sources, while buildings were defined as 3D objects. As previously mentioned, the model represents a “worse-case scenario” where all the equipment is in operation. Table 4 below contains Predictor-Lima calculation settings. These are typical settings that have been based on ISO 9613 standards and guidance from the MECP. Ground absorption over the study area was determined based on topographical features (such as water, concrete, grassland, etc.). An absorption value of 0 is representative of hard ground, while a value of 1 represents grass and similar soft surface conditions. Predictor-Lima modelling data is available upon request.

To predict the effect of relocating the waste processing and recycling operations towards the south of the site, the following methodology was applied. First, a model was constructed to correlate with the measurement locations and results from the site visit conducted by Gradient Wind on November 1, 2021.

The initial model was simulated existing noise conditions at the waste processing and recycling facility. Once the model accurately represented the site measurements, all sources were shifted to the south with reference to the site plan (McRobie Architects, August 2021). This second iteration of the model positioned all noise producing equipment approximately 300 meters to the south with respect to the initial model. Simulations were then completed to predict the noise impacts of relocated equipment at all relevant points of reception.



TABLE 3: RECEPTOR LOCATIONS

Receptor Number	Receptor Location	Height Above Grade (m)
1	OPOR - Future Residential (Northwest)	1.5
2	POW - 7623 Flewellyn Road	1.5
3a	POW - 7609 Flewellyn Road	1.5
3b	OPOR - 7609 Flewellyn Road	1.5
4	POW - 7603 Flewellyn Road	1.5
5a	POW - 7598 Flewellyn Road	1.5
5b	OPOR - 7598 Flewellyn Road	1.5
6a	POW - 7592 Flewellyn Road	1.5
6b	OPOR - 7592 Flewellyn Road	1.5
7a	POW - 7586 Flewellyn Road	1.5
7b	OPOR - 7586 Flewellyn Road	1.5
8a	POW - 7576 Flewellyn Road	1.5
8b	OPOR - 7576 Flewellyn Road	1.5
9	POW - 7524 Flewellyn Road	1.5

TABLE 4: CALCULATION SETTINGS

Parameter	Setting
Meteorological correction method	Single value for CO
Value CO	2.0
Ground attenuation factor for lawn areas	1
Ground attenuation factor for roadways and paved areas	0
Temperature (K)	283.15
Pressure (kPa)	101.33
Air humidity (%)	70

5. RESULTS AND DISCUSSION

5.1 Stationary Noise Results

Noise levels received at the surrounding noise-sensitive dwellings, produced by relocated waste processing and recycling operations are presented in Table 5. Noise levels are based on assumptions in Section 2.1. Noise contours at 1.5 metres above grade for all stationary noise sources are illustrated in Figure 3. As Table 5 summarizes, stationary noise levels meet Class 2 criteria at all receptors.

TABLE 5: NOISE LEVELS FROM STATIONARY SOURCES

Receptor Number	Receptor Location	Noise Level (dBA)	Daytime Sound Level Limits	Meets Class 2 Criteria
1	OPOR - Future Residential (Northwest)	49	50	YES
2	POW - 7623 Flewellyn Road	45	50	YES
3a	POW - 7609 Flewellyn Road	47	50	YES
3b	OPOR - 7609 Flewellyn Road	44	50	YES
4	POW - 7603 Flewellyn Road	45	50	YES
5a	POW - 7598 Flewellyn Road	48	50	YES
5b	OPOR - 7598 Flewellyn Road	49	50	YES
6a	POW - 7592 Flewellyn Road	49	50	YES
6b	OPOR - 7592 Flewellyn Road	50	50	YES
7a	POW - 7586 Flewellyn Road	48	50	YES
7b	OPOR - 7586 Flewellyn Road	49	50	YES
8a	POW - 7576 Flewellyn Road	49	50	YES
8b	OPOR - 7576 Flewellyn Road	49	50	YES
9	POW - 7524 Flewellyn Road	47	50	YES

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current study indicate that stationary noise levels received at nearby noise sensitive dwellings, generated by the relocated waste processing and recycling operations, are expected to comply with ENCG sound level limits for a Class 2 area at all points of reception. The proposed relocation shifts sources of stationary noise farther away from points of reception, resulting in a reduction of noise received at the adjacent residential buildings as compared to current conditions. The proposed development is expected to be compatible with the surrounding noise-sensitive dwellings, according to the assumptions outlined in Section 2.1.

This concludes our stationary noise assessment and report. If you have any questions or wish to discuss our findings, please advise us. In the interim, we thank you for the opportunity to be of service.

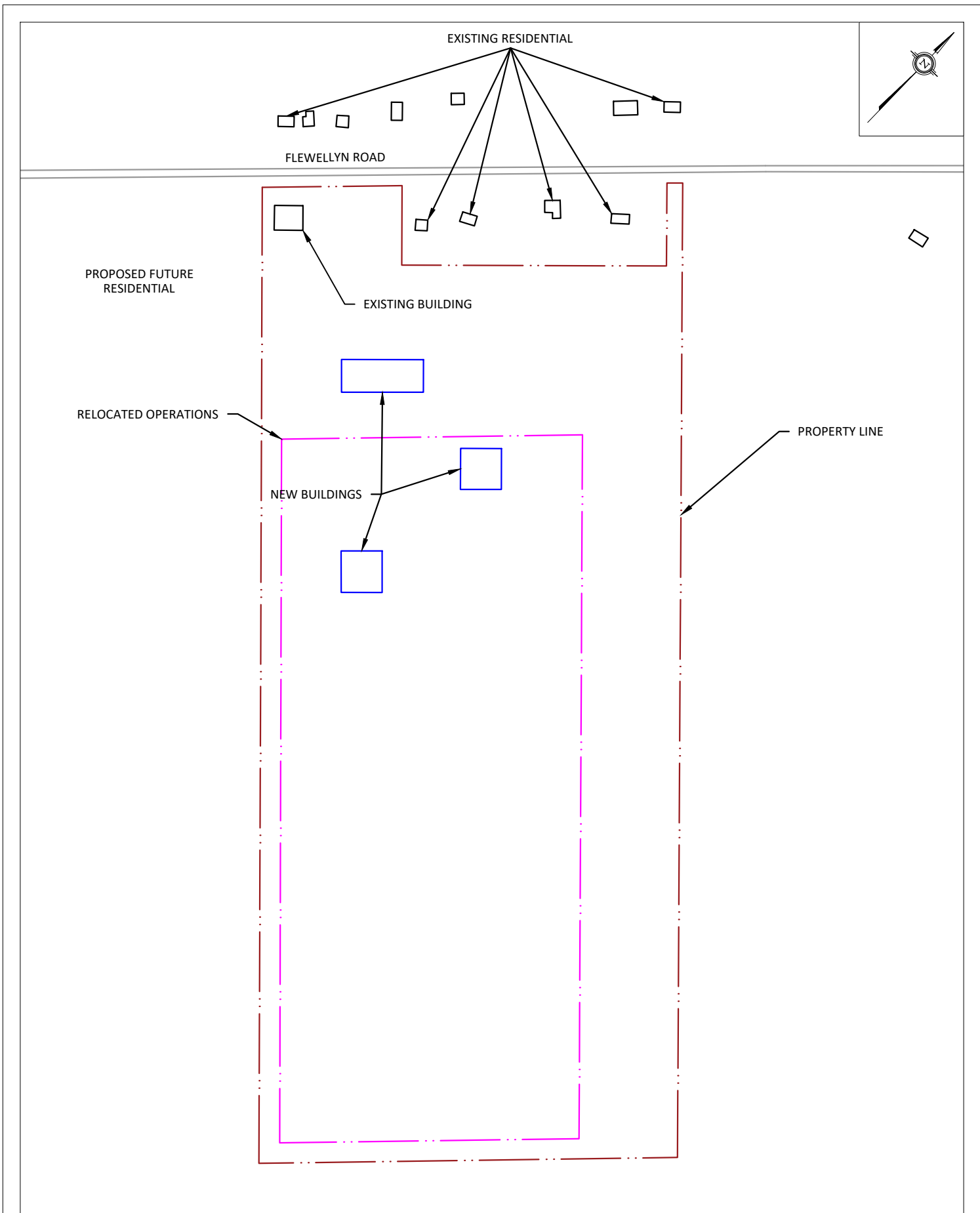
Sincerely,

Gradient Wind Engineering Inc.

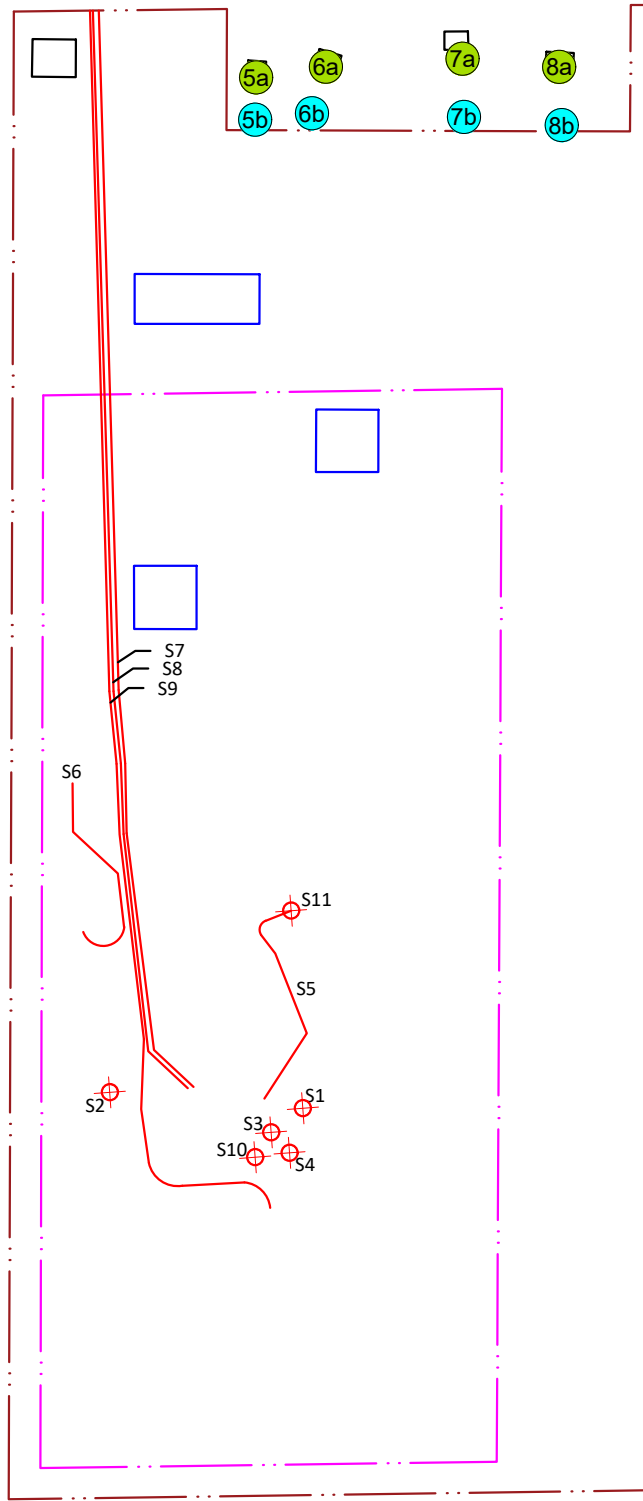
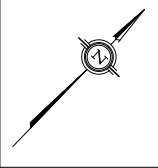





Joshua Foster, P.Eng.
Lead Engineer

Gradient Wind File #21-119-Stationary Noise R1



GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT 7628 FLEWELLYN ROAD, STITTVILLE STATIONARY NOISE ASSESSMENT	DESCRIPTION FIGURE 1: SITE PLAN AND SURROUNDING CONTEXT
	SCALE 1:3600 (APPROX.)	DRAWING NO. GW21-119-1
	DATE APRIL 21, 2023	DRAWN BY M.L.



-  NOISE SOURCE
-  OPOP RECEPTOR
-  POW RECEPTOR

PROJECT	7628 FLEWELLYN ROAD, STITTSVILLE STATIONARY NOISE ASSESSMENT	
SCALE	1:3600 (APPROX.)	DRAWING NO. GW21-119-2
DATE	APRIL 21, 2023	DRAWN BY M.L.

DESCRIPTION	FIGURE 2: STATIONARY NOISE SOURCES AND POINTS OF RECEPTION
-------------	--

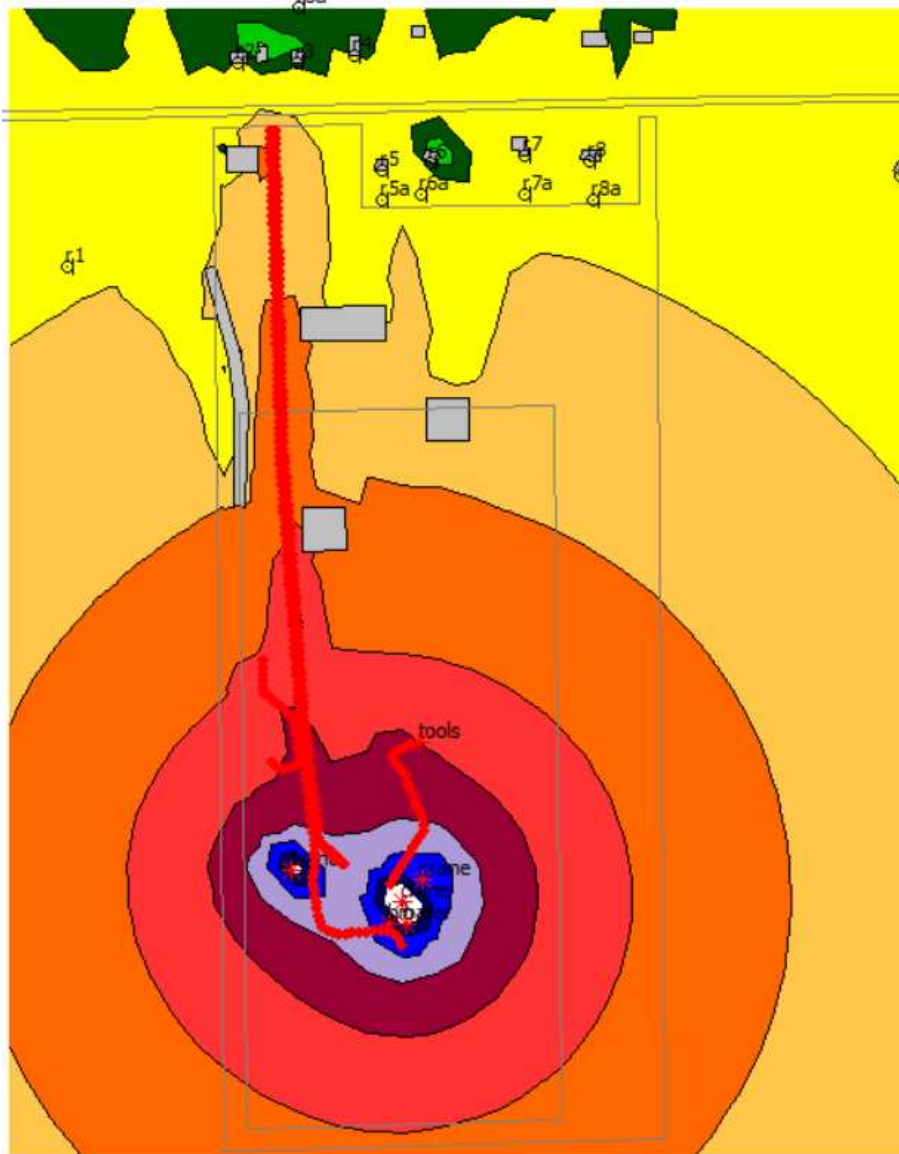
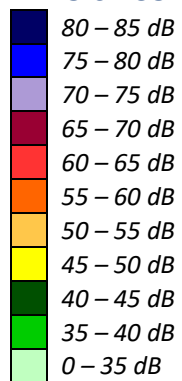


FIGURE 3: DAYTIME STATIONARY NOISE CONTOURS (1.5 METERS ABOVE GRADE)



August 21, 2024

PH4401-LET.01-REV.01

Cash for Trash Canada
7628 Flewellyn Road
Ottawa, Ontario
K2S 1B6

Attention: Charbel Bouroufail

Subject: **Hydrogeological Report and Terrain Analysis
Proposed Commercial Development
7628 Flewellyn Road
Ottawa, Ontario**



**PATERSON
GROUP**

Consulting Engineers

9 Auriga Drive
Ottawa, Ontario
K2E 7T9
Tel: (613) 226-7381

Geotechnical Engineering
Environmental Engineering
Hydrogeology
Materials Testing
Building Science
Rural Development Design
Temporary Shoring Design
Retaining Wall Design
Noise and Vibration Studies

patersongroup.ca

INTRODUCTION

Further to your request, Paterson has conducted a Hydrogeological Report and Terrain Analysis in support of a Zoning By-Law Amendment for the proposed expansion to the existing commercial development located at 7628 Flewellyn Road in Ottawa, Ontario.

The purpose of this work has been to determine the suitability of the water supply aquifer underlying the site to service the expansion of the proposed commercial development.

The subject site consists of a 20.22 ha lot and is currently occupied by a vehicle salvage yard which includes several structures, a gravel surfaced parking lot and stockpiles of scrap metals. The southern portion of the site is generally vacant. The ground surface across the site generally slopes downward toward the south while the local groundwater flow is likely towards the west, towards the adjacent quarry with regional shallow groundwater flow to the south.

The subject site is bordered by residential dwellings and Flewellyn Road to the north, vacant land to the east, and an existing quarry and associated access roads and fill storage areas to the south and west. The northwest portion of the subject site is currently zoned as RG1(21r) which corresponds to Rural General Industrial Zone with a minimum lot area of 8,000 m² and is located in Ward 21. The remainder of the subject site is identified as RU which refers to Rural Countryside Zone.





A Hydrogeological pre-consultation was completed with a City of Ottawa Hydrogeologist on July 17, 2023. The City Hydrogeologist suggested that additional sampling be completed during the 8-hour pumping test for Polycyclic Aromatic Hydrocarbons (PAHs), Petroleum Hydrocarbons (PHCs) in addition to the standard Subdivision Package suite of parameters, trace metals and Volatile Organic Compounds (VOCs) required by the City of Ottawa Hydrogeological and Terrain Analysis Guidelines (HTAG).

It is understood that two Environmental Activity and Sector Registrations are active at the subject site in accordance with the site usage. Registration Number R-007-467538169, filed November 2, 2016 indicates that the site is registered for the use, operation, enlargement and extension of an end-of-life vehicle waste disposal site. As an active end-of-life vehicle waste disposal site, fluids defined in O. Reg. 85/16 and Reg. 347, such as anti-freeze and fuel, are to be removed over an impermeable surface which has a spill containment system as defined in O. Reg. 85/16.

Further, R-004-71121872151 indicates that the subject site is registered for the use, operation, alteration, engagement or extension or replacement of a waste management system serving the Province of Ontario.

The activities associated with the current site usage as an end-of-life vehicle waste disposal site are provincially regulated and managed by the province of Ontario. Expansion and modifications to the subject site will not result in additional activities detrimental to the underlying aquifer. It is recommended that the client adhere to the current best management practices.

In accordance with Ontario End-of-Life (ELV) Activity Requirements, a Spill Prevention and Management Plan should be developed in support of the Site Plan application and include at a minimum:

- Procedures and materials to be used for spill clean-up.
- The location of all floor drains.
- The location of materials to be used to seal drains in the event of a spill.
- Names of persons to be notified in the event of a spill.
- Schedule for inspecting storage areas, containers and spill containment systems.

DESCRIPTION OF SUBJECT SITE

The subject site is an approximately 20.22 ha lot and is currently occupied by a vehicle salvage yard which includes a one-storey office building, a gravel surfaced parking lot, a weigh scale, an automobile fluid drainage station with various sheds, temporary storage buildings and stockpiles of automobiles and scrap metal product.



The re-zoning application is for the proposed expansion of the commercial development. The subject site will be further developed with new buildings, access lanes, parking areas and designated stockpile areas. Please refer to Figure-1 Key Plan and McRobie - CFT Site Plan – Zoning Amendment Plan, attached, for the proposed site location and site layout.

The subject site is currently serviced by an onsite sewage system and a private drilled well. A new sewage system is proposed to be located within the northeast corner of the site to replace the existing sewage system. Paterson has completed a septic flow calculation and the calculation resulted in a total daily water demand calculation of less than 7,500 L/day. A total daily water demand of 10,000 L/day will be conservatively used to account for future expansions. The calculations are based on Part 8 of the Ontario Building Code (OBC) and are considered to be conservative.

A licensed well contractor (Air Rock Drilling) was retained to install a new drilled well on site on May 18, 2023. The new drilled well, hereby referred to as TW1, was tested in support of the proposed commercial development and was able to provide a sufficient volume of groundwater for the proposed development. Groundwater samples have been collected from the onsite well and submitted to an accredited laboratory for comprehensive testing of bacteriological, chemical and physical water quality parameters consistent with the standard “Subdivision Supply” suite of parameters as well as trace metals, PAHs, PHCs and VOCs.

The suitability of the aquifer to supply the subject site was assessed using the methodology provided in City of Ottawa HTAG.

MISSISSIPPI-RIDEAU SOURCE PROTECTION PLAN

The Mississippi-Rideau Source Protection Plan (MRSPP) provides guidance as to which policies apply to a given property, municipality or specific activity and if there are specific designations that apply to the area. The subject site and surrounding areas have been designated as a Highly Vulnerable Aquifer (HVA), and Wellhead Protection Area D (score of 2) within the MRSPP, and are identified as two of four groundwater related vulnerable areas identified within the Clean Water Act (2006). The four vulnerable areas consist of SGRA, HVA, IPZ and wellhead protection area (WHPA).

Based upon the designation of an HVA and WHPA, the MRSPP provides a list of activities that are prohibited, managed or encouraged to change dependent upon the vulnerable area type. The subject site is mapped to be in WHPA D (Source Protection Atlas), however has a score of 2 (MRSPP). There is no prohibition of land uses on the subject site based upon its existing usage.

Therefore, there are no related requirements for an HVA or WHPA D (score of 2) with a score of less than 8 at this location.



FIELDWORK PROGRAM

Well Installation

As a means to demonstrate the adequacy of the aquifer underlying the subject lands, with respect to water quality and quantity, a new drilled well (Tag # A378991) was constructed by Air Rock Drilling (Air Rock) on May 18, 2023. The MECP Water Well Record (WWR) indicates that the well extends to approximately 36.5 m below ground surface (bgs). The 152 mm steel casing is recorded to extend to 12.8 m bgs, with a 0.61 m stick up. Limestone bedrock was encountered at the ground surface. The onsite WWR demonstrates that the well was installed according to the City of Ottawa HTAG. A copy of the WWR can be found attached.

