

# 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



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### 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 m<sup>2</sup> (0.80 ha). The remainder of the site 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:

- Gite 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 previous 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 Gouldbourn 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 visited 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 a 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 Ladd

Carly R. Ladd, B.Sc.

#### **Report Distribution:**

- □ CFT Group (e-mail copy)
- Paterson Group (1 copy)



Nicholas Zulinski, P.Geo., géo.



# **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





28 X 40 - PLOT ISO B1



	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 OFFICE49.9 SMBUILDING C -STAFF TRAILERS111.8 SM
	BUILDING D -VEHICLE DRAINAGE SHED91.4 SMBUILDING E -ATM14.5 SM
	BUILDING F -OFFICE81.4 SMTOTAL408.0 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 REPAIR937.0 SMTOTAL AREA PROPOSED2,945.6 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 SMBUILDING E -ATM (RELOCATED)14.5 SM
	BUILDING F-OFFICE81.4 SMTOTAL TO REMAIN237.2 SM
	ZONING INFORMATION (CITY OF OTTAWA BYLAW 2008 250)
	CURRENT ZONING DESIGNATIONS: RG1[21r] - 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 HOSPITALAGRICULTURAL USEANIMAL HOSPITALAGRICULTURAL USE
	AUTOMOBILE BODY SHOPAUTOMOBILE BODY SHOPAUTOMOBILE DEALERSHIPAUTOMOBILE DEALERSHIPANIMAL 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. KENNEL EQUESTRIAN ESTABLISHMENT 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 AGRIC., CONST. & LANDSCAPE EQUIP. & SUPPLIES)       KENNEL
	SERVICE AND REPAIR SHOP ON-FARM DIVERSIFIED USE STORAGE YARD RETIREMENT HOME TRUCK TRANSPORT TERMINAL SECONDARY DWELLING LINIT
	WAREHOUSE WASTE PROCESSING AND TRANSFER FACILITY (NON-PUTRESCIBLE)
	EXCEPTION 21R: A DETACHED DWELLING MUST BE ACCESSORY TO A PRINCIPAL LISE
	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
$\widehat{02}$	SITE, BUILDING AND ZONING INFORMATION
SP-A	of scale: N/A
	LEGEND
	PROPERTY LINE       SETBACK FOR RU AND RG1 ZONING
	BORDER OF AREA OF PROPOSED RE-ZONING         SNOW REMOVAL STORAGE
	X     FENCE       Image: Area of proposed re-zoning shown in 03/sp-a01
	EXISTING LANDSCAPE TO REMAIN
	FIRE DEPARTMENT ACCESS ZONE
	0 25m 50m 100m

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LOCATION PLAN

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Project
CFT
SITE PLAN
ZONING A
7628 FLEWEL
Drawing
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Project No. 21-139

e AUGUST 2021





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R SITE PLAN APPLICATION	31 JAN 2024
ND ISSUED FOR REVIEW	15 AUG 2024





28 X 40 - PLOT ISO B1

		E0.96 N40°57'00"W	$\label{eq:constraint} \square = \square $	N40'45"W	SEE C LOAD BARR C	D3/SP-A02 FOR CONTINUATION OF ZONING INFORMATION ING 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 LANE WIDTH: 2 DIR.): 9 M MINIMUM LOADING SPACE WIDTH: 3.5 M MINIMUM LOADING SPACE LENGTH: 9 M CIER-FREE PARKING (BYLAW 2017-301 (PART C, SECTION 111)) AN CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS, ITEM 3.1.2 BASED ON 133 PARKING SPACES (EXCLUDES 91 FOR "CFT AUTO REQUIRED ACCESSIBLE SPACES: 6 (3 TYPE A AND 3 TYPE B)	ND 2. TABLE 3: D" STOCK)	ARCHIT	CCR ECTS + II
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ONE SET	BACK –							LOCATIC	ON PLAN
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$\checkmark$	V	↓ ↓ ↓			Project Descripti Re-zoning of lan Code: Ontario B	on: d and alterations to storage and processing infrastructure on property for a new recycling facilit uilding Code 2012	y.		
	$\checkmark$	   			Ontario Bu O.B.C Refrence	O.B.C Compliance	Compliance		
$\checkmark$	$\checkmark$				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		
$\downarrow$					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	Project CFT PROF	POSE
	$\checkmark$		   		3.2.5.7	Locate Hydrant within 90m of any point on required building faces.	Complies		ING AI
¥	$\checkmark$	™     						7628 Fl	LEWELL
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otion	Date
OR SITE PLAN APPLICATION	31 JAN 2024
ND ISSUED FOR REVIEW	15 AUG 2024