Well Testing

As a means to evaluate the water supply aquifer intercepted by the well, the well was subjected to an 8-hour constant rate pumping test. The pumping test was conducted on June 1, 2023 under the full-time supervision of Paterson personnel. Prior to the pumping test the well was disinfected as per the MECP Disinfection Instruction Sheet (attached), and a data-logger was installed to monitor the background groundwater levels.

A submersible pump was rented from Air Rock for the pumping test. A licensed water well technician (Air Rock) completed the necessary plumbing related activities. A discharge hose assembly with a gate valve was connected to the rented pump. The discharge line was placed at a sufficient distance to ensure that the discharge water was being directed away from the well and any septic systems in the area. Upon completion of the test, the pump was removed and the well was disinfected by Air Rock.

The pumping test was carried out at a pumping rate of 38 L/min for a duration of 8 hours. During the pumping test, the pumping rate was periodically measured using the timed volume correlation method. The pump rate was maintained within 5% of the selected pump rate. The static water level was recorded manually and an electric datalogger (VanEssen TD-Diver) was installed in the test well prior to the start of the pumping test. The selected rate of 38 L/min provides approximately 1.8 times the maximum total daily design volume for the septic system during the 8-hour pumping test. It should be noted that the actual daily water usage is typically much lower than the theoretical OBC values. The rate was determined to be representative of a flow rate which would be in excess of what the development would require.

The data logger recorded water levels at 30 second intervals. In addition, manual water level readings were taken at periodic intervals during the test.



Recovery data was collected from the well following the completion of the pumping. The well was noted to have achieved 95% recovery approximately 3 minutes after the completion of pumping.

Groundwater samples were collected 4 hours and 8 hours after the start of pumping. Prior to collection of the groundwater samples, the free chlorine residual was verified as non-detectable. The water samples were submitted for comprehensive testing of bacteriological, chemical, and physical water quality parameters consistent with the standard "Subdivision Supply" suite of parameters plus trace metals and VOCs. PHCs were measured at the 8-hour mark.

All samples were collected unfiltered and unchlorinated and were placed directly into clean bottles supplied by the analytical laboratory. Samples were placed immediately into a cooler with ice and were transported directly to Eurofins Environmental Testing Canada Inc. laboratory in Ottawa. All samples were received by the laboratory within 24 hours of collection.

A series of field tests of the pumped water were carried out at the well head during the 8-hour pumping test. The parameters tested at the well head included: pH, total dissolved solids, conductivity, turbidity, true colour, and temperature.

Aquifer Analysis

Water Quantity

Pumping test data from the pumping test performed at TW1 was analyzed using AQTESOLV Pro Version 4.5 aquifer analysis software package by HydroSOLVE Inc. Drawdown data was measured using an electronic water level tape and an electronic datalogger unit.

AQUIFER PARAMETER	RESULT OF ANALYSIS
Transmissivity (m ² /day)	914
Pumping Rate (L/min)	38
Pre-test Static Water Level (m TOC)	12.6
Post-test Water Level (m TOC)	12.7
Available Drawdown (m)	24.1
%Drawdown During Pump Test (%)	0.6
Specific Capacity (L/min/m drawdown)	253



The drawdown data was analyzed using the Theis and Cooper Jacob methods of analysis. Aquifer transmissivity is estimated to be 914 m²/day. Refer to the Theis and Cooper Jacob methods of analysis data sheets attached to this report.

The pumping test results show that TW1 has a high yield to support the water demands that may be required. Overall maximum drawdown, at a constant pumping rate for a period of 8 hours, was approximately 0.15 m (0.6% of the available drawdown). 100% recovery was achieved approximately 3 minutes after the end of pumping.

The total volume of water pumped during the 8-hour pumping event was approximately 18,240 L. This is approximately 1.8 times the maximum total daily design volume of water required to support the proposed commercial development expansion (maximum 10,000 L/day). It should be noted that the actual daily water usage is typically much lower than the theoretical OBC values.

The suitability of the aquifer to supply the proposed site was assessed using the methodology provided in the City of Ottawa HTAG.

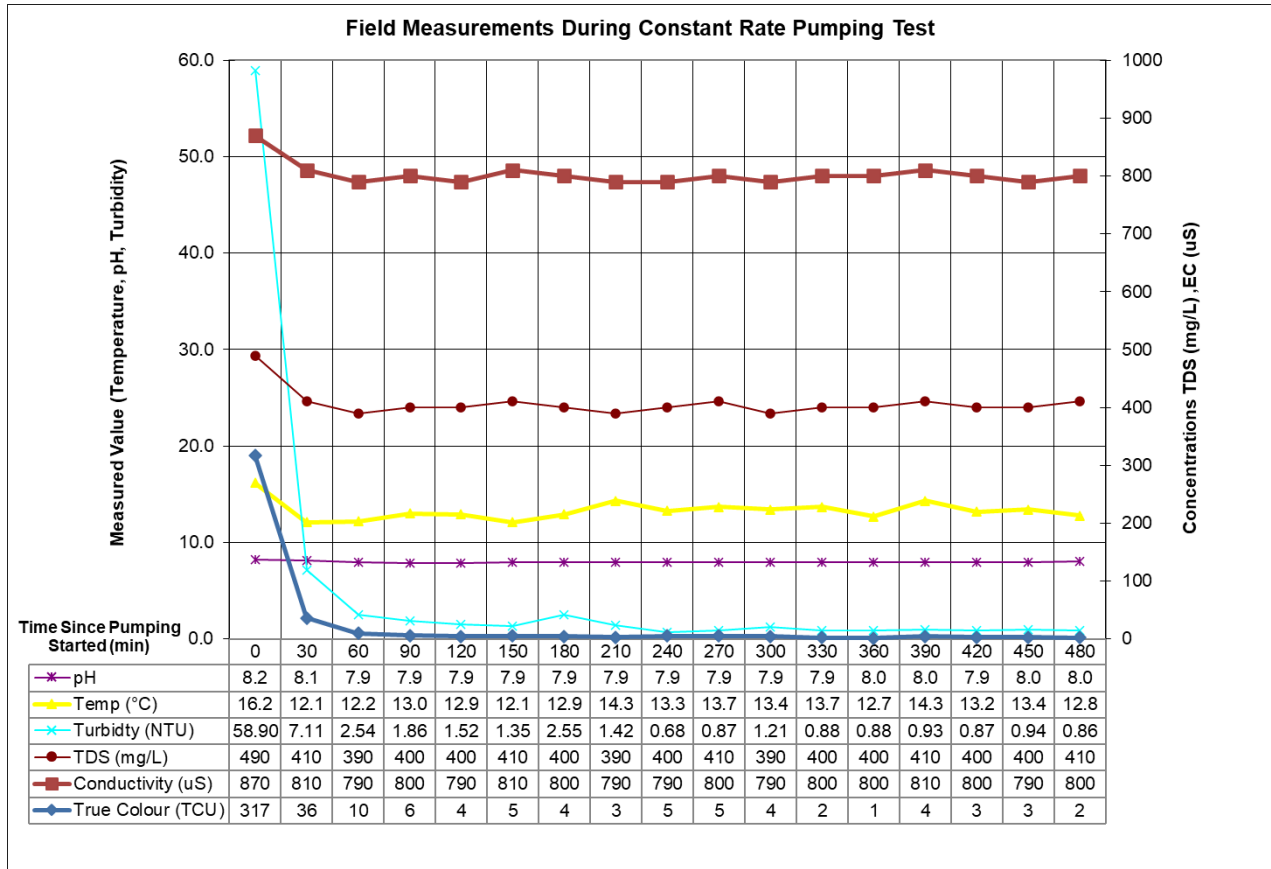
Based on the information summarized in Table 1, it is readily apparent that the water supply well has intercepted an adequately strong water supply aquifer which has sufficient quantity to service the proposed development.

Given the analyses presented and summarized above, it is our opinion that there is an adequate supply of water to support the proposed Re-Zoning Application. Available WWRs of the neighbouring properties on the MECP Well Record mapping website indicated that the wells were screened in limestone bedrock.

Water Quality

Field Data

Turbidity, electrical conductivity, total dissolved solids (TDS), pH, true colour, and temperature were measured at the wellhead during the pumping test performed on TW1. The measurements and time intervals for each of these parameters are summarized on the graphical representation below. In addition, a HACH Pocket Colorimeter II chlorine reader was used to measure the free chlorine residual level. No chlorine residual was detected in the discharge water prior to the collection of the water samples.



Laboratory Data

The Subdivision Package suite of parameters as well as trace metals, PAHs, VOCs, and PHCs laboratory water quality results obtained from the groundwater sample collected from the pumping test of TW1 are provided in Table 2a – 2d below. The laboratory analyses reports can be found attached.



TABLE 2a: GROUNDWATER MICROBIOLOGY & GENERAL GEOCHEMISTRY					
PARAMETER	UNITS	ODWS		TW1	
		LIMIT	TYPE	GW1 (4 hr)	GW2 (8 hr)
				6/1/2022	6/1/2022
MICROBIOLOGICAL					
Escherichia Coli (E.Coli)	ct/100mL	0	MAC	0	0
Total Coliforms	ct/100mL	0	MAC	0	0
GENERAL CHEMICAL - HEALTH RELATED					
Fluoride (F)	mg/L	1.5	MAC	0.68	0.72
Ammonia (N-NH ₃)	mg/L	-	-	0.21	0.21
Nitrite (N-NO ₂)	mg/L	1	MAC	<0.10	<0.10
Nitrate (N-NO ₃)	mg/L	10	MAC	<0.10	<0.10
Total Kjeldahl Nitrogen	mg/L	-	-	0.31	0.29
Turbidity (Field)	NTU	1.0 (5.0)	MAC/AO	0.68	0.86
Turbidity (Laboratory)	NTU	1.0 (5.0)	MAC/AO	1.0	0.4
GENERAL CHEMICAL - AESTHETIC RELATED					
Alkalinity (as CaCO ₃)	mg/L	30-500	OG	278	276
Chloride (Cl)	mg/L	250	AO	69	72
Colour (Apparent)	TCU	5	AO	5	5
Colour (Field - True)	TCU	5	AO	5	2
Conductivity	uS/cm	-	-	777	769
Dissolved Organic Carbon	mg/L	5	AO	1.80	1.70
Hardness (as CaCO ₃)	mg/L	100	OG	254	261
Ion Balance	unitless	-	-	0.99	0.99
pH	unitless	6.5-8.5	AO	8.06	8.1
Phenols	mg/L	-	-	<0.001	<0.001
Sulphate (SO ₄)	mg/L	500	AO	53	55
Sulphide (S ₂ ⁻)	mg/L	0.05	AO	<0.01	<0.01
Tannin & Lignin	mg/L	-	-	<0.5	<0.5
Total Dissolved Solids	mg/L	500	AO	505	500

- ODWS identifies the following types of parameters
 MAC = Maximum Allowable Concentration
 AO = Aesthetic Objective
 OG = Operational Guideline
- Shaded Concentration Indicates an Exceedance of the ODWS Objective



TABLE 2b: GROUNDWATER GEOCHEMISTRY - METALS					
PARAMETER	UNITS	ODWS		TW1	
		LIMIT	TYPE	GW1 (4 hr)	GW2 (8 hr)
				2022-06-01	2022-06-01
Metals					
Aluminum (Al)	mg/L	0.1	OG	<0.01	<0.01
Antimony (Sb)	mg/L	0.006	IMAC	<0.0005	<0.0005
Arsenic (As)	mg/L	0.01	IMAC	<0.001	<0.001
Barium (Ba)	mg/L	1.0	MAC	0.05	0.06
Beryllium (Be)	mg/L	-	-	<0.0005	<0.0005
Boron (B)	mg/L	5.0	IMAC	0.46	0.44
Cadmium (Cd)	mg/L	0.005	MAC	<0.0001	<0.0001
Calcium (Ca)	mg/L	-	-	54	55
Chromium (Cr)	mg/L	0.05	MAC	<0.001	<0.001
Cobalt (Co)	mg/L	-	-	<0.0002	<0.0002
Copper (Cu)	mg/L	1.0	AO	<0.001	<0.001
Iron (Fe)	mg/L	0.3	AO	0.14	0.14
Lead (Pb)	mg/L	0.01	MAC	<0.001	<0.001
Magnesium (Mg)	mg/L	-	-	29	30
Manganese (Mn)	mg/L	0.05	AO	<0.01	<0.01
Mercury (Hg)	mg/L	0.001	MAC	<0.0001	<0.0001
Molybdenum (Mo)	mg/L	-	-	<0.005	<0.005
Nickel (Ni)	mg/L	-	-	<0.005	<0.005
Potassium (K)	mg/L	-	-	5	5
Selenium (Se)	mg/L	0.05	MAC	<0.001	<0.001
Silver (Ag)	mg/L	-	-	<0.0001	<0.0001
Sodium (Na)	mg/L	200	AO	77	75
Strontium (Sr)	mg/L	-	-	4.5	4.56
Thallium (Tl)	mg/L	-	-	<0.0001	<0.0001
Uranium (U)	mg/L	0.02	MAC	<0.001	<0.001
Vanadium (V)	mg/L	-	-	<0.001	<0.001
Zinc (Zn)	mg/L	5.0	AO	<0.01	<0.01

- ODWS identifies the following types of parameters
MAC = Maximum Acceptable Concentration
IMAC = Interim Maximum Acceptable Concentration
AO = Aesthetic Objective
OG = Operational Guideline
- Shaded Concentration Indicates an Exceedance of the ODWS Objective



TABLE 2c: GROUNDWATER GEOCHEMISTRY - VOLATILES					
PARAMETER	UNITS	ODWS		TW1	
		LIMIT	TYPE	GW1 (4 hr)	GW2 (8 hr)
				6/1/2022	6/1/2022
VOCs Surrogates					
1,2-dichloroethane-d4	%	-	-	116	119
4-bromofluorobenzene	%	-	-	104	101
Toluene-d8	%	-	-	98	97
Volatiles					
1,1,1,2-tetrachloroethane	µg/L	-	-	<0.5	<0.5
1,1,1-trichloroethane	µg/L	-	-	<0.4	<0.4
1,1,2,2-tetrachloroethane	µg/L	-	-	<0.5	<0.5
1,1,2-trichloroethane	µg/L	-	-	<0.4	<0.4
1,1-dichloroethane	µg/L	-	-	<0.4	<0.4
1,1-dichloroethylene	µg/L	14.0	MAC	<0.5	<0.5
1,2-dichlorobenzene	µg/L	200.0	MAC	<0.4	<0.4
1,2-dichloroethane	µg/L	5.0	IMAC	<0.2	<0.2
1,2-dichloropropane	µg/L	-	-	<0.5	<0.5
1,3,5-trimethylbenzene	µg/L	-	-	<0.3	<0.3
1,3-dichlorobenzene	µg/L	-	-	<0.4	<0.4
1,3-Dichloropropylene (cis+trans)	µg/L	-	-	<0.3	<0.3
1,4-dichlorobenzene	µg/L	5.0	MAC	<0.4	<0.4
Acetone	µg/L	-	-	<5	<5
Benzene	µg/L	1.0	MAC	<0.5	<0.5
Bromodichloromethane	µg/L	-	-	<0.3	<0.3
Bromoform	µg/L	-	-	<0.4	<0.4
Bromomethane	µg/L	-	-	<0.5	<0.5
c-1,2-Dichloroethylene	µg/L	-	-	<0.4	<0.4
c-1,3-Dichloropropylene	µg/L	-	-	<0.2	<0.2
Carbon Tetrachloride	µg/L	2.0	MAC	<0.2	<0.2
Chloroethane	µg/L	-	-	<0.2	<0.2
Chloroform	µg/L	-	-	<0.5	<0.5
Dibromochloromethane	µg/L	-	-	<0.3	<0.3
Dichlorodifluoromethane	µg/L	-	-	<0.5	<0.5
Dichloromethane	µg/L	50	MAC	<4.0	<4.0
Ethylbenzene	µg/L	140	MAC	<0.5	<0.5
Ethylene Dibromide	µg/L	-	-	<0.2	<0.2
Hexane	µg/L	-	-	<5	<5
m/p-xylene	µg/L	-	-	<0.4	<0.4
Methyl Ethyl Ketone (MEK)	µg/L	-	-	<2	<2
Methyl Isobutyl Ketone (MIBK)	µg/L	-	-	<5	<5
Methyl Tert Butyl Ether (MTBE)	µg/L	15	AO	<2	<2
Monochlorobenzene	µg/L	80	MAC	<0.5	<0.5
o-xylene	µg/L	-	-	<0.4	<0.4
Styrene	µg/L	-	-	<0.5	<0.5
t-1,2-Dichloroethylene	µg/L	-	-	<0.4	<0.4
t-1,3-Dichloropropylene	µg/L	-	-	<0.2	<0.2
Tetrachloroethylene	µg/L	10	MAC	<0.3	<0.3
Toluene	µg/L	60	MAC	<0.4	<0.4
Trichloroethylene	µg/L	5	MAC	<0.3	<0.3
Trichlorofluoromethane	µg/L	-	-	<0.5	<0.5
Vinyl Chloride	µg/L	1	MAC	<0.2	<0.2
Xylene; total	µg/L	90	MAC	<0.5	<0.5

- ODWS identifies the following types of parameters
 - MAC = Maximum Acceptable Concentration
 - IMAC = Interim Maximum Acceptable Concentration
 - AO = Aesthetic Objective
 - OG = Operational Guideline
- Shaded Concentration Indicates an Exceedance of the ODWS Objective



TABLE 2d: GROUNDWATER GEOCHEMISTRY - HYDROCARBONS					
PARAMETER	UNITS	ODWS		TW1	
		LIMIT	TYPE	GW1 (4 hr)	GW2 (8 hr)
				6/1/2022	6/1/2022
PHCs Surrogates					
Alpha-androstrane	%	-	-	106	105
Petroleum Hydrocarbons (PHCs)					
F1 (C6-C10)	µg/L	-	-	<20	<20
F1-BTEX (C6-C10)	µg/L	-	-	<20	<20
F2 (C10-C16)	µg/L	-	-	<20	<20
F3 (C16-C34)	µg/L	-	-	<20	<20
F4 (C34-C50)	µg/L	-	-	<20	<20
Polycyclic Aromatic Hydrocarbons (PAHs)					
1+2-methylnaphthalene	µg/L	-	-		<0.1
1-methylnaphthalene	µg/L	-	-		<0.1
2-methylnaphthalene	µg/L	-	-		<0.1
Acenaphthene	µg/L	-	-		<0.1
Acenaphthylene	µg/L	-	-		<0.1
Benzo(a)anthracene	µg/L	-	-		<0.1
Benzo(a)pyrene	µg/L	0.0	MAC		<0.01
Benzo(b)fluoranthene	µg/L	-	-		<0.05
Benzo(g,h,i)perylene	µg/L	-	-		<0.1
Chrysene	µg/L	-	-		<0.05
Dibenzo(a,h)anthracene	µg/L	-	-		<0.054
Fluoranthene	µg/L	-	-		<0.1
Fluorene	µg/L	-	-		<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	-	-		<0.1
Naphthalene	µg/L	-	-		<0.1
Phenanthrene	µg/L	-	-		<0.1
Pyrene	µg/L	-	-		<0.1

- ODWS identifies the following types of parameters
 - MAC = Maximum Acceptable Concentration
 - IMAC = Interim Maximum Acceptable Concentration
 - AO = Aesthetic Objective
 - OG = Operational Guideline
 - N/A = not tested
- Shaded Concentration Indicates an Exceedance of the ODWS Objective

The bacteriological test results (Certificate of Analysis – Report No. 1997742) indicated that all samples were non-detect (0 ct/100 mL) for E.Coli and Total Coliforms.

The water quality of the subject water supply well meets all Ontario Drinking Water Standards maximum acceptable concentrations (MAC). Furthermore, the water meets all Aesthetic Objectives (AO) and Operational Guidelines (OG) with the exception of the following:

- Hardness (as CaCO₃)
- Total Dissolved Solids



Exceedances of the above parameters are not uncommon for the water supply in the subject aquifer. Each of these groundwater parameters are discussed in detail below.

Hardness as CaCO₃

Hardness, expressed as calcium carbonate, is an operational guideline and does not appear in the ODWS. Rather, it appears in the Technical Support Documents for Ontario Drinking Water Standards, Objectives and Guidelines as a parameter with an operational guideline at 100 mg/L. At the measured concentrations of 254 and 261 mg CaCO₃/L at the 4- and 8-hour marks, respectively, the water is considered to be hard, however, it is below the reasonable treatable limit of 500 mg CaCO₃/L specified in Table 3 of the MOECC guidance document Procedure D-5-5 (1996). The hardness concentration can be treated using conventional softening technologies.

Total Dissolved Solids (TDS)

Total dissolved solids (TDS) refers to the concentration of inorganic substances dissolved in water. The main constituents are typically chloride, sulphates, calcium, magnesium, and bicarbonates. Water with a TDS objective above 500 mg/L of TDS may not be palatable to some users, but taste is subjective. The TDS concentration was 505 and 500 mg/L at the 4- and 8-hour marks, which slightly exceeds the TDS Aesthetic Objective. A point-of-use reverse osmosis unit could be used as a drinking source, if desired. As such, no taste problems will occur when the system is used.

The Langelier Saturation Index (Langelier, 1936) is used to predict the calcium carbonate stability of water. It indicates whether the calcium carbonate will precipitate, dissolve, or be in equilibrium with water. The Langelier calculation provided an LSI of 0.7. Based on the evaluation of the result, the water is super saturated and tends to precipitate a scale layer of calcium carbonate (scale forming but non-corrosive). Based on the LSI of 0.7, a high amount of scaling is not anticipated, and, as the water is super-saturated corrosion is unlikely to occur. Based on the range of stability in the positive direction, there are no mitigative measures needed for corrosion or scaling. If taste concerns or scaling concerns arise, then a reverse osmosis unit can be installed. See Langelier Saturation Index Calculation attached for calculation details.

Sodium

Sodium (Na), an aesthetic parameter, was detected in the laboratory test samples at concentrations of 77 and 75 mg/L in TW1 which does not exceed the ODWS aesthetic objective of 200 mg/L. Although sodium is not toxic and no maximum acceptable concentration has been set, concentrations above 20 mg/L require that the Medical Officer of Health be notified of the water quality results, so that this information may be passed on to local physicians for use in treatment of those requiring a sodium-restricted diet.



Terrain Analysis

Surficial Geology

The field program for the investigation was carried out from May 21 to 25, 2021. At the time, a total of six (6) boreholes were advanced to a maximum depth of 10.1 m below existing ground surface (bgs) and were distributed in a manner to provide general coverage of the subject site. Refer to Paterson Drawing PG5783-1 Test Hole Location plan, attached, for test hole locations.

The borehole locations were recorded and the subsurface conditions, including the soil morphology and depth to the groundwater table (if encountered), were carefully observed and recorded. The soils encountered were classified texturally in the field, and later reviewed in the laboratory.

Generally, the subsurface profile at the test holes consisted of a thin layer of fill and/or topsoil underlain by glacial till or bedrock. The fill was generally observed to consist of brown silty sand with gravel and rock fragments. The topsoil and/or fill were observed to extend to depths ranging between 0.1 and 0.6 m bgs. Glacial till consisting of brown silty sand with gravel, cobbles, and boulders was observed in select boreholes, specifically BH4-21, BH5-21, and BH6-21. Refusal to augering was encountered in all boreholes at depths between 0.2 and 2.2 m bgs. Bedrock was cored in boreholes BH1-21, BH2-21, and BH3-21 starting at depths of 0.15 to 0.2 m bgs extending to maximum depths of 10.1 m bgs. Groundwater was measured to be 1 – 2 m bgs in BH1-21, BH2-21, and BH3-21,

It should be noted that groundwater levels can fluctuate both seasonally and in conjunction with precipitation events. Therefore, groundwater levels could vary at the time of construction. See attached Soil Profile and Data Logs (attached) for more information.

Reference should be made to the borehole logs appended to this report for the details of the soil profiles encountered at each test hole location. The client should be aware that any information pertaining to soils are furnished as a matter of general information only and borehole descriptions are not to be interpreted as descriptive of conditions at locations other than those described by the boreholes themselves.



Hydrogeological Sensitivity of the Site

The subject area currently consists of a vehicle salvage yard (Cash for Trash) and undeveloped land, with residential properties nearby that are supported by private services. The subject site is serviced by an existing private well and septic and the proposed development to be serviced by a new private well (TW1) and septic system. The ground surface slopes gently in the southern direction with an approximate elevation decline of 1.5 m. An additional 1.5 m slope is located along the southern limits of the salvage yard area.

Based upon our field investigation, overburden thickness was observed to be 0.1 to 2.2 m. The overburden generally consists of fill and/ or topsoil, underlain by bedrock or glacial till underlain by bedrock. Based on available geological mapping, the subject site is underlain by Paleozoic limestone with dolostone and shale of the Gull River formation in the Simcoe Group with a general overburden thickness of 0 to 3 m. General groundwater flow direction is anticipated to be towards the south.

Due to the shallow nature of the bedrock, the site is considered to be hydrogeologically sensitive and, therefore, mitigating measures are recommended. Surrounding well records were reviewed on the MECP website, and the shallowest aquifer intercept in the area is recorded to be 11.3 m bgs. Due to the hydrogeological sensitivity of the Site, any future wells should be installed with double the amount of standard casing, and separation distances between potable supply wells and septic system components should be increased to 30 m. It should be noted that double the amount of standard casing equates to 12 m of casing. Any future wells should be installed in accordance with O.Reg 903. Furthermore, it is recommended that, where possible, new wells to be installed are located upgradient of any proposed or existing septic systems.

Conceptual Lot Development Plan

Finalized building plans and design details were not available at the time of report preparation, however, based on discussions with the design team, the onsite well and septic system will service an office, warehouse, and a mechanic shop. An existing building (ie. Previously a house) is used as an automotive sales office.

Total Daily Design Sewage Flow

The re-zoning application only addresses the total capacity of the site area to attenuate septic effluent applied within the property boundaries. The total daily design sewage flow (TDDSF) volume used for this assessment is 10,000 L/day while the expected design flows, calculated under Part 8 – Ontario Building Code, will be less than 7,500 L/day. Further detail to be included with the site plan application.



Typical developments will have lower actual loading compared to the conservative design loads as per the OBC.

Sewage System Design

It is anticipated that a series of buildings and associated roadways, parking spaces, and storage spaced will be constructed on the subject site in the future (i.e upon approval).

The theoretical design for this review consists of using a TDDSF of 10,000 L/day. Specific information will be provided under the site plan application stage.

In order to minimize the risk of long-term contamination of services, a typical minimum separation distance of 15 m is required between any drilled potable supply well and the closest distribution pipe or septic tank of a sewage system. Due to the hydrogeological sensitivity of the site, it is recommended that the separation distance be increased to 30 m. In addition, **a minimum of 100 mm of imported or in-situ soil seal would be required to provide additional isolation due to the shallow overburden (<2 m).**

The proposed development has significant development area available to allow appropriate separation between onsite private services and offsite private services. Based on the available space, the minimum regulatory and recommended separation distances can be easily attained on the subject site.

As building plans and design details were not available at the time of report preparation, a representative sewage system has been assigned to the proposed lot for the purpose of completing the study. A Class 4 sewage system with a fully raised absorption trench style leaching bed may be installed to service the proposed expansion. Assuming the aforementioned buildings, water closets, and employee shifts, the design sewage flow according to the Ontario Building Code would be 8,500 L/day with a conservative TDDSF of 10,000 L/day being used for design.

A minimum length of distribution pipe required for the leaching bed is determined by the formula $QT/200$, as per the OBC, where “Q” is the design sewage flow and “T” is the percolation rate of the leaching bed fill. Based on the design sewage flow of 10,000 L/d, a minimum distribution pipe length of 400 m would be required, assuming a percolation rate of the leaching bed fill used is 8 min/cm. As there is not enough native soil over the bedrock underlying the proposed site to utilize as a dispersal layer, a 100 mm soil seal will be required under the leaching bed/mantle area where less than 2 m of overburden is encountered. The 100 mm soil seal would have an estimated percolation rate of greater than 50 min/cm, therefore an imported sand mantle will be required. The leaching bed area shall be designed such that the loading rate does not exceed 4 L/m²/d. As such, for a daily sewage flow of 10,000 L, the leaching bed area required would be up to 2,500 m². The reader should be aware that numerous other types of Class 4 sewage systems could



potentially be used at the site. A sewage system using tertiary wastewater equipment would require a significantly reduced area, and potentially reduce the height.

A Class 4 sewage system with a conventional absorption trench style leaching bed can be easily accommodated for the proposed expansion due to the size of the subject site (approximately 20.22 ha). The potential leaching bed discussed to service the proposed development requires the greatest footprint of all of the OBC approved styles of beds. This type of bed has been selected for illustration purposes only and the reader should be aware that numerous other types of Class 4 sewage systems could potentially be used for the site.

Predictive Nitrate Impact Assessment

Nitrate is considered to be a critical parameter of concern when assessing impacts to groundwater quality downgradient of an onsite sewage system. MECP Procedure D-5-4 applies for the proposed development. For the purpose of this guideline, the Ontario Drinking Water Objective of 10 mg/L of nitrate is used as an indicator of groundwater impact potential.

Under this guideline, where the lot size is one hectare or larger, a detailed impact assessment may not be required. It has been the City of Ottawa's policy that where the lot size of 0.8 ha or larger, a detailed assessment is typically not required since it is considered to be a low-risk development. The subject site has an area of 20.22 ha. As such, a detailed nitrate impact assessment (NIA) would not typically be necessary.

An NIA was completed below to corroborate our opinion that the property can adequately support the proposed expansion without having adverse impacts on the underlying bedrock aquifer should the minimum separation distances, well construction, and septic system be completed as per the recommendations and the OBC. The values shown in the Predictive Nitrate Impact Assessment attached to this report are summarized below.

<input type="checkbox"/> Site area	20.22 ha
<input type="checkbox"/> Impervious area (%)	57 %
<input type="checkbox"/> Daily sewage flow (Value based on 1m ³ per day flow volume per residential lot)	10 m ³ /d
<input type="checkbox"/> Concentration of nitrate in effluent (Value based on typical effluent concentration)	40 mg/L
<input type="checkbox"/> Surplus Water (The surplus water value was estimated based on Environment Canada Climate Office values with a soil type comprised of silt loam (Urban Lawns/Shallow Rooted Crops) and anthropogenic sources.)	341 mm/yr
<input type="checkbox"/> Combined infiltration factor based on:	0.40



- Topography infiltration factor 0.20
- Soil texture infiltration factor 0.10
- Cover infiltration factor 0.10

The topography infiltration factor of 0.20 is based upon a rolling topography with an average slope between 2.8 to 3.8 m/km, taking into account the different topographies of the area. The soil texture infiltration factor was based upon an “tight impervious clay” to represent the bedrock with a value of 0.1 which is a conservative generalization based upon the site investigations and available geological mapping as the bedrock outcroppings were counted as impervious area for the above NIA calculation. The “cover infiltration factor” was calculated at 0.10 based upon the large open areas on site.

The calculation for a conventional septic system results in a predicted nitrate concentration of 9.37 mg/L nitrate for the subject site, using a value of 40 mg /L nitrate concentration within the effluent. This value was based upon a daily sewage flow of 10 m³ per day, as per the conservative assumption for future sewage discharge volumes.

Based on the results of the predicted nitrate impact assessment, it is our opinion that the property can adequately support the current and future proposed additions without having an adverse impact on the underlying bedrock aquifer.





CONCLUSIONS

Based on the information contained within the body of this report the following conclusions can be drawn:

- The water supply aquifer intercepted by TW1 is considered to be adequate to support the water quantity demands for the proposed commercial development.
 - The preferred water supply intercepted by TW1 contains a water supply that is potable and contains only elevated concentrations of hardness and TDS. The noted parameters can be treated with current readily available water conditioning equipment.
 - The sodium concentration was measured to be above the 20 mg/L reporting limit and, as such, the Medical Officer of Health for the City of Ottawa should be informed to assist area physicians in the treatment of local residents on sodium reduced diets.
 - A residential grade water softener is recommended to facilitate the removal of the hardness concentration if desired. If a water softener is used for the proposed development, the owner should be made aware that additional sodium will be added to the water to reduce hardness. If desired, a point-of-use reverse osmosis system can be used to provide a drinking tap source.
 - The results of the water supply assessment have provided satisfactory evidence that the water supply aquifer underlying the subject site can support the proposed development from both a quality and quantity perspective.
 - The proposed development is sufficient in size to accommodate new sewage systems and meet all the regulatory separation criteria.
 - Future wells should be constructed in accordance with O.Reg. 903 and be installed similar to the well construction of TW1. Future wells should be installed with casing lengths of 12 m (double the standard length) and have a minimum of 30 m separation from all potential sources of contamination.
-



- It is recommended that new wells be constructed upgradient of any proposed or existing septic systems on site, where possible.
- The construction of an on-site sewage system should not affect the performance or water quality associated with a drilled well, contingent upon the on-site sewage system being designed in accordance with the Ontario Building Code (i.e properly sized sewage system and conforming to all separation distances) with a **minimum 100 mm soil seal provided beneath the leaching bed/mantle area**. A tertiary treatment system could be used to provide higher quality effluent and a reduced site footprint. A tertiary treatment system would require an annual maintenance contract.
- A Sewage System Permit and Building Permit needs to be issued for the site prior to the commencement of construction.
- The results of the Hydrogeological Report and Terrain Analysis have provided satisfactory evidence that the subject site can support the proposed expansion to the existing commercial with respect to water quality, quantity and sewage system placement.

We trust that the current submission satisfies your immediate requirements.

Best Regards,

Paterson Group Inc.

Kevin A Pickard, P.Eng.



Michael Killam, P.Eng.

Attachments:

- Figure 1 – Key Plan
- MECP Water Well Records
- Eurofins Certificate of Analysis
- AQTESOLV - Pumping Test Analysis Reports
- Nitrate Impact Assessment Calculations
- Langelier Saturation Index (LSI) Calculation
- Paterson Drawing PG5783-1 – Test Hole Location Plan
- Paterson Soil Profile and Data Sheets
- McRobie – CFT Site Plan Zoning Amendment – Drawing SP-A01



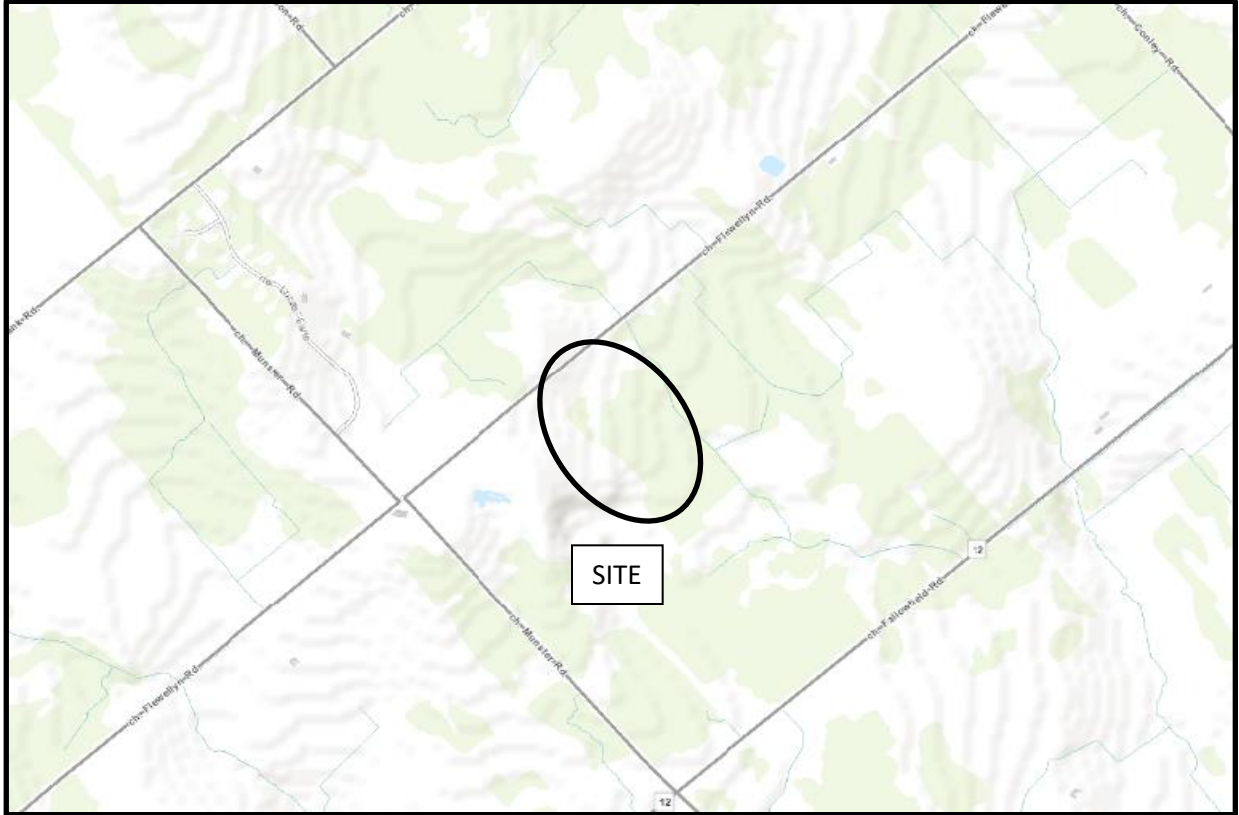


FIGURE 1

KEY PLAN

Measurements recorded in: Well Wellhead

A378991

Well Owner's Information
First Name: Last Name/Corporation: 2052196 Ontario Inc. E-mail Address: Well Constructed by Well Owner

Mailing Address (Street Number/Name): 7628 Flewellyn Road Municipality: Sarnia City Postal Code: K2S 1B6 Telephone No. (see note below)

Well Location: 7628 Flewellyn Road Township: Grouseburg Locality: 12 Section: B

Address of Well Location (Street Number/Name): 7628 Flewellyn Road City/Town/Village: Grouseburg Locality: 12 Section: B Postal Code: Ottawa, Ontario
UTM Coordinates (North, East, Meters): 18 424230 5005379

Description and Bedrock Material (Mandatory) Logging Record (see instructions on the back of this form)

General Color	Moist General Material	Other Material	General Description	Depth (m)	Depth (ft)
Grey	Limestone			0	0
Grey	Limestone	white	Quartzite mix	85	100
Grey	Limestone	white	Quartzite mix	100	110
Grey	Limestone	white	Quartzite mix	110	120

Annular Space	Volume (m ³)
Depth (m) or (ft): 42' 0" Type of Grout (used): Neat cement Material and Type: Volume (m ³): 10.92	

Method of Construction	Well Use
<input checked="" type="checkbox"/> Cable Tool <input type="checkbox"/> Rotary (Conventional) <input type="checkbox"/> Rotary (Horizontal) <input type="checkbox"/> Auger <input type="checkbox"/> Jet <input type="checkbox"/> Jet <input type="checkbox"/> Other specify:	<input type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Other specify:

Construction Record - Casing	Depth of Well
Hole Diameter (mm, inches, feet, etc.): 6 1/4" Steel Material (Steel, Aluminum, etc.): Steel Depth (m): 100 Kind of Water: Fresh Other specify:	<input checked="" type="checkbox"/> Under Drassy <input type="checkbox"/> Observation Well <input type="checkbox"/> Recovery Well <input type="checkbox"/> Recharge Well <input type="checkbox"/> Denitrification Well <input type="checkbox"/> Observation and Monitoring Well <input type="checkbox"/> Irrigation (Domestic) <input type="checkbox"/> Recreational <input type="checkbox"/> Industrial Supply <input type="checkbox"/> Recreational <input type="checkbox"/> Water Quality <input type="checkbox"/> Recreational, other specify: <input type="checkbox"/> Other specify:

Construction Record - Screen	Water Details	Well Diameter
Outside Diameter (mm, inches, feet, etc.): Material (Steel, Aluminum, etc.): Depth (m): Kind of Water: Fresh Other specify:	Kind of Water: Fresh Depth (m): 0' 42" Kind of Water: Fresh Other specify:	Depth (m): 0' 42" Kind of Water: Fresh Other specify:

Water Details	Well Diameter
Water found at Depth: 100' Gas Kind of Water: Other specify: Water found at Depth: 110' Gas Kind of Water: Other specify: Water found at Depth: (m) Gas Kind of Water: Other specify:	Depth (m): 0' 42" Kind of Water: Fresh Other specify:

Well Contractor and Well Technician Information
 Business Name of Well Contractor: Air Rock Drilling Co. Ltd.
 Well Contractor's License No.: 7861
 Business Address (Street Number/Name): 6050 Franktown Road
 Municipality: Richmond

Province: ON Postal Code: K0A 2Z0 Business E-mail Address: air-rock@sympatico.ca
 Business Telephone No. (see note below): 8130932170 Name of Well Technician (Last Name, First Name): Hanna, Jeremy

Well Technician's License No.: T3632
 Signature of Well Contractor (Last Name, First Name): [Signature]
 Date: 2023 05 18

Records of Well Yield Testing
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify: Not tested Pumping rate (m ³ /min, gal/min): 36.0' Duration of pumping (min): 1 Total water used (m ³ , gal): 37.4' Other specify:

Map of Well Location
 Please provide a map below following instructions on the back of this form.
 #7628 FLEWELLYN ROAD
 Munster Road
 0.9km
 200m
 HP-205PM Soil @ 100ft
 2023 05 18
 2023 05 18
 Ministry Use Only
 407849



Certificate of Analysis

Client: Paterson Group
9 Auriga Dr
Nepean, ON
K2E 7T9
Attention: Mr. Alex Schopf
PO#: 57632
Invoice to: Paterson Group

Report Number: 1997742
Date Submitted: 2023-06-02
Date Reported: 2023-06-14
Project: PH4401
COC #: 908261

Dear Alex Schopf:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Raheleh
Zafari
R Zafari 2023.06.1
4 14:16:42
-04'00'

APPROVAL: _____
Raheleh Zafari, Environmental Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: <https://directory.cala.ca/>.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is licensed by the Ontario Ministry of the Environment, Conservation, and Parks (MECP) for specific tests in drinking water (license #2318). A copy of the license is available upon request.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by the Ontario Ministry of Agriculture, Food, and Rural Affairs for specific tests in agricultural soils.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official provincial or federal guideline as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

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Group	Analyte	MRL	Units	Guideline	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Anions	Cl	1	mg/L	AO 250	69	72
	F	0.10	mg/L	MAC 1.5	0.68	0.72
	N-NO2	0.10	mg/L	MAC 1.0	<0.10	<0.10
	N-NO3	0.10	mg/L	MAC 10.0	<0.10	<0.10
	SO4	1	mg/L	AO 500	53	55
General Chemistry	Alkalinity as CaCO3	5	mg/L	OG 30-500	278	276
	Colour (Apparent)	2	TCU	AO 5	5	5
	Conductivity	5	uS/cm		777	769
	DOC	0.5	mg/L	AO 5	1.8	1.7
	pH	1.00		6.5-8.5	8.06	8.10
	Phenols	0.001	mg/L		<0.001	<0.001
	S2-	0.01	mg/L	AO 0.05	<0.01	<0.01
	TDS (COND - CALC)	1	mg/L	AO 500	505*	500
	Turbidity	0.1	NTU	AO 5	1.0	0.4
Hardness	Hardness as CaCO3	1	mg/L	OG 80-100	254*	261*
Hydrocarbons	F1 (C6-C10)	20	ug/L		<20	<20
	F1-BTEX (C6-C10)	20	ug/L		<20	<20
	F2 (C10-C16)	20	ug/L		<20	<20
	F3 (C16-C34)	50	ug/L		<50	<50
	F4 (C34-C50)	50	ug/L		<50	<50
Indices/Calc	Ion Balance	0.01			0.99	0.99
Metals	Ag	0.0001	mg/L		<0.0001	<0.0001
	Al	0.01	mg/L	OG 0.1	<0.01	<0.01
	As	0.001	mg/L	IMAC 0.01	<0.001	<0.001
	B	0.01	mg/L	IMAC 5.0	0.46	0.44

Guideline = ODWSOG

* = Guideline Exceedence

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 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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Group	Analyte	MRL	Units	Guideline	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Metals	Ba	0.01	mg/L	MAC 1.0	0.05	0.06
	Be	0.0005	mg/L		<0.0005	<0.0005
	Ca	1	mg/L		54	55
	Cd	0.0001	mg/L	MAC 0.005	<0.0001	<0.0001
	Co	0.0002	mg/L		<0.0002	<0.0002
	Cr	0.001	mg/L	MAC 0.05	<0.001	<0.001
	Cu	0.001	mg/L	AO 1	<0.001	<0.001
	Fe	0.03	mg/L	AO 0.3	0.14	0.14
	Hg	0.0001	mg/L	MAC 0.001	<0.0001	<0.0001
	K	1	mg/L		5	5
	Mg	1	mg/L		29	30
	Mn	0.01	mg/L	AO 0.05	<0.01	0.01
	Mo	0.005	mg/L		<0.005	<0.005
	Na	1	mg/L	AO 200	77	75
	Ni	0.005	mg/L		<0.005	<0.005
	Pb	0.001	mg/L	MAC 0.010	<0.001	<0.001
	Sb	0.0005	mg/L	IMAC 0.006	<0.0005	<0.0005
	Se	0.001	mg/L	MAC 0.05	<0.001	<0.001
	Sr	0.001	mg/L		4.50	4.56
	Tl	0.0001	mg/L		<0.0001	<0.0001
U	0.001	mg/L	MAC 0.02	<0.001	<0.001	
V	0.001	mg/L		<0.001	<0.001	
Zn	0.01	mg/L	AO 5	<0.01	<0.01	
Microbiology	Escherichia Coli	0	ct/100mL	MAC 0	0	0
	Total Coliforms	0	ct/100mL	MAC 0	0	0