### FIGURE 1 HISTORICAL PHOTOGRAPH – 1976

Π N



### FIGURE 2 HISTORICAL PHOTOGRAPH – 1999



### FIGURE 3 HISTORICAL PHOTOGRAPH - 2002



### FIGURE 4 HISTORICAL PHOTOGRAPH - 2008



### FIGURE 5 HISTORICAL PHOTOGRAPH - 2014



### FIGURE 6 HISTORICAL PHOTOGRAPH - 2017



### FIGURE 7 HISTORICAL PHOTOGRAPH - 2019



### FIGURE 8 HISTORICAL PHOTOGRAPH - 2024

Ontario V Pits and Quarries Onlin Ministry of Natural Resources	ne	4114
← Aggregate Site Authorized (1)		- Countra
☆ ALPS ID: 4114 >   •••		LORA
Client Name: THOMAS CAVANAGH CONSTRUCTION LIMITED		
Approval Type:Operation Type:CLASS A LICENCE > 20000 TONNESBoth (Pit and Quarry)		a stand and
Max. Annual Tonnage:Authorized Area (ha):100000088.7		
Location Name: Goulbourn Quarry		
Displaying 1 - 1 (Total: 1)		
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Measurements record	ordine in more	X	A378991		Aspelation	M3 Centerto IN	Inter Resources Act	
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7628 Bew	allyn Road		Stittsville	ON	K23	186	-	
Address of Ited Locate	n (Street Number New	-	Lords		Let	Correso	-	
TO28 Flews	Nyn Road		City/Trant/Vilage		12	Promo	Press Com	
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Grey	Lie	nestore	Other Materials	Car	eral Description		the set	
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Orey	Lie	mestorie N/U	style auto	* Mux			100 110	-
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# **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.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> City of Ottawa, Environmental Noise Control Guidelines, Introduction and Glossary, Page 7, January 2016

**ENGINEERS & SCIENTISTS** 

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.<sup>2</sup>

*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 repot.

*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.



<sup>&</sup>lt;sup>2</sup> Ministry of Environment, Environmental Noise Guidelines (NPC-300), Definitions August 2013

#### GRADIENTWIND ENGINEERS & SCIENTISTS

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,





Joshua Foster, P.Eng. Lead Engineer

Gradient Wind File 21-119 – Response Letter



### GRADIENTWIND ENGINEERS & SCIENTISTS

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

127 WALGREEN ROAD, OTTAWA, ON, CANADA KOA 1LO | 613 836 0934 GRADIENTWIND.COM

#### **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.

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#### **1. INTRODUCTION**

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Fotenn Planning + Design on behalf of Crash 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 Guidelines<sup>1</sup> (ENCG), Ministry of the Environment, Conservation and Parks (MECP) NPC-300<sup>2</sup> 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



<sup>&</sup>lt;sup>1</sup> City of Ottawa Environmental Noise Control Guidelines, January 2016

<sup>&</sup>lt;sup>2</sup> Ministry of the Environment, Conservation and Parks (MECP), Environmental Noise Guideline – Publication NPC-300, August 2013
ENGINEERS & SCIENTIS

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."

#### Assumptions 2.1

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.
- In a 1-hour period during daytime hours (08:00 19:00), fifteen (15) light-, five (5) medium-, and (iv) 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"<sup>3</sup>.

#### 4.2 Criteria for Stationary Noise

The equivalent sound energy level, L<sub>eq</sub>, 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,

<sup>&</sup>lt;sup>3</sup> 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"<sup>4</sup>. 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.

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

#### TABLE 1: EXCLUSIONARY LIMITS FOR CLASS 2 AREA

#### 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.

## Source Description Height Above Grade (m) Image: Constraint of the second s

TABLE 2: EQUIPMENT SOUND POWER LEVELS (dBA)

<sup>4</sup> NPC – 300, page 14

ENGINEERS & SCIENTISTS

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.

5

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 C0	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.

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

#### TABLE 5: NOISE LEVELS FROM STATIONARY SOURCES

### 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









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

80 – 85 dB
75 – 80 dB
70 – 75 dB
65 – 70 dB
60 – 65 dB
55 – 60 dB
50 – 55 dB
45 – 50 dB
40 – 45 dB
35 – 40 dB
0 – 35 dB

August 21, 2024

PH4401-LET.01-REV.01

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

Attention: Charbel Bouroufail

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

## 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 m<sup>2</sup> and is located in Ward 21. The remainder of the subject site is identified as RU which refers to Rural Countryside Zone.

Toronto



## PATERSON GROUP

#### **Consulting Engineers**

9 Auriga Drive Ottawa, Ontario **K2E7T9** 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

North Bay



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.



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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.



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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.

Table 1: SUMMARY OF WATER SUPPLY AQUIFER CHARACTERISTICS OF TW1					
AQUIFER PARAMETER	RESULT OF ANALYSIS				
Transmissivity (m²/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 m<sup>2</sup>/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.