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Group	Analyte	MRL	Units	Guideline	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Nutrients	N-NH3	0.020	mg/L		0.210	0.209
	Total Kjeldahl Nitrogen	0.100	mg/L		0.309	0.286
PAH	1+2-methylnaphthalene	0.1	ug/L			<0.1
	1-methylnaphthalene	0.1	ug/L			<0.1
	2-methylnaphthalene	0.1	ug/L			<0.1
	Acenaphthene	0.1	ug/L			<0.1
	Acenaphthylene	0.1	ug/L			<0.1
	Anthracene	0.1	ug/L			<0.1
	Benzo(a)anthracene	0.1	ug/L			<0.1
	Benzo(a)pyrene	0.01	ug/L	MAC 0.01		<0.01
	Benzo(b)fluoranthene	0.05	ug/L			<0.05
	Benzo(g,h,i)perylene	0.1	ug/L			<0.1
	Benzo(k)fluoranthene	0.05	ug/L			<0.05
	Chrysene	0.05	ug/L			<0.05
	Dibenzo(a,h)anthracene	0.1	ug/L			<0.1
	Fluoranthene	0.1	ug/L			<0.1
	Fluorene	0.1	ug/L			<0.1
	Indeno(1,2,3-c,d)pyrene	0.1	ug/L			<0.1
Naphthalene	0.1	ug/L			<0.1	
Phenanthrene	0.1	ug/L			<0.1	
Pyrene	0.1	ug/L			<0.1	
PHC Surrogate	Alpha-androstrane	0	%		106	105
Subcontract-Inorg	Tannin & Lignin	0.5	mg/L		<0.5	<0.5
VOCs Surrogates	1,2-dichloroethane-d4	0	%		116	119
	4-bromofluorobenzene	0	%		104	101

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 Date Reported: 2023-06-14
 Project: PH4401
 COC #: 908261

Group	Analyte	MRL	Units	Guideline	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
VOCs Surrogates	Toluene-d8	0	%		98	97
Volatiles	1,1,1,2-tetrachloroethane	0.5	ug/L		<0.5	<0.5
	1,1,1-trichloroethane	0.4	ug/L		<0.4	<0.4
	1,1,2,2-tetrachloroethane	0.5	ug/L		<0.5	<0.5
	1,1,2-trichloroethane	0.4	ug/L		<0.4	<0.4
	1,1-dichloroethane	0.4	ug/L		<0.4	<0.4
	1,1-dichloroethylene	0.5	ug/L	MAC 14	<0.5	<0.5
	1,2-dichlorobenzene	0.4	ug/L	MAC 200	<0.4	<0.4
	1,2-dichloroethane	0.5	ug/L	IMAC 5	<0.5	<0.5
	1,2-dichloropropane	0.5	ug/L		<0.5	<0.5
	1,3,5-trimethylbenzene	0.3	ug/L		<0.3	<0.3
	1,3-dichlorobenzene	0.4	ug/L		<0.4	<0.4
	1,3-Dichloropropylene (cis+trans)	0.5	ug/L		<0.5	<0.5
	1,4-dichlorobenzene	0.4	ug/L	MAC 5	<0.4	<0.4
	Acetone	5	ug/L		<5	<5
	Benzene	0.5	ug/L	MAC 1	<0.5	<0.5
	Bromodichloromethane	0.3	ug/L		<0.3	<0.3
	Bromoform	0.4	ug/L		<0.4	<0.4
	Bromomethane	0.5	ug/L		<0.5	<0.5
	c-1,2-Dichloroethylene	0.4	ug/L		<0.4	<0.4
	c-1,3-Dichloropropylene	0.5	ug/L		<0.5	<0.5
Carbon Tetrachloride	0.2	ug/L	MAC 2	<0.2	<0.2	
Chloroethane	0.5	ug/L		<0.5	<0.5	
Chloroform	0.5	ug/L		<0.5	<0.5	
Dibromochloromethane	0.3	ug/L		<0.3	<0.3	

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Certificate of Analysis

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 Date Reported: 2023-06-14
 Project: PH4401
 COC #: 908261

Group	Analyte	MRL	Units	Guideline	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Volatiles	Dichlorodifluoromethane	0.5	ug/L		<0.5	<0.5
	Dichloromethane	4.0	ug/L	MAC 50	<4.0	<4.0
	Ethylbenzene	0.5	ug/L	MAC 140	<0.5	<0.5
	Ethylene Dibromide	0.2	ug/L		<0.2	<0.2
	Hexane	5	ug/L		<5	<5
	m/p-xylene	0.4	ug/L		<0.4	<0.4
	Methyl Ethyl Ketone (MEK)	2	ug/L		<2	<2
	Methyl Isobutyl Ketone (MIBK)	5	ug/L		<5	<5
	Methyl Tert Butyl Ether (MTBE)	2	ug/L	AO 15	<2	<2
	Monochlorobenzene	0.5	ug/L	MAC 80	<0.5	<0.5
	o-xylene	0.4	ug/L		<0.4	<0.4
	Styrene	0.5	ug/L		<0.5	<0.5
	t-1,2-Dichloroethylene	0.4	ug/L		<0.4	<0.4
	t-1,3-Dichloropropylene	0.5	ug/L		<0.5	<0.5
	Tetrachloroethylene	0.3	ug/L	MAC 10	<0.3	<0.3
	Toluene	0.4	ug/L	MAC 60	<0.4	<0.4
	Trichloroethylene	0.3	ug/L	MAC 5	<0.3	<0.3
	Trichlorofluoromethane	0.5	ug/L		<0.5	<0.5
Vinyl Chloride	0.2	ug/L	MAC 1	<0.2	<0.2	
Xylene; total	0.5	ug/L	MAC 90	<0.5	<0.5	

Guideline = ODWSOG

* = Guideline Exceedence

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Client: Paterson Group
 9 Auriga Dr
 Nepean, ON
 K2E 7T9
 Attention: Mr. Alex Schopf
 PO#: 57632
 Invoice to: Paterson Group

Report Number: 1997742
 Date Submitted: 2023-06-02
 Date Reported: 2023-06-14
 Project: PH4401
 COC #: 908261

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 442075 Analysis/Extraction Date 2023-06-07 Analyst C M Method P 8270			
Methlynaphthalene, 1-	<0.1 ug/L	56	50-140
Methlynaphthalene, 2-	<0.1 ug/L	56	50-140
Acenaphthene	<0.1 ug/L	58	50-140
Acenaphthylene	<0.1 ug/L	58	50-140
Anthracene	<0.1 ug/L	54	50-140
Benz[a]anthracene	<0.1 ug/L	54	50-140
Benzo[a]pyrene	<0.01 ug/L	50	50-140
Benzo[b]fluoranthene	<0.05 ug/L	72	50-140
Benzo[ghi]perylene	<0.1 ug/L	62	50-140
Benzo[k]fluoranthene	<0.05 ug/L	58	50-140
Chrysene	<0.05 ug/L	56	50-140
Dibenz[a h]anthracene	<0.1 ug/L	58	50-140
Fluoranthene	<0.1 ug/L	58	50-140
Fluorene	<0.1 ug/L	56	50-140
Indeno[1 2 3-cd]pyrene	<0.1 ug/L	60	50-140
Naphthalene	<0.1 ug/L	58	50-140

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Phenanthrene	<0.1 ug/L	52	50-140
Pyrene	<0.1 ug/L	58	50-140
Run No 442783 Analysis/Extraction Date 2023-06-03 Analyst DRA Method AMBCOLM1			
Escherichia Coli			
Total Coliforms			
Run No 442785 Analysis/Extraction Date 2023-06-02 Analyst M E Method C SM2130B			
Turbidity	<0.1 NTU	100	70-130
Run No 442824 Analysis/Extraction Date 2023-06-05 Analyst AaN Method C SM2120C			
Colour (Apparent)	<2 TCU	105	90-110
Run No 442864 Analysis/Extraction Date 2023-06-04 Analyst PJ Method EPA 8260			
Tetrachloroethane, 1,1,1,2,-	<0.5 ug/L	88	60-130
Trichloroethane, 1,1,1,-	<0.4 ug/L	81	60-130
Tetrachloroethane, 1,1,2,2,-	<0.5 ug/L	109	60-130
Trichloroethane, 1,1,2,-	<0.4 ug/L	87	60-130
Dichloroethane, 1,1,-	<0.4 ug/L	102	60-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dichloroethylene, 1,1-	<0.5 ug/L	91	60-130
Dichlorobenzene, 1,2-	<0.4 ug/L	104	60-130
Dichloroethane, 1,2-	<0.5 ug/L	82	60-130
Dichloropropane, 1,2-	<0.5 ug/L	82	60-130
1,3,5-trimethylbenzene	<0.3 ug/L	109	60-130
Dichlorobenzene, 1,3-	<0.4 ug/L	100	60-130
Dichloropropene, 1,3-			
Dichlorobenzene, 1,4-	<0.4 ug/L	100	60-130
Acetone	<5 ug/L	80	60-130
Benzene	<0.5 ug/L	84	60-130
Bromodichloromethane	<0.3 ug/L	102	60-130
Bromoform	<0.4 ug/L	84	60-130
Bromomethane	<0.5 ug/L	101	60-130
Dichloroethylene, 1,2-cis-	<0.4 ug/L	110	60-130
Dichloropropene, 1,3-cis-	<0.5 ug/L	102	60-130
Carbon Tetrachloride	<0.2 ug/L	83	60-130
Chloroethane	<0.5 ug/L	103	60-130
Chloroform	<0.5 ug/L	103	60-130

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 COC #: 908261

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dibromochloromethane	<0.3 ug/L	83	60-130
Dichlorodifluoromethane	<0.5 ug/L	92	60-130
Methylene Chloride	<4.0 ug/L	107	60-130
Ethylbenzene	<0.5 ug/L	80	60-130
Ethylene dibromide	<0.2 ug/L	89	60-130
Petroleum Hydrocarbons F1	<20 ug/L	92	60-140
Hexane (n)	<5 ug/L	100	60-130
m/p-xylene	<0.4 ug/L	102	60-130
Methyl Ethyl Ketone	<2 ug/L	120	60-130
Methyl Isobutyl Ketone	<5 ug/L	110	60-130
Methyl tert-Butyl Ether (MTBE)	<2 ug/L	100	60-130
Chlorobenzene	<0.5 ug/L	83	60-130
o-xylene	<0.4 ug/L	102	60-130
Styrene	<0.5 ug/L	99	60-130
Dichloroethylene, 1,2-trans-	<0.4 ug/L	103	60-130
Dichloropropene, 1,3-trans-	<0.5 ug/L	96	60-130
Tetrachloroethylene	<0.3 ug/L	110	60-130
Toluene	<0.4 ug/L	108	60-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Trichloroethylene	<0.3 ug/L	99	60-130
Trichlorofluoromethane	<0.5 ug/L	110	60-130
Vinyl Chloride	<0.2 ug/L	99	60-130
Run No 442872 Analysis/Extraction Date 2023-06-05 Analyst PJ Method EPA 8260			
Xylene Mixture			
Run No 442894 Analysis/Extraction Date 2023-06-05 Analyst PJ Method CCME O.Reg 153/04			
Petroleum Hydrocarbons F1-BTEX			
Run No 442898 Analysis/Extraction Date 2023-06-05 Analyst AsA Method SM2320,2510,4500H/F			
Alkalinity (CaCO3)	<5 mg/L	97	90-110
Conductivity	<5 uS/cm	99	90-110
F	<0.10 mg/L	99	90-110
pH		99	90-110
Run No 442900 Analysis/Extraction Date 2023-06-05 Analyst AsA Method SM 5310B			
DOC	<0.5 mg/L	104	80-120

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 442945 Analysis/Extraction Date 2023-06-06 Analyst IP Method SM5530D/EPA420.2			
Phenols	<0.001 mg/L	103	50-120
Run No 442969 Analysis/Extraction Date 2023-06-06 Analyst SKH Method EPA 351.2			
Total Kjeldahl Nitrogen	<0.100 mg/L	110	70-130
Run No 442981 Analysis/Extraction Date 2023-06-06 Analyst AaN Method SM 4110			
Chloride	<1 mg/L	120	90-110
N-NO2	<0.10 mg/L	104	90-110
N-NO3	<0.10 mg/L	99	90-110
SO4	<1 mg/L	100	90-110
Run No 442983 Analysis/Extraction Date 2023-06-07 Analyst R T Method EPA 350.1			
N-NH3	<0.020 mg/L	110	80-120
Run No 442988 Analysis/Extraction Date 2023-06-06 Analyst SD Method EPA 200.8			
Silver	<0.0001 mg/L	85	80-120
Aluminum	<0.01 mg/L	94	80-120

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Arsenic	<0.001 mg/L	89	80-120
Boron (total)	<0.01 mg/L	101	80-120
Barium	<0.01 mg/L	87	80-120
Beryllium	<0.0005 mg/L	104	80-120
Cadmium	<0.0001 mg/L	99	80-120
Cobalt	<0.0002 mg/L	96	80-120
Chromium Total	<0.001 mg/L	95	80-120
Copper	<0.001 mg/L	96	80-120
Iron	<0.03 mg/L	89	80-120
Mercury	<0.0001 mg/L	95	80-120
Manganese	<0.01 mg/L	96	80-120
Molybdenum	<0.005 mg/L	87	80-120
Nickel	<0.005 mg/L	98	80-120
Lead	<0.001 mg/L	96	80-120
Antimony	<0.0005 mg/L	106	80-120
Selenium	<0.001 mg/L	97	80-120
Strontium	<0.001 mg/L	88	80-120
Thallium	<0.0001 mg/L	93	80-120

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Uranium	<0.001 mg/L	88	80-120
Vanadium	<0.001 mg/L	93	80-120
Zinc	<0.01 mg/L	102	80-120
Run No 443014 Analysis/Extraction Date 2023-06-07 Analyst SS			
Method CCME O.Reg 153/04			
Petroleum Hydrocarbons F2	<20 ug/L	80	60-140
Petroleum Hydrocarbons F3	<50 ug/L	80	60-140
Petroleum Hydrocarbons F4	<50 ug/L	80	60-140
Run No 443022 Analysis/Extraction Date 2023-06-07 Analyst Z S			
Method M SM3120B-3500C			
Calcium	<1 mg/L	100	90-110
Potassium	<1 mg/L	105	87-113
Magnesium	<1 mg/L	100	76-124
Sodium	<1 mg/L	103	82-118
Run No 443045 Analysis/Extraction Date 2023-06-07 Analyst AaN			
Method C SM4500-S2-D			
S2-	<0.01 mg/L	82	80-120
Run No 443049 Analysis/Extraction Date 2023-06-07 Analyst SKH			
Method C SM2340B			

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Hardness as CaCO3			
Ion Balance			
TDS (COND - CALC)			
Run No 443125 Analysis/Extraction Date 2023-06-08 Analyst R G Method P 8270			
1+2-methylnaphthalene			
Run No 443384 Analysis/Extraction Date 2023-06-13 Analyst AET Method SUBCONTRACT-CA-INORG			
Tannin & Lignin			

Guideline = ODWSOG

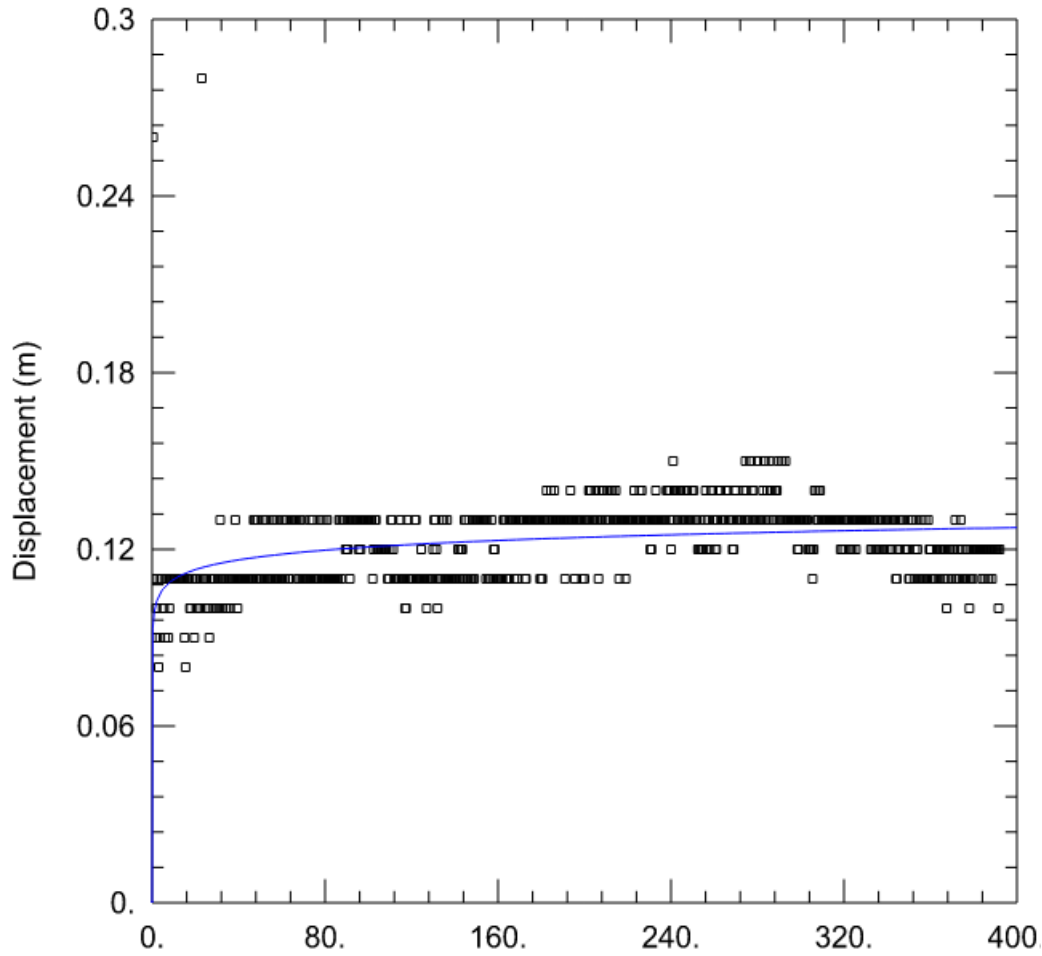
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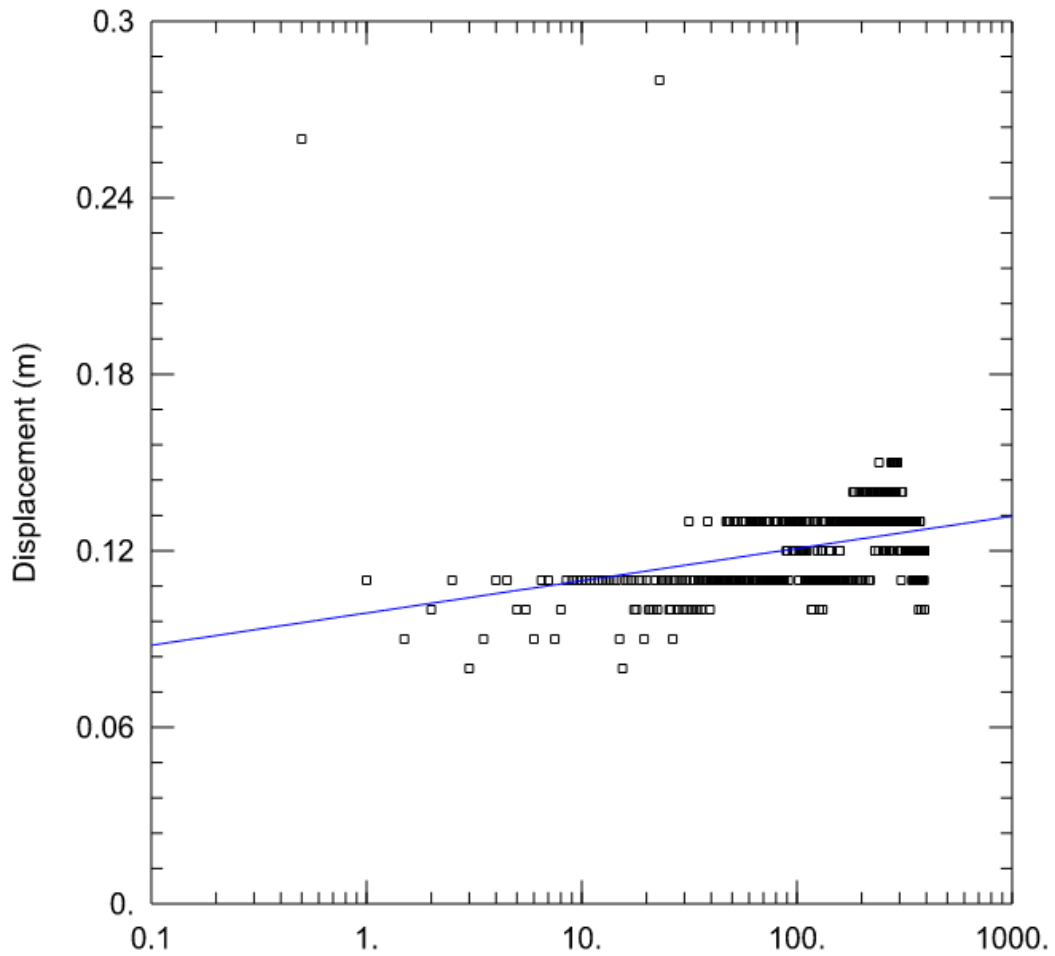
Pumping Test Analysis Report

File No.	PH4401	Well ID:	TW1
Date:	Thursday, June 1, 2023	Solution Method:	Theis
Client:	Cash for Trash	Transmissivity (m ² /day):	914.3
Site Address:	7628 Flewellyn Road	Discharge Rate (L/min)	38
Project:	Proposed Commercial Development	Analysis performed by:	AS



Pumping Test Analysis Report

File No.	PH4401	Well ID:	TW1
Date:	Thursday, June 1, 2023	Solution Method:	Cooper-Jacob
Client:	Cash for Trash	Transmissivity (m ² /day):	914.3
Site Address:	7628 Flewellyn Road	Discharge Rate (L/min)	18.75
Project:	Proposed Commercial Development	Analysis performed by:	AS



Pumping Test Analysis Report

File No. PH4401
Date: Thursday, June 1, 2023
Client: Cash for Trash
Site Address: 7628 Flewellyn Road
Project: Proposed Commercial
Development

Summary Table:			
Solution Method:	Well ID:	Transmissivity (m ² /day):	
Theis	TW1	914.3	
Cooper-Jacob	TW1	914.3	
Average:		914.30	

PREDICTIVE NITRATE IMPACT ASSESSEMENT

Infiltration Factors

Topography	0.20
Soil	0.10
Cover	0.10
Total	0.40

Site Characteristics

Area of Site :	202234.4	m ²
Assumed Impervious Bedrock Outcropping	18204	m ²
Cash for Trash buildings, park lot PLUS Outdoor Metal Storage	96606	m ²
Bedrock Outcropping plus Cash for Trash site	114810	m ²
Impervious Area	114810	m ²
Percent Impervious Area =	57	%
Infiltration Area =	87424	m ²

Septic Effluent

Concentration of Effluent (Cs) =	40	mg/L
Daily Sewage Flow (Qs)=	10	m ³
See Notes below.		

Infiltration Calculation

Nitrate concentration in precipitation (C _i) =	0	mg/L
Surplus Water (Environment Canada)	341	mm/yr
Factored Water Surplus =	136	mm/yr
Infiltration % due to stormwater management measures	-	%
Infiltration rate from stormwater management measures =	0	mm/yr
Infiltration Flow Entering the System (Q _i) =	33	m ³ /day

Mass Balance Model (MOEE, 1995)

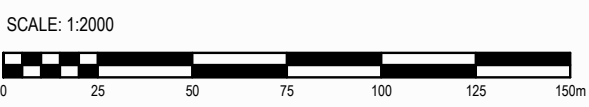
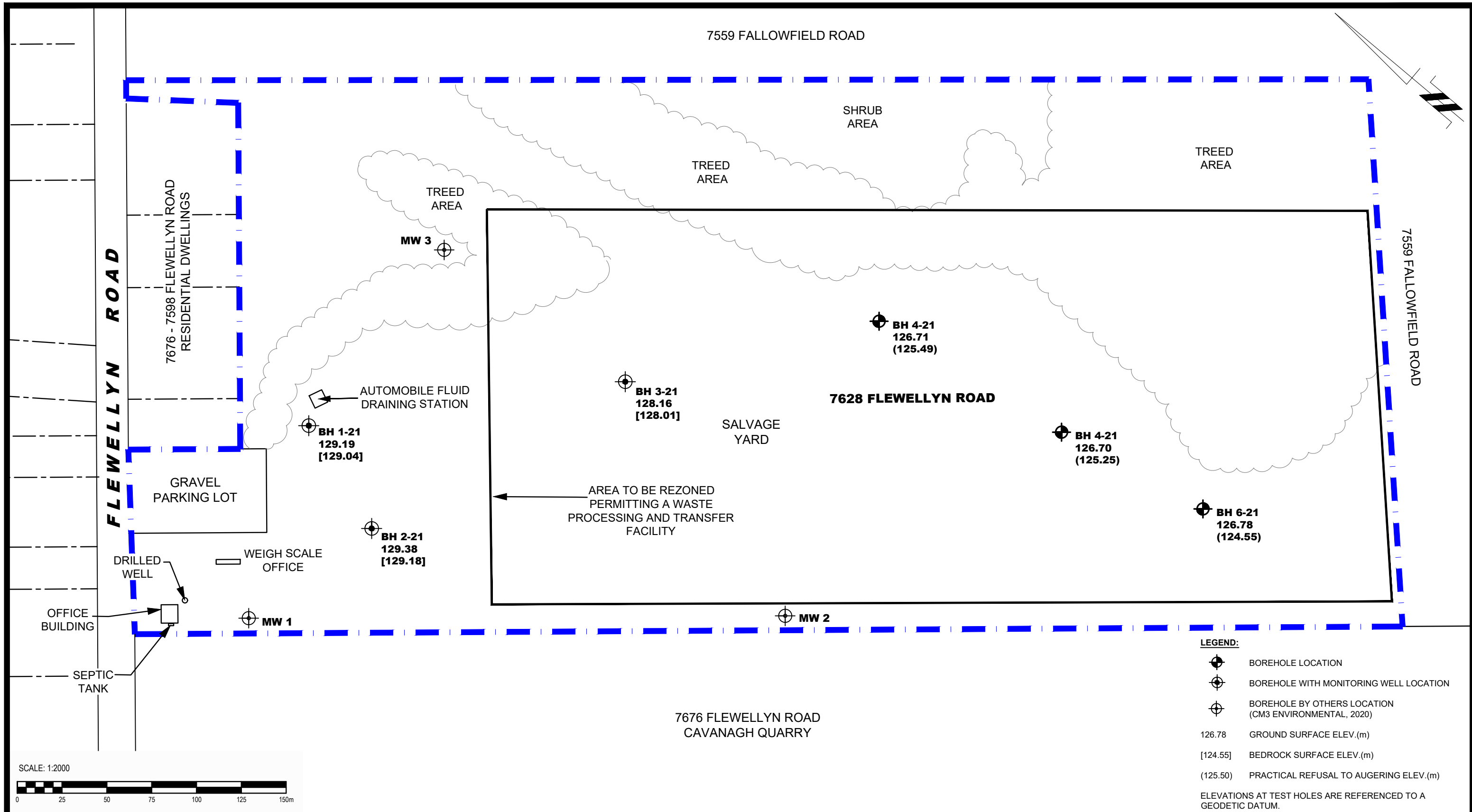
$$C_T = (Q_b C_b + Q_e C_e + Q_i C_i) / (Q_b + Q_e + Q_i) = \text{Cumulative Nitrate Concentration}$$

Q _b = flow entering the system across the upgradient area	0	m ³ /day
C _b = background nitrate concentration	0	mg/L
Q _e = flow entering the system from the septic drainfield	10	m ³ /day
C _e = concentration of nitrates in the septic effluent	40	mg/L
Q _i = flow entering the system from infiltration	33	m ³ /day
C _i = Concentration of nitrates in the infiltrate	0	mg/L
C_T =	9.37	mg/L

Notes: Site characteristic values were measured as approximate values from the available site plan. Daily Sewage Flow volume was calculated by Paterson Group.

TW1 inputs			
pH	8	A	0.17
TDS	500	B	2.32
Hardness	254	C	2.00
Alkalinity	276	D	2.44
Temp.	13		
		pHs =	7.346631847

Langelier Saturation Index (LSI) Calculation		(Langelier, 1936)
LSI = pH - pHs	A = (Log10 [TDS] - 1) / 10	
pHs = (9.3 + A + B) - (C + D)	B = -13.12 x Log10 (oC + 273) + 34.55	
Where:	C = Log10 [Ca2+ as CaCO3] - 0.4	
	D = Log10 [alkalinity as CaCO3]	
		LSI = 0.7
LSI	Effect	
0.5 to 2	Water is super saturated and tends to precipitate a scale layer of calcium carbonate (scale forming but non-corrosive)	
0 to 0.5	Water is super saturated and tends to precipitate a scale layer of calcium carbonate (slightly scale forming and corrosive).	
0	Water is saturated (in equilibrium) with calcium carbonate. A scale layer of calcium carbonate is neither precipitated nor dissolved.	
0 to -0.5	Water is under saturated and tends to dissolve solid calcium carbonate (slightly corrosivebut non-scale forming).	
-0.5 to -2	Water is under saturated and tends to dissolve solid calcium carbonate (seriously corrosive).	



LEGEND:

- BOREHOLE LOCATION
- BOREHOLE WITH MONITORING WELL LOCATION
- BOREHOLE BY OTHERS LOCATION (CM3 ENVIRONMENTAL, 2020)
- 126.78 GROUND SURFACE ELEV.(m)
- [124.55] BEDROCK SURFACE ELEV.(m)
- (125.50) PRACTICAL REFUSAL TO AUGERING ELEV.(m)

ELEVATIONS AT TEST HOLES ARE REFERENCED TO A GEODETIC DATUM.

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

NO.	REVISIONS	DATE	INITIAL
0			

**CASH FOR TRASH CANADA
GEOTECHNICAL INVESTIGATION
7628 FLEWELLYN ROAD**

OTTAWA, ONTARIO

TEST HOLE LOCATION PLAN

Scale:	1:2000	Date:	08/2021
Drawn by:	RCG	Report No.:	PG5783-1
Checked by:	KP	Dwg. No.:	PG5783-1
Approved by:	SD	Revision No.:	

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316/4e



GROUND WATER BRANCH
15 No. 2519
AUG 20 1957
ONTARIO WATER
RESOURCES COMMISSION

UTM 18 424140 E

5R 5005210 N

Elev. 470 430

Basin 25

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Gaulburne
Village, Town or City
Address Stittsville

(day) (month) (year)

Pipe and Casing Record

Pumping Test

Casing diameter (s) 4 in. Static level 12
Length (s) 15 ft. Pumping rate 20 gpm
Type of screen NONE Pumping level 50 ft.
Length of screen Duration of test 10 minutes

Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
<u>shale</u>	<u>0</u>	<u>5</u>			
<u>limestone GREY</u>	<u>5</u>	<u>57</u>	<u>55</u>	<u>43</u>	<u>sulphur</u>

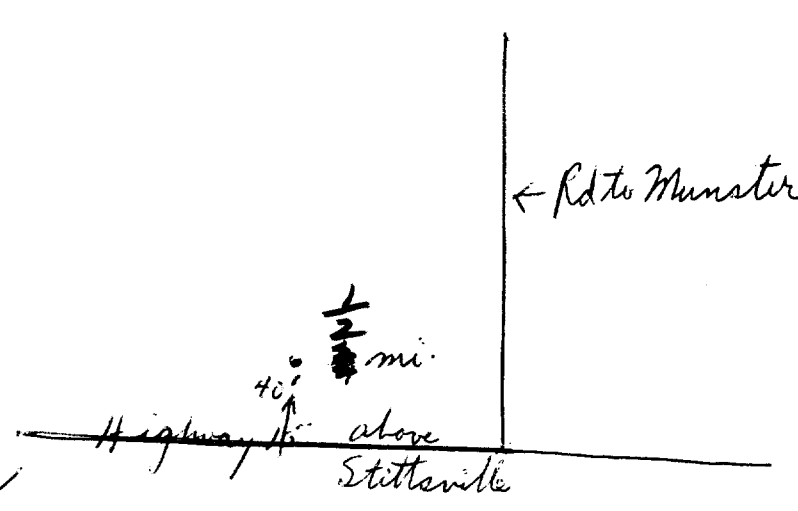
For what purpose(s) is the water to be used?
household
Is water clear or cloudy? cloudy
Is well on upland, in valley, or on hillside?
upland
Drilling firm
Address
Name of Driller B. Sparks
Address South March
Licence Number 490

I certify that the foregoing statements of fact are true.

Date Aug 17/57 B. Sparks
Signature of Licensee

Location of Well

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



310/4e



15 No. 2558
APR 26 1961
ONTARIO WATER RESOURCES COMMISSION

UTM 1182 423600E
5R 5004830N

Elev. 4R 0450

The Ontario Water Resources Commission Act, 1957

Basin 251

WATER WELL RECORD

County or District Carleton Township, Village, Town or City Goulbourn

Lot 9 Date completed 30 Dec 1960
(day month year)

Address Stittsville Ont

Casing and Screen Record

Inside diameter of casing 4"
Total length of casing 12'
Type of screen -
Length of screen -
Depth to top of screen -
Diameter of finished hole 4"

Pumping Test

Static level 12'
Test-pumping rate 5' G.P.M.
Pumping level 15'
Duration of test pumping 1/2 hr
Water clear or cloudy at end of test clear
Recommended pumping rate 5' G.P.M.
with pumping level of 15'

Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, sulphur)
<u>Red Sand</u>	<u>0</u>	<u>12'</u>			
<u>Gray lime Stone</u>	<u>12'</u>	<u>23'</u>	<u>23'</u>	<u>36'</u>	<u>fresh</u>

For what purpose(s) is the water to be used?
house

Is well on upland, in valley, or on hillside?
hillside

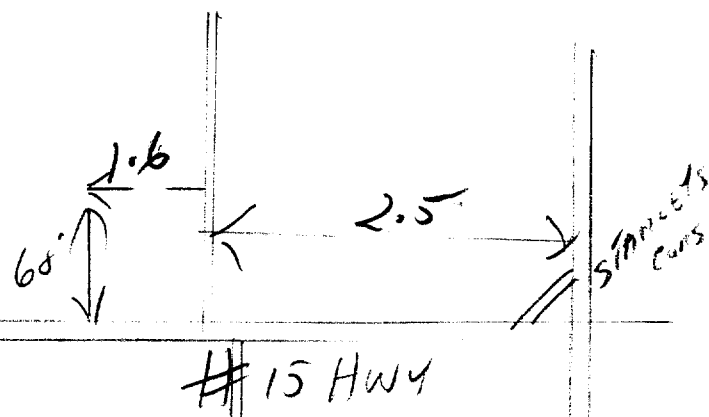
Drilling Firm J P Sparks
Address 3 Stittsville Ont

Name of Driller Clayton H Sparks
Address Stittsville Ont

Date Dec 30 1960
J P Sparks
(Signature of Licensed Drilling Contractor)

Location of Well

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



316/ae



GROUND WATER BRANCH
15 No. 2589
AUG 27 1963
ONTARIO WATER RESOURCES COMMISSION

C

UTM 18Z 423940E

CO 5 RT 5 0 0 5 1 1 1 0 N

The Ontario Water Resources Commission Act

WATER WELL RECORD

Elev. 04 R# 0 4 3 3

Basin 25
County or District Carleton

Township, Village, Town or City Goodbourn

Lot # 12 Date completed 14 August 1963
(day month year)

Address RR#1 Stittville Ontario

Casing and Screen Record

Inside diameter of casing 4"

Total length of casing 11'

Type of screen —

Length of screen —

Depth to top of screen —

Diameter of finished hole 4"

Pumping Test

Static level 4' *fill up over night*

Test-pumping rate 20 G.P.M.

Pumping level 74' ↓

Duration of test pumping 20 min

Water clear or cloudy at end of test CLEAR

Recommended pumping rate 10 G.P.M.

with pump setting of 74' feet below ground surface

Well Log

Water Record

Overburden and Bedrock Record

From ft.

To ft.

Depth(s) at which water(s) found

Kind of water (fresh, salty, sulphur)

Dropped well from

52

52

Black Limestone

52'

80'

70'

Fresh

For what purpose(s) is the water to be used? *HOUSE*

Is well on upland, in valley, or on hillside? *UPLAND*

Drilling or Boring Firm *Delmar S. Hueston*

Address *RR#2 Stittville Ont.*

Licence Number *#1017*

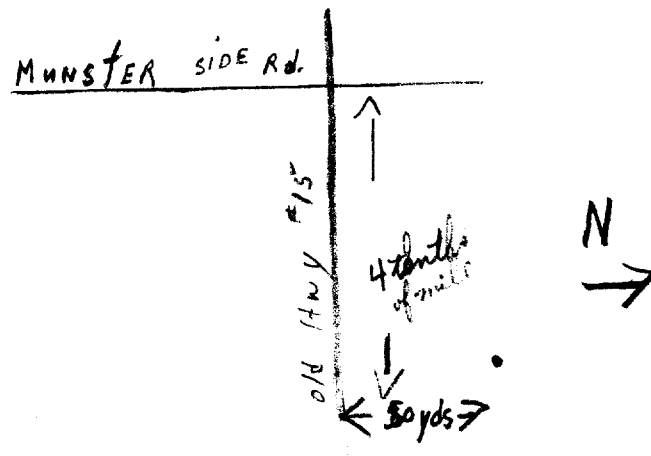
Name of Driller or Borer *same*

Date *Aug 17/1963*

Delmar S. Hueston
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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



UTM 18Z 424030
5R 5005210
 Elev. 4R 0440
 Basin 25

316/ae



The Well Drillers Act
 Department of Mines, Province of Ontario

15 No 2560
RECEIVED
 JAN - 4 1952
 GEOLOGICAL BRANCH
 DEPARTMENT OF MINES

Water Well Record

County Caledon Township Village, Town or City Houlbourn
 Town or City Stittville Ont.
Stittville Ont.

Date Completed (day) June 19 (month) 1951 (year) Cost of Well (excluding pump) \$182.00

Pipe and Casing Record

Pumping Test

Casing diameter(s) <u>4"</u>	Date <u> </u>
Length(s) of casing(s) <u>15'</u>	Static level <u>1.5'</u>
Type of screen <u> </u>	Pumping level <u>1.5'</u>
Length of screen <u> </u>	Pumping rate <u>2 1/2 g.p.m.</u>
Distance from top of screen to ground level <u> </u>	Duration of test <u>1/2 hr.</u>
Is well a gravel-wall type? <u>gravel</u>	Distance from cylinder or bowls to ground level <u> </u>

Water Record

Kind (fresh or mineral) <u>fresh</u>	Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
Quality (hard, soft, contains iron, sulphur, etc.) <u>hard</u>	<u>15'</u>	<u>fresh</u>	<u>37'</u>
Appearance (clear, cloudy, coloured) <u>clear</u>	<u>52</u>		
For what purpose(s) is the water to be used? <u>house</u>			
How far is well from possible source of contamination? <u>100 yd.</u>			
What is the source of contamination? <u>Outside closet</u>			
Enclose a copy of any mineral analysis that has been made of water <u> </u>			

Well Log

Overburden and Bedrock Record

From To

15 feet gravel and 37 feet
rock limestone

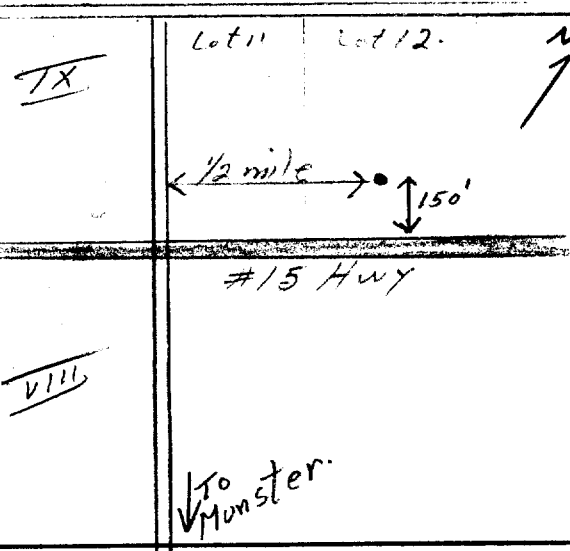
0 ft.ft.

Gravel
limestone

0 15
15 52

Location of Well

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



Situation: Is well on upland, in valley, or on hillside? upland
 Drilling Firm. F. P. Sparks & Son
 Address. Stittville Ont.
 Name of Driller. same Address. same
 Date Licence Number 396
F. P. Sparks
 Signature of Licensee

31G/4e



ONTARIO

15 No 2561

GROUND WATER BRANCH
DEC 6 1960
ONTARIO WATER RESOURCES COMMISSION

X

UTM 1182 424160 E

5R 5005300 N

Elev. 480.430

Basin 1205A 121

The Water-well Drillers Act, 1954

Department of Mines

Water-Well Record

County of FRANKLIN Township, Village, Town or City Goul Bouché
Village, Town or City)
address

Date completed 21 1960
(day) (month) (year)

Pipe and Casing Record

Pumping Test

Casing diameter(s) 4"
Length(s) 12'
Type of screen -
Length of screen -

Static level 6
Pumping rate 6
Pumping level 10
Duration of test 1 HR

Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
SHALEY ROCK	0	12			
GREY LIMESTONE	12	44	35-44	38	FRESH

For what purpose(s) is the water to be used?
New Home
Is water clear or cloudy? clean
Is well on upland, in valley, or on hillside?

Drilling firm F.P. SPARKS
Address 577 DUNDAS

Name of Driller CLAYTON H. SPARKS
Address

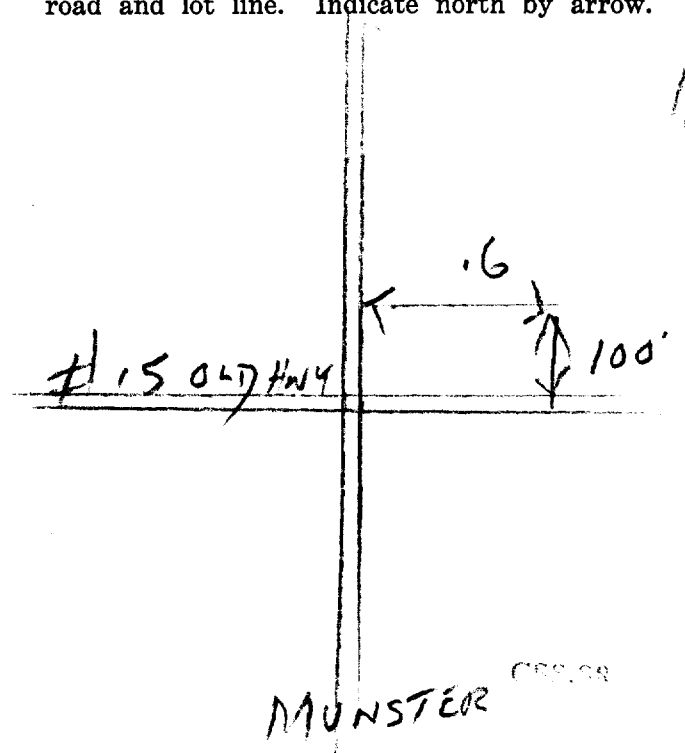
Licence Number

I certify that the foregoing statements of fact are true.

Date Nov 29 G.P. Sparks
Signature of Licensee

Location of Well

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



MUNSTER

31G/AE



GROUND-WATER BRANCH 15 N. 2162
AUG 30 1961
ONTARIO WATER RESOURCES COMMISSION

[Handwritten mark]

UTM 1182 4239810 E

105R 150101511410 N

The Ontario Water Resources Commission Act

Elev. 104R 102438

WATER WELL RECORD

Basin 215 | CARLETON

Township, Village, Town or City Goulbourn

County or District #9

Lot PART 12

Date completed 4 Aug 61 (day month year)

Address RR #1 STITTSVILLE ONT.

Casing and Screen Record

Inside diameter of casing 4"

Total length of casing 13 ft. 7"

Type of screen -

Length of screen -

Depth to top of screen -

Diameter of finished hole 4"

Pumping Test

Static level 20'

Test-pumping rate 5 G.P.M.

Pumping level 30'

Duration of test pumping 1 HR.