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TABLE 2a: GROUNDWATER MICROBIOLOGY & GENERAL GEOCHEMISTRY								
		OD	ws		<b>V</b> 4			
DADAMETED								
PARAIMETER	UNITS		TYPE	GW1 (4 hr)	GW2 (8 hr)			
				6/1/2022	6/1/2022			
MCROBIOLOGICAL								
Escherichia Coli (E.Coli)	ct/100mL	0	MAC	0	0			
Total Coliforms	ct/100mL	0	MAC	0	0			
GENERAL CHEMICAL - HE	ALTH RELA	TED						
Fluoride (F)	mg/L	1.5	MAC	0.68	0.72			
Ammonia (N-NH <sub>3</sub> )	mg/L	-	-	0.21	0.21			
Nitrite (N-NO <sub>2</sub> )	mg/L	1	MAC	<0.10	<0.10			
Nitrate (N-NO <sub>3</sub> )	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 - AE	STHETIC RE	LATED						
Alkalinity (as CaCO3)	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 CaCO3)	mg/L	100	OG	254	261			
Ion Balance	unitless	-	-	0.99	0.99			
pН	unitless	6.5-8.5	AO	8.06	8.1			
Phenols	mg/L	-	-	<0.001	<0.001			
Sulphate (SO <sub>4</sub> )	mg/L	500	AO	53	55			
Sulphide (S <sub>2</sub> )	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			

1. ODWS identifies the following types of parameters

MAC = Maximum Allowable Concentration

AO = Aesthetic Objective

OG = Operational Guideline

2. Shaded Concentration Indicates an Exceedance of the ODWS Objective



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TABLE 2b: GROUNDWATER GEOCHEMISTRY - METALS							
		OD	WS	- TW1			
PARAMETER	UNITS						
		LIMIT	TYPE	GW1 (4 hr)	GW2 (8 hr)		
				2022-06-01	2022-06-01		
Metals							
Aluminum (AI)	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 (TI)	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		

1. ODWS identifies the following types of parameters

MAC = Maximum Acceptable Concentration

IMAC = Interim Maximum Acceptable Concentration

AO = Aesthetic Objective

OG = Operational Guideline

2. Shaded Concentration Indicates an Exceedance of the ODWS Objective



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TABLE 2c: GROUNDWATER GEOCHEMISTRY - VOLATILES						
		OD	WS			
				- TW1		
PARAMETER	UNITS	LIMIT	TYPE	GW1 (4 br)	GW2 (8 hr)	
				6/1/2022	6/1/2022	
VOCo Surrogatoo				0/1/2022	0/1/2022	
1.2 dichloroothano d4	0/_			116	110	
1,2-dictiloroetilarie-d4	/0	-	-	104	101	
	70	-	-	104	07	
Toluene-d8	%	-	-	98	97	
Volatiles				-0.5	-0 F	
1,1,1,2-tetrachioroethane	μg/L	-	-	C.U>	C.U>	
1, 1, 1-trichloroethane	μg/L	-	-	< 0.4	< 0.4	
1,1,2,2-tetrachioroethane	μg/L	-	-	C.U>	<0.0>	
	µg/L	-	-	<0.4	<0.4	
1,1-dichloroethane	µg/L	-	-	<0.4	<0.4	
	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	

1. ODWS identifies the following types of parameters

- MAC = Maximum Acceptable Concentration
- IMAC = Interim Maximum Acceptable Concentration

AO = Aesthetic Objective

OG = Operational Guideline

2. Shaded Concentration Indicates an Exceedance of the ODWS Objective



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TABLE 2d: GROUNDWATER GEOCHEMISTRY - HYDROCARBONS						
		OD	ws	TW1		
PARAMETER	UNITS					
		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 Hydryocarbo	ns (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	

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
- 2. 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 CaCO<sub>3</sub>)
- 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 CaCO<sub>3</sub>

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 CaCO<sub>3</sub>/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 CaCO<sub>3</sub>/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/m<sup>2</sup>/d. As such, for a daily sewage flow of 10,000 L, the leaching bed area required would be up to 2,500 m<sup>2</sup>. 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.

Site area	20.22 ha
Impervious area (%)	57 %
Daily sewage flow	10 m³/d
(Value based on 1m <sup>3</sup> per day flow volume per residential lot)	
Concentration of nitrate in effluent (Value based on typical effluent concentration)	40 mg/L
Surplus Water (The surplus water value was estimated based on Environment Canada values with a soil type comprised of silt loam (Urban Lawns/Shal anthropogenic sources.)	341 mm/yr Climate Office low Rooted Crops) and

0.40

Combined infiltration factor based on:



•	Topography infiltration factor	0.20
---	--------------------------------	------

- Soil texture infiltration factor 0.10 0.10
- Cover infiltration factor

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 m<sup>3</sup> 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.

#### 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

#### Ottawa Head Office 9 Auriga Drive Ottawa – Ontario – K2E 7T9 Tel: (613) 226-7381

Ottawa Laboratory 28 Concourse Gate Ottawa – Ontario – K2E 7T7 Tel: (613) 226-7381

#### List of Services

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



Aug. 21. 2024 M. S. KILLAM 100221103 BOLMICE OF ONTATIO

Michael Killam, P.Eng.