Water clear or cloudy at end of test CLEAR

Recommended pumping rate 5 G.P.M.

with pump setting of 50' feet below ground surface

Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
CLAY	0	3'		
SHALE	3'	5'		
FINE GRAVEL	5'	7 1/2'		
BLACK LIMESTONE	7 1/2"	52'	48'	FRESH

For what purpose(s) is the water to be used? HOUSE

Is well on upland, in valley, or on hillside? UPLAND

Drilling or Boring Firm Delmar S. Hueston

Address RR #1 STITTSVILLE

Licence Number #355

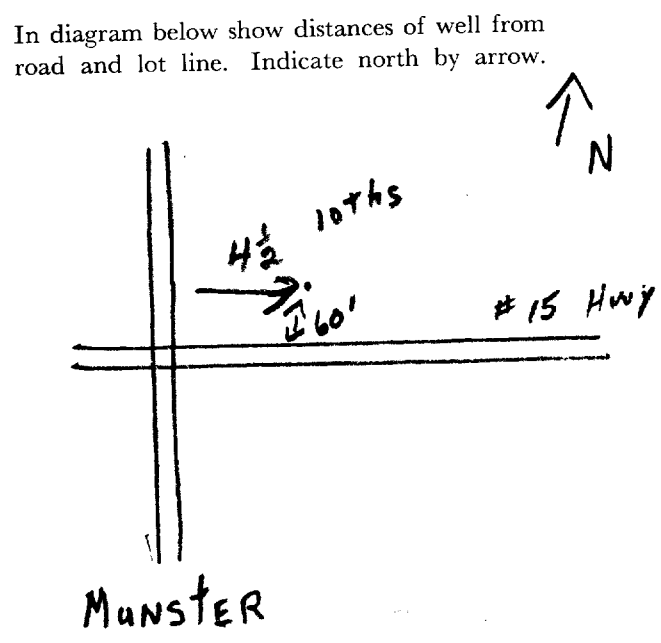
Name of Driller or Borer SAME

Address SAME

Date Aug 4, 1961

Delmar S. Hueston
(Signature of Licensed Drilling or Boring Contractor)

Location of Well





Ontario

WATER WELL RECORD

31/G4

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

11 1515762 15003 CON 08
 COUNTY OR DISTRICT: Carleton TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Goulburn CON. BLOCK, TRACT, SURVEY, ETC.: 8
 DATE COMPLETED: DAY 05 MO 11 YR 76
 ADDRESS: 137 Bradford St. Ottawa, Ontario
 HING: 005075 RC: 5 ELEVATION: 037.2 RC: 5 BASIN CODE: 2.6

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
brown	clay			0	8
grey	limestone		soft	8	82
grey	limestone	green streaks	broken	82	85

31 0008695 008221585 008521571
 32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
10-13	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR		
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR		
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR		
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR		
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR		
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6.5	1 <input checked="" type="checkbox"/> STEEL	1.88	0	00 25
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input checked="" type="checkbox"/> OPEN HOLE		25	85
06	1 <input type="checkbox"/> STEEL			20-23
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input checked="" type="checkbox"/> OPEN HOLE			0085
06	1 <input type="checkbox"/> STEEL			27-30
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE			

SCREEN

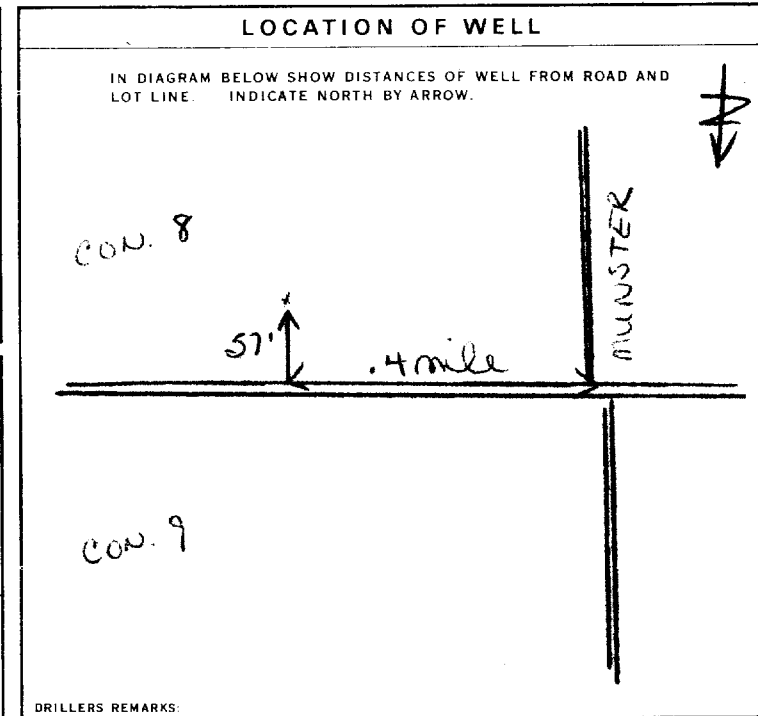
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN
		FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: 1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE: 0030 GPM	DURATION OF PUMPING: 01 HOURS 00 MINS
STATIC LEVEL: 015 FEET	WATER LEVEL END OF PUMPING: 045 FEET	WATER LEVELS DURING PUMPING: 045 FEET
IF FLOWING, GIVE RATE: _____ GPM	PUMP INTAKE SET AT: _____ FEET	WATER AT END OF TEST: _____ FEET
RECOMMENDED PUMP TYPE: <input checked="" type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: 055 FEET	RECOMMENDED PUMPING RATE: 0005 GPM



FINAL STATUS OF WELL 1 WATER SUPPLY

WATER USE 01 1 DOMESTIC

METHOD OF DRILLING 5 1 CABLE TOOL

CONTRACTOR

NAME OF WELL CONTRACTOR: Capital Water Supply Ltd. LICENCE NUMBER: 1558
 ADDRESS: Box 490 Stittsville, Ontario
 NAME OF DRILLER OR BORER: D. McDougall LICENCE NUMBER: _____
 SIGNATURE OF CONTRACTOR: [Signature] SUBMISSION DATE: DAY 9 MO 11 YR 76

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 1558 DATE RECEIVED: 091276
 DATE OF INSPECTION: 17/6/77 INSPECTOR: [Signature]
 REMARKS: P L WI
 CSS 58



P.P.M.

WATER WELL RECORD

31 9/4

Ontario

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

11 | 1515845 | 15003 | CON. | 09
 COUNTY OR DISTRICT: **Conleton** | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **Goulburn** | CON., BLOCK, TRACT, SURVEY ETC.: **9** | DATE COMPLETED: DAY **12** MO **02** YR **77**
 # **7**, **Stittsville, Ontario**
 RC **05000** | ELEVATION **0435** | BASIN CODE **26**

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
brown	sand	gravel	packed	0	8
grey	limestone	black layers of soft limestone	med	8	98

31 | 00086281179 | 009821585

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0084	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0095	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/8	STEEL	188	0	2024
6	GALVANIZED			
5 7/8	CONCRETE			
	OPEN HOLE		24	98
6	STEEL			
	GALVANIZED			
	CONCRETE			
	OPEN HOLE			0098
	STEEL			
	GALVANIZED			
	CONCRETE			
	OPEN HOLE			

SCREEN

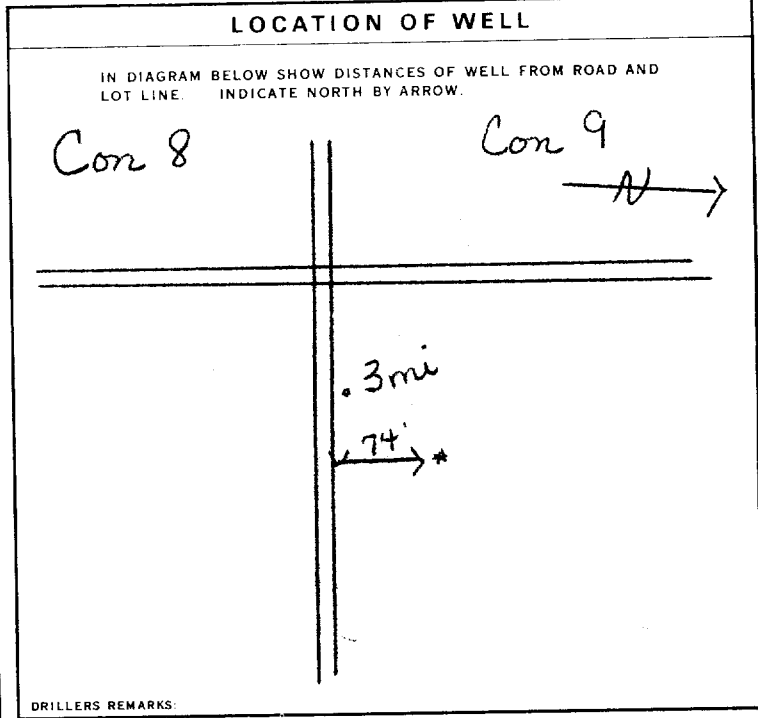
SIZES OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		DEPTH TO TOP OF SCREEN

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD 1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE 0010 GPM	DURATION OF PUMPING 1-14 HOURS 01 15-16 HOURS 00 17-18 HOURS 00
STATIC LEVEL 020 FEET	WATER LEVEL END OF PUMPING 065 FEET	WATER LEVELS DURING 15 MINUTES 065 FEET 30 MINUTES 065 FEET 45 MINUTES 065 FEET 60 MINUTES 065 FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 075 FEET	RECOMMENDED PUMPING RATE 0005 GPM



FINAL STATUS OF WELL 1 WATER SUPPLY

WATER USE 01 1 DOMESTIC

METHOD OF DRILLING 5 1 CABLE TOOL

CONTRACTOR

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

ADDRESS: **Box 490, Stittsville, Ontario.**

NAME OF DRILLER OR BORER: **Walter Kavanagh** LICENCE NUMBER: _____

SIGNATURE OF CONTRACTOR: *Walter Kavanagh* SUBMISSION DATE: DAY **14** MO **2** YR **77**

OFFICE USE ONLY

DATA SOURCE: **1** CONTRACTOR: **1558** DATE RECEIVED: **080377**

DATE OF INSPECTION: **June 21/77** INSPECTOR: **Ken PS**

REMARKS: _____

P.S. WI



Ontario P.P.M.

WATER WELL RECORD

31 9/4

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

11

1515932-

MUNICIPALITY 15003

CON. CON

09

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **Southburn** 3 CON. BLOCK, TRACT, SURVEY, ETC.: 9

DATE COMPLETED: DAY 24 MO 05 YR 77

R. # 1 Stittsville, Ontario

NG 05100 RC 5 ELEVATION 0430 RC 5 BASIN CODE 2.6

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
		Previously drilled		0	98
grey	limestone			98	110

31 0098 24 0110215

32

41 WATER RECORD

WATER FOUND AT FEET	KIND OF WATER
0108	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input checked="" type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5 7/8	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE	188	0	0101
6	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		101	110
05	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE			0110

SCREEN RECORD

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

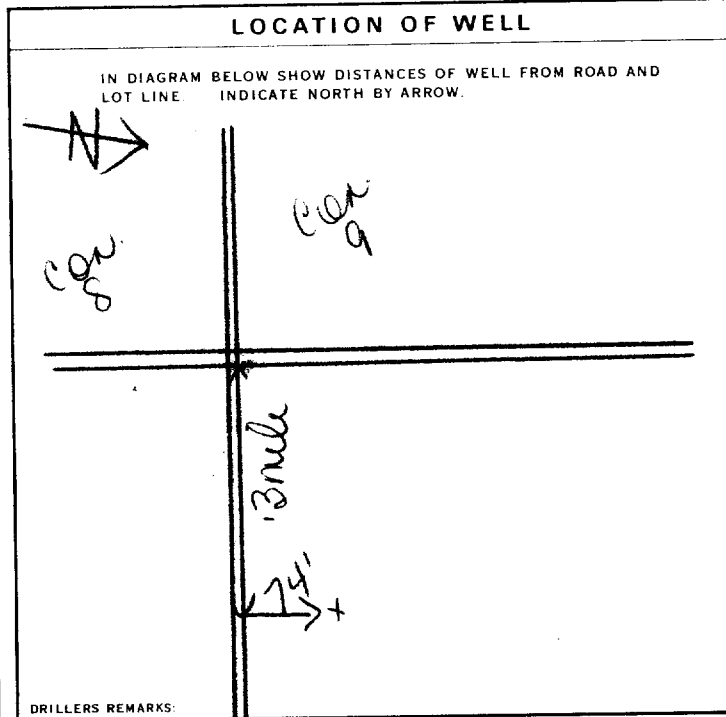
MATERIAL AND TYPE: _____ DEPTH TO TOP OF SCREEN: _____

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	0015 GPM	02 HOURS 00 MINS
STATIC LEVEL: 042 FEET	WATER LEVEL END OF PUMPING: 045 FEET	WATER LEVELS DURING:
		15 MINUTES: 045 FEET 30 MINUTES: 045 FEET 45 MINUTES: 045 FEET 60 MINUTES: 045 FEET
IF FLOWING, GIVE RATE: _____ GPM	PUMP INTAKE SET AT: _____ FEET	WATER AT END OF TEST: _____ FEET
RECOMMENDED PUMP TYPE: <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: 060 FEET	RECOMMENDED PUMPING RATE: 0005 GPM



FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF DRILLING

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: **1558**

ADDRESS: **Box 490 Stittsville, Ontario**

NAME OF DRILLER OR BORER: **B. Kavangh** LICENCE NUMBER: _____

SIGNATURE OF CONTRACTOR: *[Signature]* SUBMISSION DATE: DAY **26** MO **5** YR **77**

OFFICE USE ONLY

DATA SOURCE: _____ CONTRACTOR: **1558** DATE RECEIVED: **070677**

DATE OF INSPECTION: **Aug 11/77** INSPECTOR: *[Signature]*

REMARKS: _____

WI



WATER WELL RECORD

319/4

Ontario

d.p.m.

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

11

1515941

MUNICIPALITY 15003

CON. CON

08

COUNTY OR DISTRICT Carleton	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE Goulburn	CON., BLOCK, TRACT, SURVEY, ETC. 8	LOCALITY 011
OWNER (SURNAME FIRST) Cavanagh Constr.	ADDRESS Ashton, Ontario	DATE COMPLETED DAY 30 MONTH 05 YEAR 77	

21

ZONE U T N 10 **18** EASTING 12 **423800** NORTHING 18 **5004850** RC 25 **5** ELEVATION 26 **0360** RC 30 **5** BASIN CODE 31 **216**

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
grey	crushed rock	fill	loose	0	1
brown	sand	broken rock	packed	1	4
grey	limestone		medium hard	4	30
grey	limestone	black streaks	medium soft	30	40
black	limestone		very soft	40	75
green	sandstone		medium soft	75	90

31 00012120177 00046281271 003021573 004021585 00758159085 009041885

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
10-13	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input checked="" type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/8	1 <input checked="" type="checkbox"/> STEEL	188	0	0024
6 3/8	2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		24	90
06	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE			0090

SCREEN

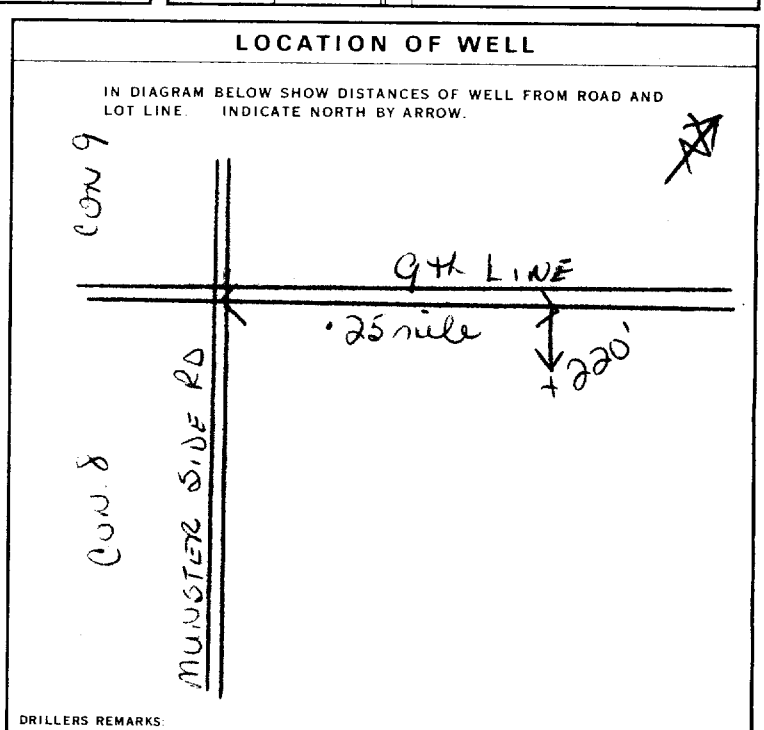
SIZE (S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN
		41-44 FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD 1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	PUMPING RATE 0020 GPM	DURATION OF PUMPING 15-16 HOURS 00 MINS
STATIC LEVEL 048 FEET	WATER LEVEL END OF PUMPING 048 FEET	WATER LEVELS DURING PUMPING 15 MINUTES 26-28 048 FEET 30 MINUTES 29-31 048 FEET 45 MINUTES 32-34 048 FEET 60 MINUTES 35-37 048 FEET
RECOMMENDED PUMP TYPE 1 <input type="checkbox"/> SHALLOW 2 <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 065 FEET	RECOMMENDED PUMPING RATE 0005 GPM



FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF DRILLING

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
1558

ADDRESS
Box 490 Stittsville, Ontario

NAME OF DRILLER OR BORER
J. Moore

LICENCE NUMBER

SIGNATURE OF CONTRACTOR
[Signature]

SUBMISSION DATE
DAY **2** MO. **6** YR. **77**

OFFICE USE ONLY

DATA SOURCE
1

CONTRACTOR
1558

DATE RECEIVED
070677

DATE OF INSPECTION
Aug 11/77

INSPECTOR
[Signature]

REMARKS

P **[Signature]**

WI



WATER WELL RECORD

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

11

1516554

MUNICIP. 15003

CON. CON

09

COUNTY OR DISTRICT <i>Carleton Place</i>	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE <i>Loulbourn</i>	CON., BLOCK, TRACT, SURVEY, ETC. <i>Con 9</i>	LOT <i>P1012</i>
DATE COMPLETED <i>Box 630 Richmond Ont.</i>			DATE COMPLETED DAY <i>11</i> MO <i>05</i> YR <i>78</i>
NG <i>05300</i>	RC <i>4</i>	ELEVATION <i>6430</i>	RC <i>27026</i>

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
<i>grey</i>	<i>clay</i>			<i>0</i>	<i>4</i>
<i>grey</i>	<i>limestone</i>			<i>4</i>	<i>58</i>

31 *0004205* *0058215*

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
<i>0050</i>	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
<i>0058</i>	<input type="checkbox"/> FRESH	<input checked="" type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
<i>06</i>	<input checked="" type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input type="checkbox"/> OPEN HOLE	<i>188</i>	<i>0</i>	<i>0020</i>

SCREEN

SIZE (S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST METHOD

PUMP BAILER

PUMPING RATE *0015* GPM

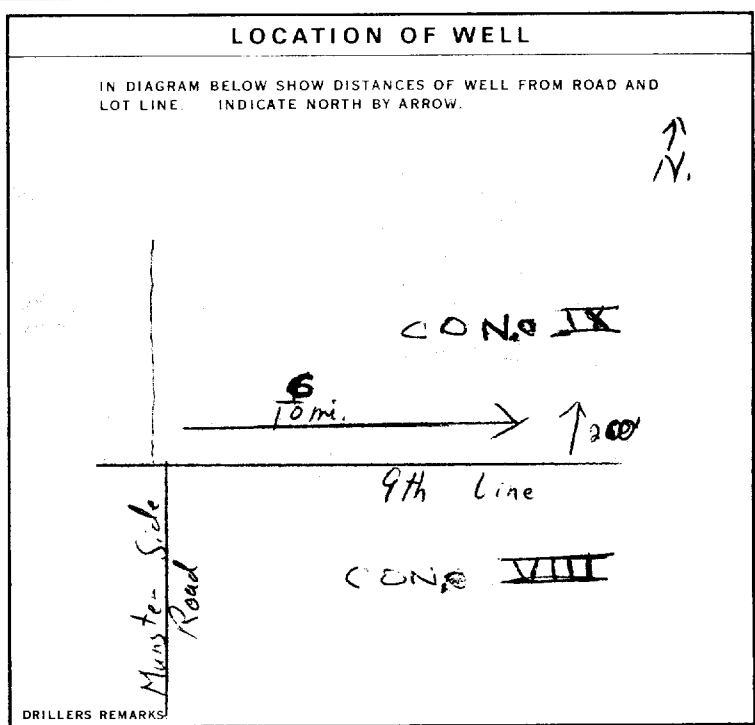
DURATION OF PUMPING *01* HOURS *00* MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
<i>002</i>	<i>025</i>	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES		
<i>002</i>	<i>025</i>	<i>025</i>	<i>025</i>	<i>025</i>	<i>025</i>		

RECOMMENDED PUMP TYPE SHALLOW DEEP

RECOMMENDED PUMP SETTING *025* FEET

RECOMMENDED PUMPING RATE *0005* GPM



FINAL STATUS OF WELL *1*

WATER USE *01*

METHOD OF DRILLING *1*

CONTRACTOR

NAME OF WELL CONTRACTOR *Henry Mann Well Drilling*

LICENCE NUMBER *3644*

ADDRESS *Box 326, Richmond Ont.*

NAME OF DRILLER OR BORER *Henry Mann*

LICENCE NUMBER

SIGNATURE OF CONTRACTOR

SUBMISSION DATE DAY *15* MO *5* YR *78*

OFFICE USE ONLY

DATA SOURCE *1*

CONTRACTOR *3644*

DATE RECEIVED *120778*

DATE OF INSPECTION *15/5/79*

INSPECTOR *Km. J.P.P.*

REMARKS

WATER WELL RECORD

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

11 1517686 15003 CON CAN 09

COUNTY OR DISTRICT: Orleton TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Leulbourn CON. BLOCK, TRACT, SURVEY, ETC.: Con 9 LOT: 012
 DATE COMPLETED: DAY 21 MO 09 YR 81
 BOREHOLE NO.: 005199 RC: 4 ELEVATION: 0440 RC: 4 BASIN CODE: 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
grey	gravel			0	9
grey	limestone		shaly	9	87

31 0009211 008721582
 32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
06-10-11	1 <input checked="" type="checkbox"/> STEEL		13-16
06-11	2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	010022
06-17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		27-30

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE: _____ DEPTH TO TOP OF SCREEN: 41-44 FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: 1 PUMP 2 BAILER
 PUMPING RATE: 00/5 GPM
 DURATION OF PUMPING: 15-16 HOURS 00 17-18 MIN. 00
 STATIC LEVEL: 19-21 047 FEET
 WATER LEVEL END OF PUMPING: 22-24 080 FEET
 WATER LEVELS DURING: 15 MINUTES 080 26-28 080 30 MINUTES 080 29-31 080 45 MINUTES 080 32-34 080 60 MINUTES 080 35-37 080 FEET
 IF FLOWING, GIVE RATE: _____ GPM
 PUMP INTAKE SET AT: _____ FEET
 WATER AT END OF TEST: 42 CLEAR 2 CLOUDY
 RECOMMENDED PUMP TYPE: SHALLOW 4 DEEP
 RECOMMENDED PUMP SETTING: 080 FEET
 RECOMMENDED PUMPING RATE: 00/0 GPM

LOCATION OF WELL

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

↑ N

6 km

Manston Side Rd

DRILLERS REMARKS

FINAL STATUS OF WELL

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

WATER USE

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

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

CONTRACTOR: Henry Mains Well Drilling LICENSE NUMBER: 3644
 ADDRESS: Box 326, Putnam Ont
 NAME OF DRILLER OR BORER: Henry Mains LICENSE NUMBER: _____
 SIGNATURE OF CONTRACTOR: _____ SUBMISSION DATE: DAY 23 MO 09 YR 81

OFFICE USE ONLY

DATA SOURCE: 1 3644 CONTRACTOR: 58-62 3644 DATE RECEIVED: 12 01 82
 DATE OF INSPECTION: _____ INSPECTOR: _____
 REMARKS: _____

WATER WELL RECORD

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

11

1518141

MUNICIPALITY 15003

CON. CON

08

COUNTY OR DISTRICT: OTTAWA CARLETON TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: GOULBOURN CON. BLOCK, TRACT, SURVEY ETC.: 9 LOT: 012
 DATE COMPLETED: DAY 10 MO 02 YR 83
 DEPTH: 0.5299 ELEVATION: 0420 BASIN CODE: 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	EARTH	FILL	LOOSE	0'	5'
GRAY	LIME STONE			5'	37'

31 00056029117 0037215
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0037	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
5.6	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1.98	0' 0022
6	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		22' 37'
06	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		0037

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE	(CEMENT GROUT LEAD PACKER, ETC.)
10-13		
18-21		
24-29		

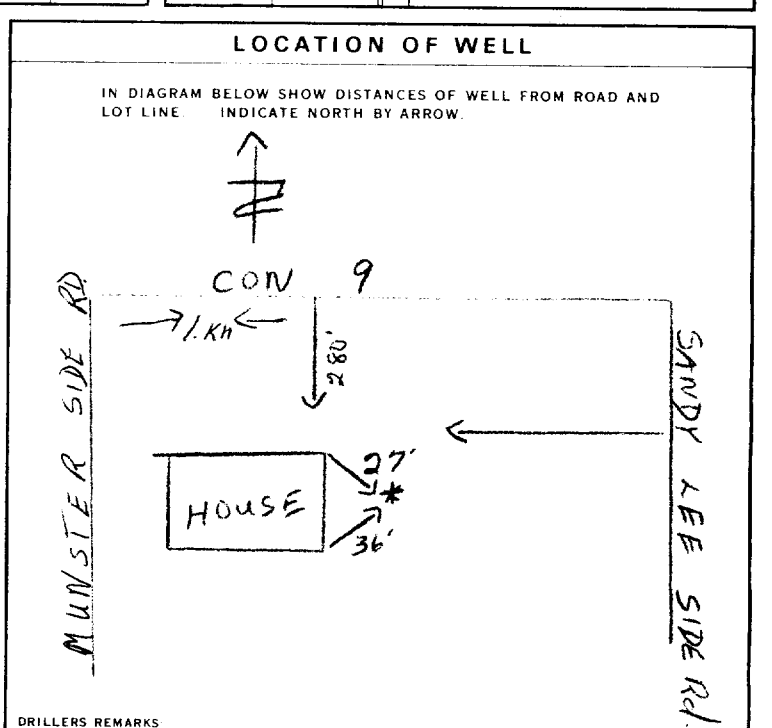
71 PUMPING TEST METHOD

1 PUMP 2 BAILER

PUMPING RATE: 0007 GPM DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
001'	025'	15 MINUTES: 025' 30 MINUTES: 025' 45 MINUTES: 025' 60 MINUTES: 025'

RECOMMENDED PUMP TYPE: SHALLOW DEEP
 RECOMMENDED PUMP SETTING: 030 FEET
 RECOMMENDED PUMPING RATE: 0005 GPM



FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF DRILLING

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: M. KAVANAGH & SON LICENCE NUMBER: 3142
 ADDRESS: RR 2 CARLETON PLACE
 NAME OF DRILLER OR BORER: MIKE KAVANAGH LICENCE NUMBER: 3142
 SIGNATURE OF CONTRACTOR: Michael Kavanagh SUBMISSION DATE: DAY 14 MO 2 YR 83

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 3142 DATE RECEIVED: 030383
 DATE OF INSPECTION: INSPECTOR:
 REMARKS:

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

Address of Well Location (County/District/Municipality) Ottawa Carleton 5 Township Goulbourn Lot 12 Concession 9 RR#/Street Number/Name 7579 Flewellyn Road City/Town/Village Stittsville Site/Compartment/Block/Tract etc. GPS Reading NAD Zone Easting Northing Unit Make/Model Mode of Operation: [] Undifferentiated [X] Averaged [] Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

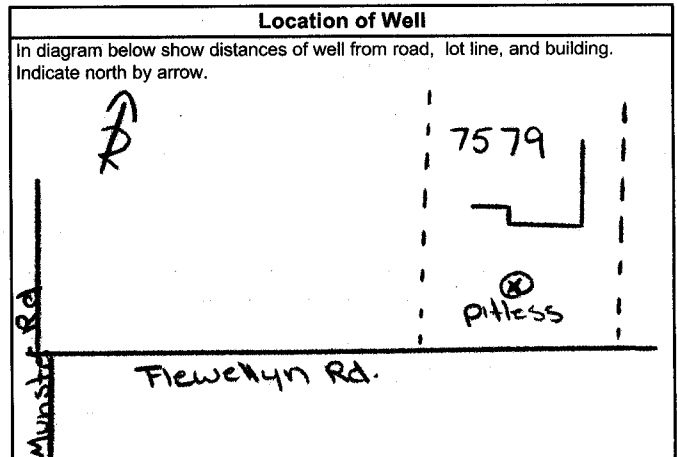
Table with columns: General Colour, Most common material, Other Materials, General Description, Depth From, Metres To. Rows include: Brown Sandy Soil Stones (0-1.82), Brown Shale (1.82-3.35), Gray Limestone (3.35-12.19), Green & Red Shale (12.19-35.96)

Hole Diameter: Depth (0-6.40, 6.40-35.96), Diameter (22.75, 15.23). Water Record: Water found at 32.1 m, Kind of Water: Fresh, Sulphur, Gas, Salty, Minerals. Chlorinated: [X] Yes [] No

Construction Record: Inside diam 15.86, Material Steel, Wall thickness .48, Depth 6.40. Screen: Outside diam, Slot No. No Casing or Screen: 15.23, Open hole, Depth 6.40-35.96

Test of Well Yield: Pumping test method submersible, Draw Down, Recovery. Table with columns: Time min, Water Level Metres, Time min, Water Level Metres. Rows 1-60 showing static level 13.94 and pumping rates 14.64-14.91.

Plugging and Sealing Record: [X] Annular space [] Abandonment. Depth set at 6.40 to 0, Material Grouted - Bentonite Slurry, Volume Placed .132m3



Method of Construction: [X] Rotary (air), [] Diamond, [] Digging. Water Use: [X] Domestic, [] Industrial, [] Public Supply. Final Status of Well: [X] Water Supply, [] Recharge well, [] Abandoned, (Other)

Audit No. Z 26062, Date Well Completed 2005 7 12, Date Delivered 2005 7 13

Well Contractor/Technician Information: Name of Well Contractor Capital Water Supply Ltd., Well Contractor's Licence No. 1558, Name of Well Technician Miller, Stephen, Well Technician's Licence No. T0097, Date Submitted 2005 7 14

Ministry Use Only: Data Source, Contractor 1558, Date Received SEP 12 2005, Date of Inspection, Well Record Number



Measurements recorded in: Metric Imperial

A282456

Tag#: A282456

5-24721 Page _____ of _____

Address of Well Location (Street Number/Name) 7598 Flewellyn Rd Township _____ Lot _____ Concession _____

County/District/Municipality _____ City/Town/Village Stittsville Province **Ontario** Postal Code K2S1B6

UTM Coordinates Zone 83 Easting 18424113 Northing 5005304 Municipal Plan and Sublot Number _____ Other _____

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
BRN	top soil		soft	0	1.31
BRN	sand	silt	soft	0.31	1.52
GRY	limestone	shale	layered	1.52	6.7

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	3.35	bentonite	
3.35	6.7	filter sand	

Results of Well Yield Testing

After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify _____	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason: _____	Static Level			
	1		1	
	2		2	
	3		3	
	4		4	
	5		5	
Pump intake set at (m/ft)	2		2	
Pumping rate (l/min / GPM)	3		3	
Duration of pumping _____ hrs + _____ min	4		4	
Final water level end of pumping (m/ft)	5		5	
If flowing give rate (l/min / GPM)	10		10	
	15		15	
	20		20	
	25		25	
	30		30	
	40		40	
Recommended pump depth (m/ft)	50		50	
Recommended pump rate (l/min / GPM)	60		60	
Well production (l/min / GPM)				
Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No				

Method of Construction

Cable Tool Diamond Public Commercial Not used

Rotary (Conventional) Jetting Domestic Municipal Dewatering

Rotary (Reverse) Driving Livestock Test Hole Monitoring

Boring Digging Irrigation Cooling & Air Conditioning

Air percussion 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)		Status of Well
			From	To	
5.20	PVC	.390	0	3.66	<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input checked="" type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input checked="" type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To
6.03	PVC	10	3.66	6.7

Water Details

Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
		0	3.1	11.43
		3.1	6.7	8.89

Well Contractor and Well Technician Information

Business Name of Well Contractor Strata Drilling Group Well Contractor's Licence No. 7121411

Business Address (Street Number/Name) 129 Kingwood Dr. Municipality Stittsville

Province ON Postal Code L4A8C4 Business E-mail Address wrc@stratasoil.com

Bus. Telephone No. (inc. area code) 9105941079 Name of Well Technician (Last Name, First Name) McLoy, James

Well Technician's Licence No. 71101 Signature of Technician and/or Contractor [Signature] Date Submitted 20200631

Map of Well Location

Please provide a map below following instructions on the back.

See Map MW3

Comments: _____

Well owner's information package delivered Yes No

Date Package Delivered 20200630

Date Work Completed 20200630

Ministry Use Only

Audit No. 2324267

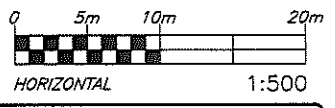
Received 4 11 20



APPROX. PROPERTY BOUNDARY

THE BACKGROUND IMAGE CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENSE - CITY OF OTTAWA.

LEGEND



exp [Redacted] www.exp.com
 [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted]
 [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted]

DATE JAN 2020	CLIENT: [Redacted] 582448 ONTARIO LTD	project no. [Redacted]
DESIGN [Redacted]	TITLE: 7598 FLEWELLYN RD. - SITE PLAN	scale 1:500
CHECKED [Redacted]		FIG 2
DRAWN BY [Redacted]		

C-7241
Z-324267

FEB 19 2020



A296273

Measurements recorded in: Metric Imperial

5-25224 Page of

Address of Well Location (Street Number/Name) **7609 Flewellyn Road** Township _____ Lot _____ Concession _____

County/District/Municipality _____ City/Town/Village **Ottawa (Stittsville)** Province **Ontario** Postal Code _____

UTM Coordinates Zone **18** Easting **924007** Northing **5342** Municipal Plan and Sublot Number _____ Other _____

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
BRN	Topsoil		Soft	0	1
BRN	Coarse Sand	Gravel silt	Soft loose	1	6
GRY	Limestone		hard	6	20

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
+3	1	monument casing	
1	9	grouted	
9	20	filter sand	

Method of Construction

Cable Tool Diamond Public Commercial Not used

Rotary (Conventional) Jetting Domestic Municipal Dewatering

Rotary (Reverse) Driving Livestock Test Hole Monitoring

Boring Pigging Irrigation Cooling & Air Conditioning

Air percussion Industrial Other, specify _____

Other, specify **direct push**

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		Status of Well
			From	To	
2.057	PVC	.54	+3	10	<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input checked="" type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input checked="" type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To
2.375	PVC	10	10	20

Water Details

Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	Hole Diameter	
		Depth (m/ft) From	Depth (m/ft) To
		0	7
		7	20

Well Contractor and Well Technician Information

Business Name of Well Contractor: **Stella Drilling Group** Well Contractor's Licence No.: **7121411**

Business Address (Street Number/Name): **129 R. Inwood Dr** Municipality: **Stittsville**

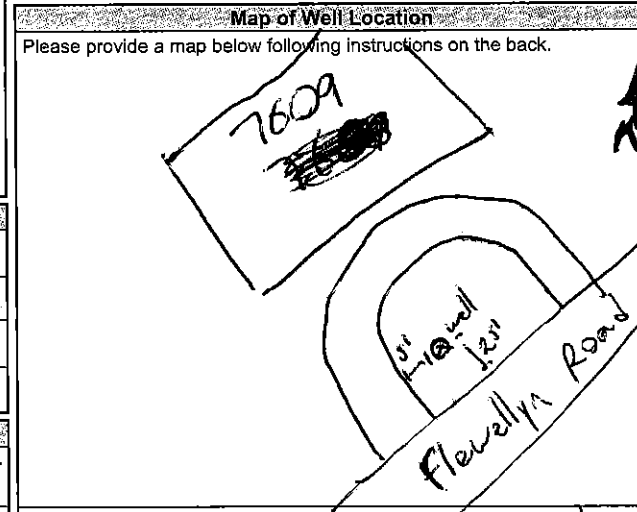
Province: **ON** Postal Code: **K4A1B9** Business E-mail Address: **w.records@stella.ca**

Bus. Telephone No. (inc. area code): **905 940 7919** Name of Well Technician (Last Name, First Name): **McEoy James**

Well Technician's Licence No.: **7107** Signature of Technician and/or Contractor: _____ Date Submitted: _____

Results of Well Yield Testing

After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify _____	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
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? <input type="checkbox"/> Yes <input type="checkbox"/> No	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		



Comments: **EXP General Contractors On Site**

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered: 2020 05 25	Date Work Completed: _____
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Ministry Use Only

Audit No.: **2333418**

Received: _____



Well Tag#: A296272 (Below)
A296272

Measurements recorded in: Metric Imperial

Address of Well Location (Street Number/Name): 2617 Flewellyn Road
 Township: Ottawa (Stittsville)
 County/District/Municipality: Ottawa (Stittsville) Province: Ontario
 UTM Coordinates: Zone 18, Easting 423996, Northing 5005334
 Municipal Plan and Sublot Number: Other

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BK	Topsoil		Soft loose	0	1
BRN	Coarse Sand	Gravel S.H	Soft loose	1	6
GRY	Clay	S.H Gravel	hard dense	6	7
GRY	Limestone		hard	7	20

Annular Space			
Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
+3	1	monument casing	
1	9	Hole plug	
9	20	Filter Sand	

Method of Construction		Well Use	
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input type="checkbox"/> Domestic	<input type="checkbox"/> Municipal
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Driving	<input type="checkbox"/> Livestock	<input checked="" type="checkbox"/> Test Hole
<input type="checkbox"/> Boring	<input type="checkbox"/> Digging	<input type="checkbox"/> Irrigation	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> Air percussion		<input type="checkbox"/> Industrial	<input type="checkbox"/> Cooling & Air Conditioning
<input checked="" type="checkbox"/> Other, specify direct push		<input type="checkbox"/> Other, specify	

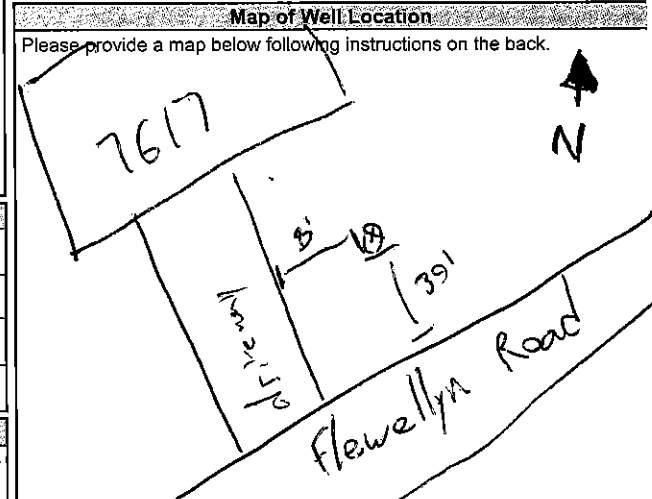
Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		
			From	To	
2.067	PVC	.154	+3	10	<input checked="" type="checkbox"/> Test Hole

Construction Record - Screen					
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		
			From	To	
2.375	PVC	10	10	20	<input checked="" type="checkbox"/> Observation and/or Monitoring Hole

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Depth (m/ft) From	Diameter (cm/in) To
		0	4.5
		20	3

Well Contractor and Well Technician Information			
Business Name of Well Contractor: Strata Drilling Group		Well Contractor's Licence No.: 72411	
Business Address (Street Number/Name): 129 Ringwood Dr		Municipality: Stittsville	
Province: ON	Postal Code: L4A8C1	Business E-mail Address: wrecords@strata soil.com	
Bus. Telephone No. (inc. area code): 905 940 7919		Name of Well Technician (Last Name, First Name): McCoy James	
Well Technician's Licence No.: 7107		Date Submitted: YYY Y M M D D	

Results of Well Yield Testing				
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
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? <input type="checkbox"/> Yes <input type="checkbox"/> No	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		



Comments: EXP General Contractors On Site

Well owner's information package delivered: <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered: YYY Y M M D D 2020 05 25	Ministry Use Only Audit No.: 7338146 AUG 17 2020
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Measurements recorded in: Metric Imperial

A296136

S-25532 Page _____ of _____

Well Owner's Information

First Name _____ Last Name / Organization **8784884 Canada Inc.** E-mail Address _____ Well Constructed by Well Owner

Mailing Address (Street Number/Name) **7628 Flewellyn Road** Municipality **Stittsville** Province **ON** Postal Code **K2S1B6** Telephone No. (inc. area code) _____

Well Location

Address of Well Location (Street Number/Name) **7623 Flewellyn Road** Township _____ Lot _____ Concession _____

County/District/Municipality _____ City/Town/Village **Ottawa** Province **Ontario** Postal Code _____

UTM Coordinates Zone **18Q** Easting **423987** Northing **5065314** Municipal Plan and Sublot Number _____ Other _____

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 To
BRN	top soil		soft	0 .3)
BRN	clay	silt	soft	.31 2.13
GRY	limestone		layered	2.13 6.1

Annular Space

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
From To		
0 .3)	concrete/mortar	
.31 2.79	butonite	
2.79 6.1	filter sand	

Results of Well Yield Testing

After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify _____	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason: _____	Static Level			
	1		1	
	2		2	
	3		3	
	4		4	
	5		5	
Pump intake set at (m/ft)				
Pumping rate (l/min / GPM)				
Duration of pumping hrs + min				
Final water level end of pumping (m/ft)	10		10	
If flowing give rate (l/min / GPM)	15		15	
Recommended pump depth (m/ft)	20		20	
Recommended pump rate (l/min / GPM)	25		25	
Well production (l/min / GPM)	30		30	
Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No	40		40	
	50		50	
	60		60	

Method of Construction

Well Use

Cable Tool Diamond Public Commercial Not used

Rotary (Conventional) Jetting Domestic Municipal Dewatering

Rotary (Reverse) Driving Livestock Test Hole Monitoring

Boring Digging Irrigation Cooling & Air Conditioning

Air percussion Industrial Other, specify _____

Construction Record - Casing

Status of Well

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		Status of Well
			From	To	
5.20	PVC	.340	0	3.1	<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input checked="" type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To
6.03	PVC	10	3.1	6.1

Water Details

Hole Diameter

Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	Depth (m/ft)	Diameter (cm/in)
From	To	From	To
0		3.1	11.93
3.1		6.1	8.89

Well Contractor and Well Technician Information

Business Name of Well Contractor **Strata Drilling Coop** Well Contractor's Licence No. **72941**

Business Address (Street Number/Name) **129 Ruswood Dr.** Municipality **Stittsville**

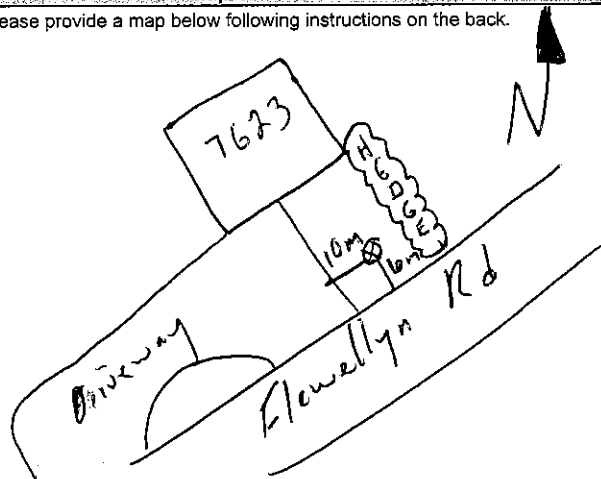
Province **ON** Postal Code **L4A6C1** Business E-mail Address _____

Bus. Telephone No. (inc. area code) **9059407919** Name of Well Technician (Last Name, First Name) **M. JAMES**

Well Technician's Licence No. **7107** Signature of Technician and/or Contractor Date Submitted **20200904**

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well owner's information package delivered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D D 20200804	Ministry Use Only Audit No. 338288 OCT 06 2020 Received
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DATUM Geodetic

REMARKS

BORINGS BY Track-Mount Power Auger

DATE May 21, 2021

FILE NO. **PG5783**

HOLE NO. **BH 1-21**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Monitoring Well Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %					
								20	40	60	80		
GROUND SURFACE													
FILL: Brown silty sand with gravel and rock fragments	0.15	SS	1	100	50+	0	129.19						
		RC	1	100	31	1	128.19						
		RC	2	100	65	2	127.19						
		RC	3	100	100	3	126.19						
BEDROCK: Poor to excellent quality, grey limestone interbedded with grey dolostone and shale		RC	4	100	72	4	125.19						
- vertical seams from 6.45 to 6.8m and 7.7 to 8.0m depths		RC	5	100	57	5	124.19						
		RC	6	100	68	6	123.19						
		RC	7	100	88	7	122.19						
						8	121.19						
						9	120.19						
						10	119.19						
End of Borehole	10.06												

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

DATUM Geodetic

REMARKS

BORINGS BY Track-Mount Power Auger

DATE May 21, 2021

FILE NO. **PG5783**

HOLE NO. **BH 2-21**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Monitoring Well Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %					
								20	40	60	80		
GROUND SURFACE						0	129.38						
FILL: Brown silty sand with crushed stone	0.20	SS	1		50+								
		RC	1	100	35	1	128.38						
		RC	2	100	40	2	127.38						
		RC	3	100	88	3	126.38						
BEDROCK: Poor to excellent quality, grey limestone interbedded with grey dolostone and shale		RC	4	100	92	4	125.38						
		RC	5	100	66	5	124.38						
		RC	6	100	25	6	123.38						
		RC	7	100	72	7	122.38						
						8	121.38						
						9	120.38						
						10	119.38						
End of Borehole	10.11												