## **FIGURE 1**

**KEY PLAN** 



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### **Certificate of Analysis**

### **Environment Testing**

Client:	Paterson Group 9 Auriga Dr Nepean, ON K2E 7T9 Mr. Alex Schopf		Report Number: Date Submitted: Date Reported: Project: COC #:	1997742 2023-06-02 2023-06-14 PH4401 908261
PO#: Invoice to:	57632 Paterson Group	Page 1 of 15		

#### Dear Alex Schopf:

🛟 eurofins

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 RZafari2023.06.1 414:16:42 -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: <u>https://directory.cala.ca/</u>.

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.



#### **Certificate of Analysis**

**Environment Testing** 

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

Poport Number	1007740
Report Number.	1997742
Date Submitted:	2023-06-02
Date Reported:	2023-06-14
Project:	PH4401
COC #:	908261

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Group	Analyte	MRL	Units	Guideline		
Anions	CI	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
	рН	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
	В	0.01	mg/L	IMAC 5.0	0.46	0.44

#### Guideline = ODWSOG

#### \* = Guideline Exceedence

Results relate only to the parameters tested on the samples submitted. Methods references and/or additional QA/QC information available on request.

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### **Certificate of Analysis**

**Environment Testing** 

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

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Group	Analyte	MRL	Units	Guideline		
Metals	Ва	0.01	mg/L	MAC 1.0	0.05	0.06
	Be	0.0005	mg/L		<0.0005	<0.0005
	Са	1	mg/L		54	55
	Cd	0.0001	mg/L	MAC 0.005	<0.0001	<0.0001
	Со	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
	Мо	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
	TI	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

#### Guideline = ODWSOG

#### \* = Guideline Exceedence

Results relate only to the parameters tested on the samples submitted. Methods references and/or additional QA/QC information available on request.



#### **Certificate of Analysis**

**Environment Testing** 

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

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Group	Analyte	MRL	Units	Guideline		
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
I						

#### Guideline = ODWSOG

#### \* = Guideline Exceedence

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**Environment Testing** 

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

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Group	Analyte	MRL	Units	Guideline		
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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#### \* = Guideline Exceedence

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## **Certificate of Analysis**

**Environment Testing** 

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

				Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1689830 GW 2023-06-01 GW1	1689831 GW 2023-06-01 GW2
Group	Analyte	MRL	Units	Guideline		
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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## **Environment Testing**

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

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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 No442075Analysis/Extraction Date20MethodP 8270	23-06-07 Ana	lyst CM	
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

#### Guideline = ODWSOG

\* = Guideline Exceedence

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## **Environment Testing**

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

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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
Phenanthrene	<0.1 ug/L	52	50-140
Pyrene	<0.1 ug/L	58	50-140
Run No         442783         Analysis/Extraction Date         20           Method         AMBCOLM1	)23-06-03 Ana	lyst DRA	
Escherichia Coli			
Total Coliforms			
Run No     442785     Analysis/Extraction Date     20       Method     C SM2130B	)23-06-02 Ana	lyst ME	
Turbidity	<0.1 NTU	100	70-130
Run No     442824     Analysis/Extraction Date     20       Method     C SM2120C	)23-06-05 <b>Ana</b>	lyst AaN	
Colour (Apparent)	<2 TCU	105	90-110
Run No442864Analysis/Extraction Date20MethodEPA 8260	023-06-04 Ana	lyst PJ	
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

#### Guideline = ODWSOG

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**Environment Testing** 

Paterson Group
9 Auriga Dr
Nepean, ON
K2E 7T9
Mr. Alex Schopf
57632
Paterson Group

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

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

### QC Summary

#### Guideline = ODWSOG

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**Environment Testing** 

Paterson Group
9 Auriga Dr
Nepean, ON
K2E 7T9
Mr. Alex Schopf
57632
Paterson Group

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

		-	-
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

### QC Summary

#### Guideline = ODWSOG

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## **Environment Testing**

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

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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
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 No442872Analysis/Extraction Date20MethodEPA 8260	)23-06-05 Ana	llyst PJ	
Xylene Mixture			
Run No       442894       Analysis/Extraction Date       20         Method       CCME O.Reg 153/04	)23-06-05 <b>Ana</b>	ilyst PJ	
Petroleum Hydrocarbons F1-BTEX			
Run No442898Analysis/Extraction Date20MethodSM2320,2510,4500H/F	)23-06-05 <b>Ana</b>	l <b>yst</b> AsA	
Alkalinity (CaCO3)	<5 mg/L	97	90-110
Conductivity	<5 uS/cm	99	90-110
F	<0.10 mg/L	99	90-110
рН		99	90-110
Run No442900Analysis/Extraction Date20MethodSM 5310B	023-06-05 Ana	ilyst AsA	
DOC	<0.5 mg/L	104	80-120