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

DATUM Geodetic

REMARKS

BORINGS BY Track-Mount Power Auger

DATE May 25, 2021

FILE NO. **PG5783**

HOLE NO. **BH 3-21**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Monitoring Well Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %					
								20	40	60	80		
GROUND SURFACE													
FILL: Brown silty sand with gravel and rock fragments	0.15	SS	1	75	50+	0	128.16						
		RC	1	100	81	1	127.16						
		RC	2	100	80	2	126.16						
		RC	3	100	80	3	125.16						
BEDROCK: Good to excellent quality, grey limestone interbedded with grey dolostone and shale		RC	4	100	63	4	124.16						
		RC	5	100	76	5	123.16						
		RC	6	100	89	6	122.16						
		RC	7	100	97	7	121.16						
						8	120.16						
						9	119.16						
						10	118.16						
End of Borehole	10.06												

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

DATUM Geodetic

REMARKS

BORINGS BY Track-Mount Power Auger

DATE May 25, 2021

FILE NO. **PG5783**

HOLE NO. **BH 4-21**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Monitoring Well Construction	
		TYPE	NUMBER	RECOVERY	N VALUE or RQD			○ Water Content %					
GROUND SURFACE								20	40	60	80		
TOPSOIL	0.10	AU	1			0	126.71						
GLACIAL TILL: Brown silty sand with gravel, cobbles and boulders, trace clay	1.22	SS	2		50+	1	125.71						
End of Borehole Practical refusal to augering at 1.22m depth (BH dry upon completion)													

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

DATUM Geodetic

REMARKS

BORINGS BY Track-Mount Power Auger

DATE May 25, 2021

FILE NO. **PG5783**

HOLE NO. **BH 5-21**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Monitoring Well Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			20	40	60	80	
GROUND SURFACE												
TOPSOIL	0.10	AU	1			0	126.70					
GLACIAL TILL: Brown silty sand, some gravel, cobbles and boulders, trace clay	1.45	SS	2	33	9	1	125.70					
End of Borehole												
Practical refusal to augering at 1.45m depth (BH dry upon completion)												

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

DATUM Geodetic





REMARKS

BORINGS BY Track-Mount Power Auger

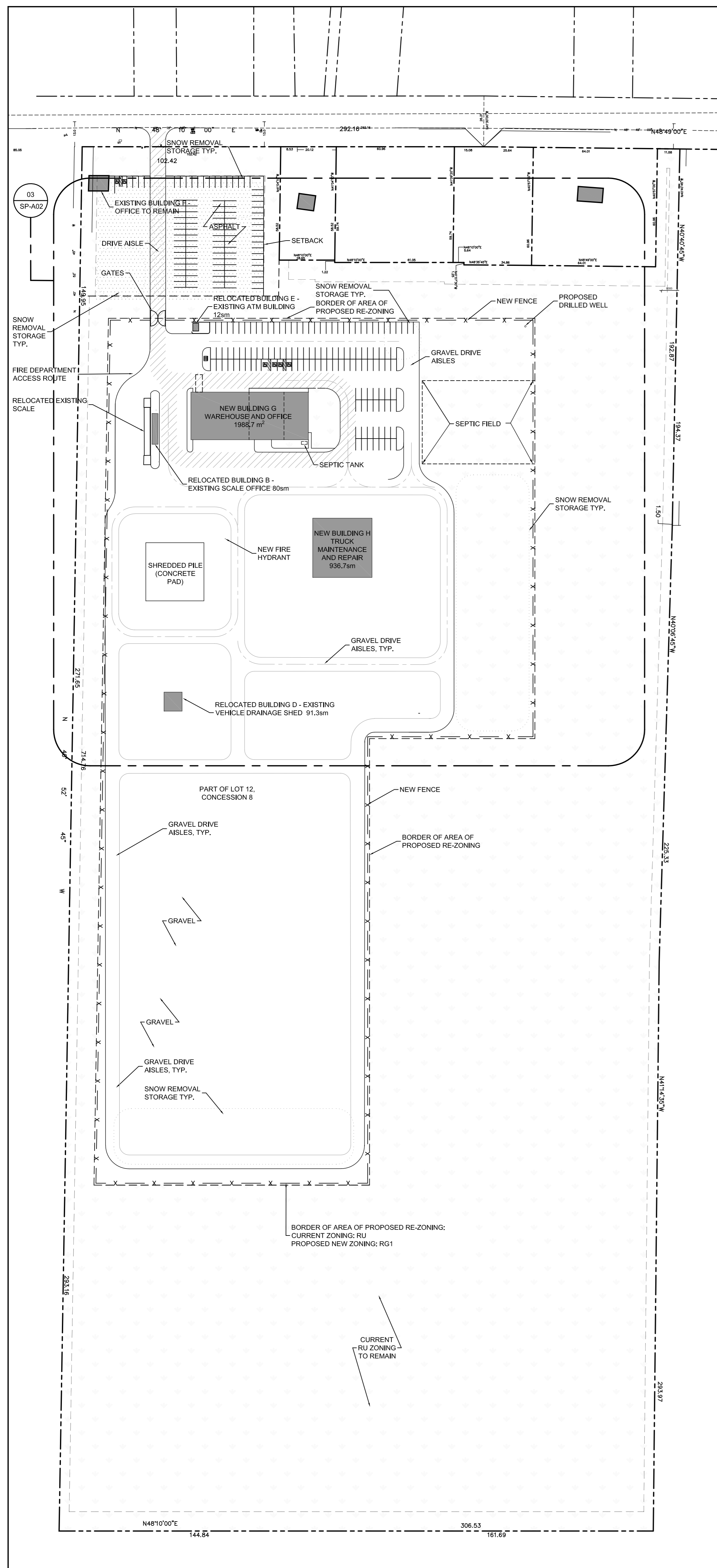
DATE May 25, 2021

FILE NO. **PG5783**

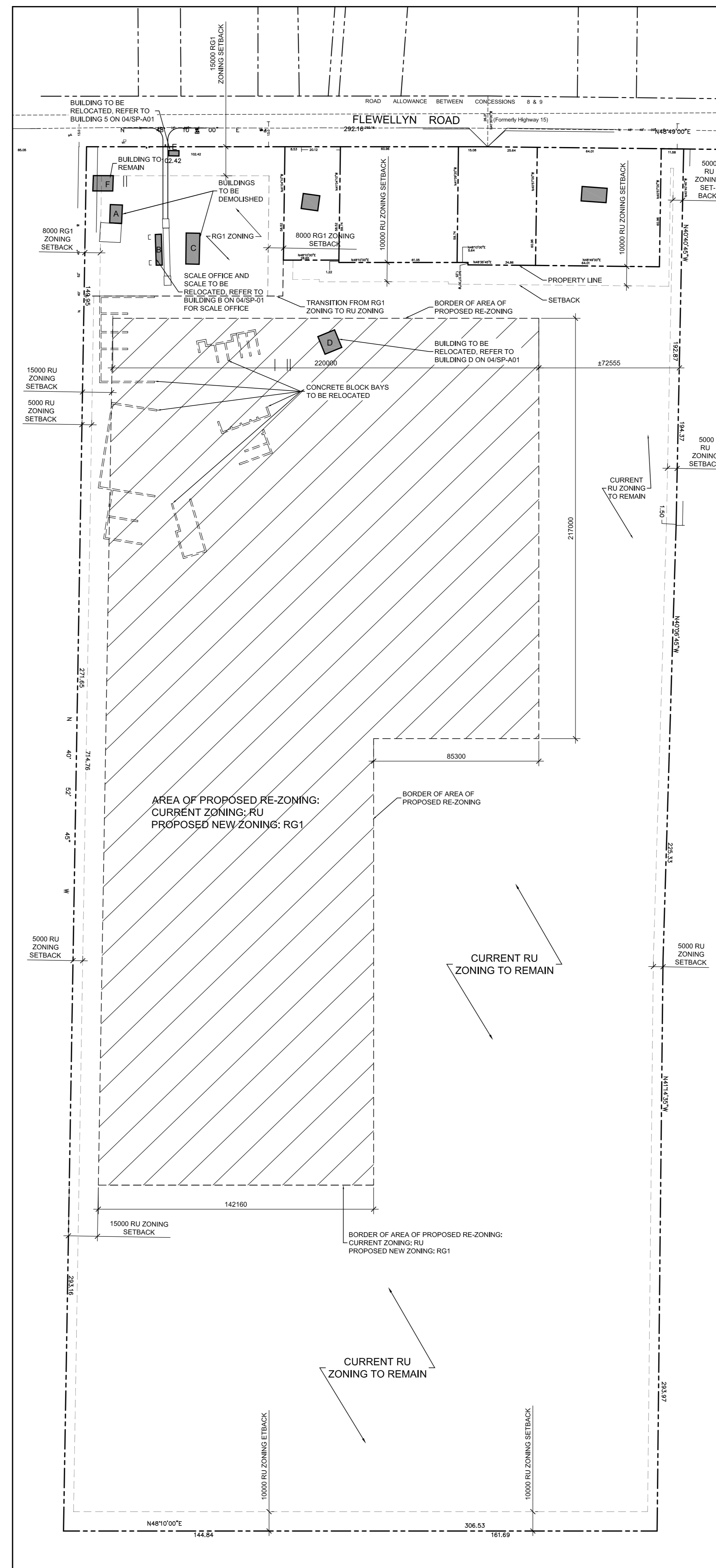
HOLE NO. **BH 6-21**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Monitoring Well Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %					
GROUND SURFACE								20	40	60	80		
FILL: Brown silty sand with gravel, trace organics		AU	1			0	126.78						
TOPSOIL		AU	2										
GLACIAL TILL: Brown silty sand, some gravel, cobbles and boulders, trace clay		SS	2	58	9	1	125.78						
		SS	3	0	36	2	124.78						
End of Borehole													
Practical refusal to augering at 2.23m depth (BH dry upon completion)													

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded



04 FULL SITE PLAN: NEW LAYOUT
SP-A01 SCALE: 1:1250



03 FULL SITE PLAN - EXISTING BUILDINGS, ZONING AND PROPOSED REZONING
SP-A01 SCALE: 1:1500

SITE INFORMATION:

SITE AREA: 20.725 hectares / 51.21 acres
LEGAL DESCRIPTION: PART OF LOT 12, CONCESSION 8
GEOGRAPHIC TOWNSHIP OF GOULBOURN
CITY OF OTTAWA
PIN: 04438-0006

BUILDING INFORMATION

EXISTING BUILDING AREA:		
BUILDING A -	FERROUS METALS	59.0 SM
BUILDING B -	WEIGH SCALE OFFICE	49.9 SM
BUILDING C -	STAFF TRAILERS	111.8 SM
BUILDING D -	VEHICLE DRAINAGE SHED	91.4 SM
BUILDING E -	ATM	14.5 SM
BUILDING F -	OFFICE	81.4 SM
TOTAL		408.0 SM

NOTE: BUILDINGS A & C ARE PROPOSED TO BE DEMOLISHED; BUILDINGS B, D & E ARE PROPOSED TO BE RELOCATED

NEW BUILDING AREA:		
BUILDING G -	WAREHOUSE AND OFFICE (2 STOREYS)	2,008.6 SM
BUILDING H -	TRUCK MAINTENANCE AND REPAIR	937.0 SM
TOTAL AREA PROPOSED		2,945.6 SM

EXISTING TO REMAIN AND TO BE RELOCATED BUILDING AREA:		
BUILDING B -	WEIGH SCALE OFFICE (RELOCATED)	49.9 SM
BUILDING D -	VEHICLE DRAINAGE SHED (RELOCATED)	91.4 SM
BUILDING E -	ATM (RELOCATED)	14.5 SM
BUILDING F -	OFFICE (RELOCATED)	81.4 SM
TOTAL TO REMAIN		237.2 SM

ZONING INFORMATION (CITY OF OTTAWA BYLAW 2008 250)

CURRENT ZONING DESIGNATIONS: RG1(21) - RURAL GENERAL INDUSTRIAL
RU - RURAL COUNTRYSIDE

RG1 ZONING IS TO REMAIN; A PORTION OF THE AREA CURRENTLY ZONED AS RU IS PROPOSED TO BE ZONED AS RG1

ZONING BYLAW 2008-250 (Part 11 Sections 219, 220 and 227)

RG1 PERMITTED USES:

- ANIMAL CARE ESTABLISHMENT
- ANIMAL HOSPITAL
- AUTOMOBILE BODY SHOP
- AUTOMOBILE DEALERSHIP
- AUTOMOBILE SERVICE STATION
- CANNABIS PRODUCTION FACILITY
- DRIVE-THROUGH FACILITY
- DWELLING UNIT
- GAS BAR
- HEAVY EQUIP. & VEHICLE SALES, RENTAL & SERV.
- KENNEL
- LEAF AND YARD WASTE COMPOSTING FACILITY
- LIGHT INDUSTRIAL USES
- PARKING LOT
- PRINTING PLANT
- RETAIL STORE (LIMITED TO AGRI. CONST. & LANDSCAPE EQUIP. & SUPPLIES)
- SERVICE AND REPAIR SHOP
- STORAGE YARD
- TRUCK TRANSPORT TERMINAL
- WAREHOUSE
- WASTE PROCESSING AND TRANSFER FACILITY (NON-PUTRESCIBLE)

RU PERMITTED USES:

- AGRICULTURAL USE
- AGRICULTURE-RELATED USE
- ANIMAL CARE ESTABLISHMENT
- ANIMAL HOSPITAL
- ARTIST STUDIO
- BED AND BREAKFAST
- CANNABIS PRODUCTION FACILITY
- CEMETERY
- DETACHED DWELLING
- EQUESTRIAN ESTABLISHMENT
- ENVIRON. PRESERVE & EDUCATIONAL AREA
- FORESTRY OPERATION
- GROUP HOME
- HOME-BASED BUSINESS
- HOME-BASED DAY CARE
- KENNEL
- ON-FARM DIVERSIFIED USE
- RETIREMENT HOME
- SECONDARY DWELLING UNIT

EXCEPTION 21R:
A DETACHED DWELLING MUST BE ACCESSORY TO A PRINCIPAL USE.

ZONING PROVISIONS (TABLE 219 AND 227):

	RG1	RU
MINIMUM LOT WIDTH:	60 M	50 M (60 M IF AGRICULTURAL)
MINIMUM LOT AREA:	8.0 HA	0.8 HA (2.0 HA IF AGRICULTURAL)
MINIMUM SETBACKS:		
FRONT YARD:	15.0 M	10.0 M
REAR YARD:	15.0 M	10.0 M
INTERIOR SIDE YARD:	8.0 M	5.0 M
CORNER SIDE YARD:	12.0 M	10.0 M
MAXIMUM BUILDING HEIGHT:	15.0 M	12.0 M
MAXIMUM LOT COVERAGE:	50%	20%

PARKING (Part 4, Sections 100-114)

PARKING DESIGNATION: SCHEDULE 1A: AREA D - RURAL

PARKING SPACES (TABLE 101, ROWS N49, N59 AND N95):

MINIMUM PARKING REQUIRED:	
LIGHT INDUSTRIAL:	8 (0.8 PER 100 SM OF GFA)
OFFICE:	24 (2.4 PER 100 SM OF GFA)
WAREHOUSE:	4 (0.4 PER 100 SM OF GFA)
TOTAL:	36

PROPOSED PARKING : 224 (INCLUDING 91 FOR "CFT AUTO" STOCK)

PARKING AREA LANDSCAPING PROVISIONS (SECTION 110):

LANDSCAPE BUFFER REQUIRED: 1.5 M FOR PARKING AREAS NOT ABUTTING A STREET
PROPOSED: MINIMUM 1.5 M

BICYCLE PARKING (SECTION 111): 1 PER 1,000 SM

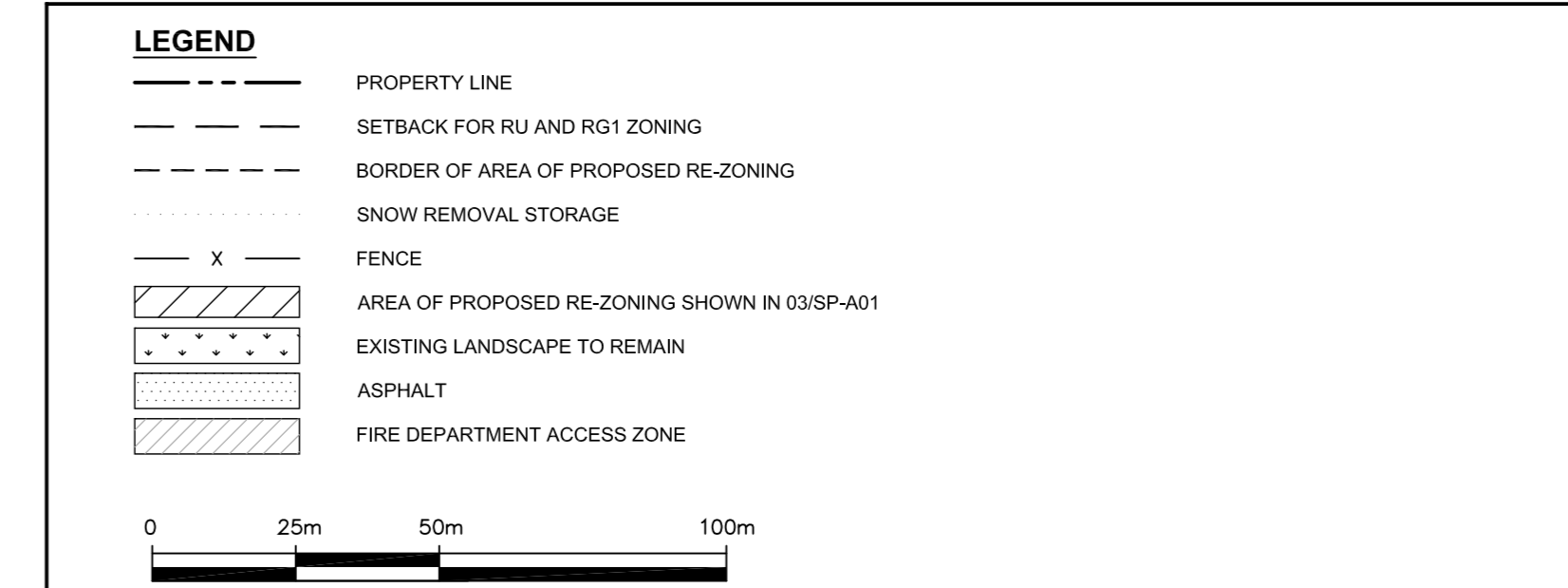
REQUIRED FOR BUILDING G: 3
REQUIRED FOR BUILDING H: 1
PROPOSED FOR BUILDING G: 3
PROPOSED FOR BUILDING H: 1
NOTE THAT BUILDING G AND BUILDING H PROPOSED BICYCLE PARKING WILL BE PROVIDED IN ONE LOCATION CLOSE TO BUILDING G

MINIMUM WIDTH: 0.6 M
MINIMUM LENGTH: 1.8 M

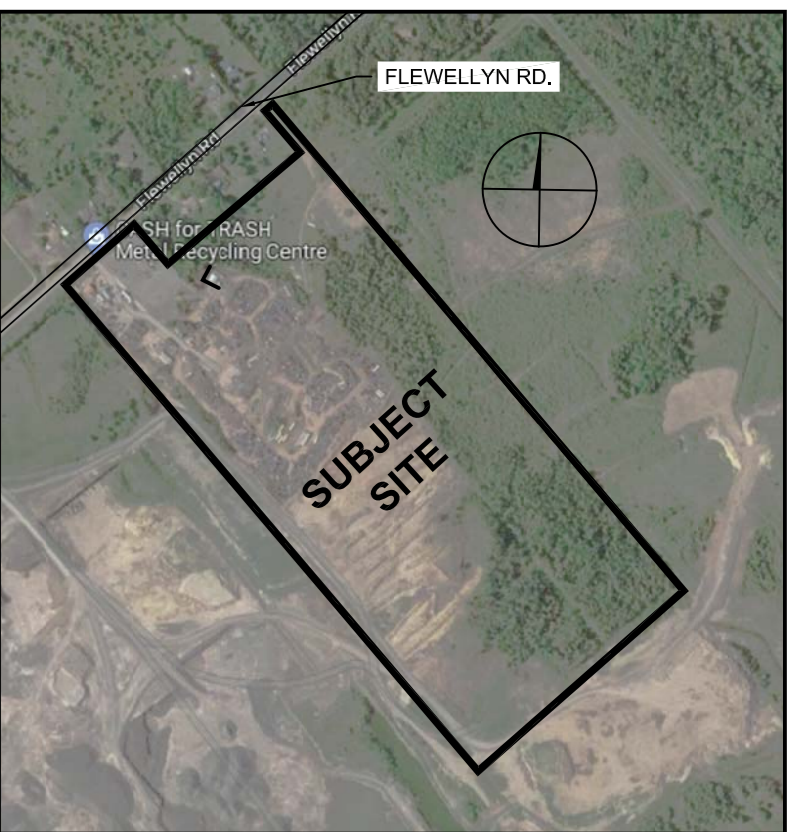
SEE 03/SP-A02 FOR CONTINUATION OF ZONING INFORMATION

02 SITE, BUILDING AND ZONING INFORMATION

SP-A01 SCALE: N/A

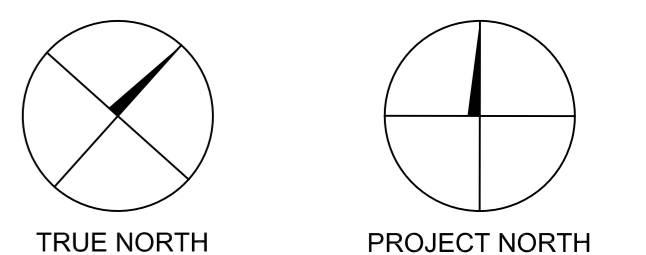


01 LEGEND & SCALE
SP-A01 SCALE: N/A



LOCATION PLAN

North



Revisions

No.	By	Description	Date
01	JT	ISSUED FOR SITE PLAN APPLICATION	31 JAN 2024
02	JT	REVISED AND ISSUED FOR REVIEW	15 AUG 2024

Project

**CFT
SITE PLAN
ZONING AMENDMENT**

7628 FLEWELLYN RD., OTTAWA

Drawing

**ZONING INFORMATION
LOCATION PLAN, EXIST.
AND NEW SITE PLAN**

Scale AS NOTED Stamp

Drawn JAS/KE

Checked

Project No.

21-139

Date

AUGUST 2021

Drawing No.

SP-A01