#### Guideline = ODWSOG

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## **Environment Testing**

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

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

### QC Summary

Ar	nalyte	Blank	QC % Rec	QC Limits
Run No 442945	Analysis/Extraction Date 20	23-06-06 <b>An</b> a	ilyst IP	
Method SM5530D/EP	A420.2			
Phenols		<0.001 mg/L	103	50-120
Run No 442969	Analysis/Extraction Date 20	23-06-06 <b>An</b> a	ilyst SKH	
Method EPA 351.2				
Total Kjeldahl Nitr	ogen	<0.100 mg/L	110	70-130
Run No 442981	Analysis/Extraction Date 20	23-06-06 Ana	ilyst 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 Method EPA 350.1	Analysis/Extraction Date 20	23-06-07 Ana	llyst RT	
N-NH3		<0.020 mg/L	110	80-120
Run No 442988	Analysis/Extraction Date 20	23-06-06 <b>Ana</b>	ilyst SD	
Method EPA 200.8				
Silver		<0.0001 mg/L	85	80-120
Aluminum		<0.01 mg/L	94	80-120

#### Guideline = ODWSOG

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## **Environment Testing**

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

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

		-	
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 ma/L	93	80-120

### QC Summary

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## **Environment Testing**

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

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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
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         20           Method         CCME O.Reg 153/04	)23-06-07 Ana	ilyst SS	
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         20           Method         M SM3120B-3500C	)23-06-07 <b>Ana</b>	llyst ZS	
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         20           Method         C SM4500-S2-D	)23-06-07 Ana	ilyst AaN	
S2-	<0.01 mg/L	82	80-120
Run No     443049     Analysis/Extraction Date     20       Method     C SM2340B	023-06-07 <b>Ana</b>	llyst SKH	

#### Guideline = ODWSOG

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## **Environment Testing**

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

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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
Hardness as CaCO3			
Ion Balance			
TDS (COND - CALC)			
Run No         443125         Analysis/Extraction Date         20           Method         P 8270         P </th <th>)23-06-08 <b>Ana</b></th> <th>lyst RG</th> <th></th>	)23-06-08 <b>Ana</b>	lyst RG	
1+2-methylnaphthalene			
Run No         443384         Analysis/Extraction Date         20           Method         SUBCONTRACT-CA-INORG	)23-06-13 <b>Ana</b>	lyst AET	
Tannin & Lignin			

Guideline = ODWSOG

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#### PH4401-LET.01

#### **Pumping Test Analysis Report**



### Pumping Test Analysis Report

File No.	PH4401	Well ID:	TW1
Date:	Thursday, June 1, 2023	Solution Method:	Cooper-Jacob
Client:	Cash for Trash	Transmissitivity (m2/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:				
S	olution Method:	Well ID:	Transmissitivity (m2/day):	
	Theis	TW1	914.3	
	Cooper-Jacob	TW1	914.3	
	Average:		914.30	

patersongroup 7628 Flewellyn Road, Stittsville, ON

PREDICTIVE NITRATE IN	1PAC	T ASSESS	SEMENT
Infiltration Factors			
Topography		0.20	
Soil		0.10	
Cover		0.10	
Total		0.40	
Site Characteristics			
Area of Site :		202234.4	m²
Assumed Impervious Bedrock Outcropping		18204	m²
Cash for Trash buildings, park lot PLUS Outdoor Metal Storage		96606	m²
Bedrock Outcropping plus Cash for Trash site		114810	m²
Impervious Area		114810	m²
Percent Impervious Area =		57	%
Infiltration Area =		87424	m²
Septic Effluent			
Concentration of Effluent (Cs) =		40	mg/L
Daily Sewage Flow (Qs)=		10	m <sup>3</sup>
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	m³/day
Mass Balance Model (MOEE, 1995) $C_T = (Q_bC_b+Q_eC_e+Q_iC_i)/(Q_b+Q_e+Q_i) =$	Cumulative	Nitrate Concentrat	ion
Q <sub>b</sub> = flow entering the system across the upgradient area		0	m <sup>3</sup> /day
C <sub>b</sub> = background nitrate concentration		0	mg/L
$Q_e$ = flow entering the system from the septic drainfield		10	m³/day
$C_e$ = concentration of nitrates in the septic effluent		40	mg/L
$Q_i$ = flow entering the system from infiltration		33	m³/day
C <sub>i</sub> = Concentration of nitrates in the infiltrate		0	mg/L
	<b>C</b> <sub>T</sub> =	9.37	mg/L
Notes: Site characteristic values were measured as approximate volume was calculted by Paterson Group.	values from	the available site p	olan. Daily Sewage Flow

## patersongroup

7826 Flewellyn Road PH4401

TW1	inputs							
pH	8		A		0.17			
IDS	500		В		2.32			
Alkalipity	254				2.00			
Temp	13		D		2.44			
romp.	10		pHs =		7.346631847			
			•					
1			-letters					
Lange	lier Saturation in	idex (LSI) Calci	llation	(La	angelier, 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	3] - 0.4			
			D = Log10 [alkal	inity as Ca	aCO3]			
		Г		151-	0.7			
		L			0.1			
LSI	Effect							
0.5 to 2	Water is super saturated and	ends to precipitate a scale lay	er of calcium carbona	te (scale for	ming but non-corrosive)			
0 to 0.5	Water is super saturated and	ends to precipitate a scale lay	er of calcium carbona	te (slightly s	cale forming and corros	ive).		
0	Water is saturated (in equilibri	um) with calcium carbonate. A	scale layer of calcium	carbonate is	neither precipitated no	or dissolved.		
0 to -0.5	Water is under saturated and	ends to dissolve solid calcium of	carbonate (slightly cor	rosivebut no	on-scale forming).			
-0.5 to -2	Water is under saturated and	ends to dissolve solid calcium of	carbonate (seriously c	orrosive).				
Real Property lies and the second sec								



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Basin 215 Department of I	Mines, Provin	ice of Oi	ntario		GEOLOGICAL	BRANCH
Water V	Vell	Red	cord		DEPANTMENT	
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Country on Territorial District Carlo I and	Township, Vit	lage, Ter	TT OF City	Jou	lourn	
	own	or City).	S lette	Ter!	le Uni	κ
		ing numr	NA 21	2		
(day) (month) (year)			,			
Pipe and Casing Record			Pumping	Test		
Casing diameter (s)	Date		•••••			••••
Length(s) of casing(s).	Static level.	<b>8</b>	• • • • • • • • • • • •	• • • • • •		
Type of screen	Pumping lev	el	• • • • • • • • • • •	• • • • • •		• • • • • • • • •
Distance from top of screen to ground level	Pumping rat	e	••••••	•••••	• • • • • • • • • • • • • • • • • • •	
Is well a gravel-wall type?	Distance from	n cylinde	er or bowls to	groun	d level	•••••
W	ater Record					
The second second	·····		Dep	+h (a)	Kind of	No. of Feet
Quality (hard, soft, contains iron, sulphur, etc.),	zel		to W	ater ion(s)	Water	Water Rises
Appearance (clear, cloudy, coloured).				1	Push	47'
For what purpose(s) is the water to be used?	use			<	Part	
• • • • • • • • • • • • • • • • • • • •						
How far is well from possible source of contamination?	7.5 . ya	• • • • • • • • •				
What is the source of contamination?	de of water	• • • • • • • • • • • • • • • • • • •	•••••		· ·	
Well Log			· · · · ·			
Overburden and Bedrock Record	From	То		Lo	cation of Well	
8 from and 48 of rock	0 ft.	ft.	In di	agram	below show dist	ances of
			well	from i	road and lot lir	ie. In-
	0	0	uica	le nort	n by arrow.	
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Situations. In mall on unland in mallow or on killside)	Rillse	de	·	•	· · · · · · · · · · · · · · · · · · ·	
Drilling Firm, S.P. A parka	1	•••••••••••••			•••••••	
Address Stattanlle ant:	<b>—</b>			• • • • • •		
Name of Driller		Addres	is an	n.e	201	•••••
Date	•••••	Licence	e Number	,	5.7.6	•••••
Form 5			Sign	ature	of Licensee	
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UTM 18 Z 4124114	31 <i>6/4e</i>			GROUND WAT	ER BRANCH Nº 2519	
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Elev. $4 \times 0 \times 13 \times 0$	The W	Vater-well D	rillers Act, 1954	ONTARIO RESOURCES C	WATER OMMISSION	
Pasint 12/51		Department	t of Mines		1999-9	
	Wate	r-We	II Reco	rd		
County or Territorial District	Carleto	- 	nship, Village, Town o	r City Loul	bourne	
			Village, Town or	City)	4	
			ddress	MMM M	<u>_</u>	
(day)	(month)	(year)				
Pipe and Casin	g Record			Pumping Test		
Casing diameter(s)	۲		Static level	12		
Length (s)	NANE		Pumping rate	20 gapt		
Length of screen	····		Duration of test	10 mi	nales	
Well Log	, <u> </u>	<u>í</u>		Water Record		
Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s)	No. of feet	Kind of water (fresh, salty,	
· ·			found		or sulphur)	
shale.	0	5				
limestern GREY	5	57	55	43	sulphur	
······································						
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		_	••••••••			
For what nurnose(s) is the water	to be used?					
tor what purpose(s) is vice water				ocation of Well		
is water clear or cloudy?	ondy		road and lot lin	w show distances of he. Indicate north	f well from by arrow.	
is well on upland, in valley, or on	hillside?					
Drilling firm	••••••	•••••				
Address	•••••••					
					- Rite Muna	
Name of Driller	Marah			T.	144,000 1140.000	
address	<u>II (a vin</u>					
icence Number. <u>H</u> <u>H</u> O				F		
I certify that the f	oregoing		40	· ····		
statements of fact	are true.		- It ighway if	above 1		
Date 1.1.9.17/5.7	sarks		j J J	Stitteville		
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5 R 50051110the Ontario Water R	esources	Commission	Act	mmm 1 ) an	
Elev. 4 R 0141315 WATER WE		RFC	ORD		
Basin V 2 15 list PARCE 76	Tours			Face	Runne
Con. 8 Lot 12	Date co	mpleted	2 T	TULY	66
ŕ	duoa	1	(day	month To	year)
		•			
Lincide diameter of easing			Pumpi	ng Test	
Total length of casing	Sta	tic level	14	~ 7	
		t-pumping r	ate <b>3</b>	າ. ວ	G.P.M.
Length of screen	Pur	nping level		149	••••••
Denth to top of screen	Du	ation of test	pumping	/// K/	T ANI
Diameter of finished hole	vva	ter clear or cl	oudy at end o	i test	7
	Kee	commended ]	pumping rate	$\sim$	G.P.M.
Well Log	wit.			leet bel	bw ground surface
		From	To	Depth(s) at	Kind of water
Overburden and Bedrock Record		ft.	ft.	which water(s) found	(fresh, salty, sulphur)
54968		0	12		
LIME STAL		12	34	72	FRESH
					,
For what purpose(s) is the water to be used?			Location	of Well	<u></u>
HOUSE		In diagram	n below show	distances of we	ll from
Is well on apland, in valley, or on hillside?		road and	lot line. Inc	licate north by	arrow.
Drilling or Boring Firm				1	1
F. C. SJIPAJUS					14
Address 5777SUILLE					
					/
Licence Number				OLD,	15
Name of Driller or Borer C71 S1-12(11)					
Address				<u>_</u>	
Date 9 9 9 61				r 44	
(Signature of Licensed Dryling or Boring Contractor)					
Form 7 15M-60-4138					
OWRC COPY					C85.58
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ev. AR 0450 The Ontario	Water Resou	rces Commis	sion Act, 1927		al dis fi
asin and WATE	R WE	LL R	ECORD	рани — Солона Лариски, Салана Кожана СК сасо техностика со стала Кожана СК сасо техностика со стала	Roberts († 1918) - Stransson († 1918) - Stransson († 1919)
Colo Fo	<b></b>	Tourship V	Allage Town or	City Goul	bourn
bunty or District	E //	Date compl	eted <u>30</u>	Dec ·	1960
	· · · · · · · · · · · · · · · · · · ·	Date comp	Stittsui	lle Cn	year) /
Casing and Screen Record			Pum	ping Test 	
inside diameter of casing		Static leve	el	51	СРМ
Fotal length of casing		Test-pum	ping rate	15"	
Гуре of screen		Duration	of test pumping	źh	J
Length of screen		Water cle	ear or cloudy at e	end of test(	lear
Depth to top of screen $4''$		Recomme	ended pumping	rate	G.P.M.
		with	pumping level of	/ 5	
Well Log			Wa	ter Record	
	From	То	Depth(s) at which	No. of feet	Kind of water (fresh, salty,
Overburden and Bedrock Record	ft.	IL.	found	Water Aber	sulphur)
	0	12'			
/led Jand			219	24	Drach
arang lime Stone	12'	<u> </u>		()	
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For what purpose(s) is the water to be used	2		Loca	tion of Well	, Xu
house		I	n diagram below	show distances	of well from
is well on upland, in valley, or on hillside	<b>)</b>	<b>r</b>	oad and lot inc		<u>, by anow.</u>
trillside					/
Drilling Firm F. F. Sp. ci. T.	Ks		16		
Address	e Ogt				
; Licence Number			1.6		
Name of Driller $(19, 120)$	1 Spark			2.5	
Address GHIHSU	ille Oni	4 6	8	l.	1 51
Address	)	ene - stradbara kalin is		T	//
Date F. A. A. A.	•••••••		4	FIS HWY	
(Signature of Licensed Drilling Contract	or)		L J		
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Elev, ARE OI4 3 3 WATER WEL	L RECO	DRD	ONTARIO W	ATER MISSION
Basin 215 County or District Catleton Lot # 12 D	ownship, Village, To bate completed ess. $\Lambda \mathcal{S}^{\#}$	own or City 14 Stitteve	august Me Costa	1963 year)
		Pumping	g Test	
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       4"         Diameter of finished hole       4"	Static level Test-pumping ra Pumping level Duration of test p Water clear or cle Recommended p	4 oumping oudy at end of oumping rate	fill sup 74 test	e ver night 20 G.P.M. 4 20 min C/EAR 10 G.P.M.
	with pump settir	ng oi	Wate	r Record
Well Log Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
Bepmed well from	Ð	52	-	
Black Limestine	52'	80'		
			70'	Thesh
For what purpose(s) is the water to be used? Heas E Is well on upland, in valley, or on hillside? $4plAND$ Drilling or Boring Firm Lemma & Hueston	In diagra road and	Location am below show d lot line. In $f = f \in \mathcal{A}$ side	of Well w distances of wa adicate north by	ell from arrow.
Address SR#2 Utithville Crt. Licence Number #1017 Name of Driller or Borer Some Address Date Gug 14/1963 Date Jug 14/1963 Uphman & Hueston (Signature of Licensed Drilling or Boring Contractor)	<u><u><u>r</u></u><u>u</u><u>w</u></u>	3/20	0/1 /+~ J = 15"	yds=>
Form 7 10M-62-1152			t C	: .38

State       15 No       2500         Set Scientsziczen       The Weil Delies Act       JAN - ± 1952         Set Scientsziczen       Department of Mines, Provides of Onaction       JAN - ± 1952         Geologia       Calified       The Weil Delies Act         Set Scientsziczen       Department of Mines, Provides of Onaction       Calified       Beach         Date       State Completed       The Weil Delies Act       Calified       Beach         Date       State Completed       State Completed<								
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Main of the well bellers Act       Department of Mines, Province of Ontario       Office (Collocal BRANCH DEPARTMENT OF MINES)         Water Well Record         Water Well Record         Office of the second of the se		ONTA	RIÓ			- 1/	N - 4 1952	
in       215       Department of Mines, Province of Ontario       Department of Mines, Province of Ontario         Department of Mines, Province of Ontario         Water Well Record         Department of Mines, Province of Ontario         Water Well Record         Date Completed         Ontario of the Well (excluding pump), 25,2,700         Provide the Well (excluding pump), 25,2,700         Date.         Provide the Well (excluding pump), 25,2,700         Provide the Well (excluding pump), 25,2,700         Date.         Provide the Well (excluding pump), 25,2,700         Note the Well (excluding pump), 25,2,700         Provide text (or to well), 20,	The	Well D	rillers A	ct		Jr 		
Utilized Torm of the intermediate structure of the in	sin 215 Department of	f Mines,	Provinc	e of Ont	ario	GEOI	OGICAL BRANC	NES
Outlon       Turnin Wilson Town or Dir.       Interface of the second of the se	Water	Wo	11 <b>I</b>	Rec	ort			and the state of the
Date Completed       Image: Construction of the construction of th	water	VV C	11 1		UIU	. 11		
Date Completed	Par Palan	Towns	hin. <del>Villa</del>	<del>ge, Town</del>	or City	20	ulle	nn
Date Completed			own o	r City)	State	the second	pe n	
Date Completed				an	S1820	(y. 5.4. 1)		
Pipe and Casing Record       Pumping Test         Casing diameter (a)	Date Completed	t of Well	(excludif	ig pump).	. X. L. L. A. I. T	4		
Casing diameter (b)	Pipe and Casing Record				Pumping 7	lest		
Length (b) of casing (b). 1.5.       Static level	Casing diameter(s) 4 · · ·	Date			•••••			• • • • • • • •
Type of screen.       Pumping level.       2         Distance from top of screen to ground level.       Distance from cylinder or bowls to ground level.         Is well a gravel-wall type?       Jackth.       Distance from cylinder or bowls to ground level.         Water Record       Water Record       Distance from cylinder or bowls to ground level.         Quality (hard, soft, contains iron, sulphur, etc.)       Jackth.       Jackth.         Appearance (clear, cloudy, coloured)       Aller Marcella       Jackth.         Water is well from possible source of contamination?       Jackth.       Jackth.         What is the source of contamination?       Jackth.       Jackth.       Jackth.         Water St.       Group of any mineral analysis that has been made of water.       Location of Well       In diagram below show distances of well from road and lot line. Indicate north by arrow.         User Marcella       Jackth.       Jackth.       Jackth.       Jackth.         Starte Jackth.       Jackth.       Jackth.       Jackth.       Jackth.       Jackth.         Water is well from possible source of contamination?       Jackth.       Jackth.       Jackth.       Jackth.         Starte Jackth.       Jackth.       Jackth.       Jackth.       Jackth.       Jackth.       Jackth.         Starte Jackth.       Jackt	Length (s) of casing (s)	Stati	c level					
Length of screen       Pumping rate.       2.2.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4	Type of screen	Pum	ping leve	1 <i>1.5</i> .		•••••		•••••
Distance from top of screen to ground level	Length of screen	Pum	ping rate		2. <b>g</b> . p.		,	
Is well a gravel-wall type? Just de la gravel	Distance from top of screen to ground level	Dura	tion of to	est		2. <i>e</i> M	4	
Water Record         Kind (fresh or mineral)       Jassh       Depth(a)       Kind of Water       No. of Set Water Rise         Quality (hard, soft, contains iron, sulphur, etc.)       Jassh       Jassh <td< td=""><td>Is well a gravel-wall type? J. J. Concert</td><td></td><td>ance from</td><td>i cylinder</td><td>or dowis to</td><td>ground</td><td></td><td></td></td<>	Is well a gravel-wall type? J. J. Concert		ance from	i cylinder	or dowis to	ground		
Kind (fresh or mineral).     Jost d.     No. of Free       Quality (hard, soft, contains iron, sulphur, etc.)     Jost d.     No. of Free       Appearance (clear, cloudy, coloured).     Learn     No. of Free       For what purpose(s) is the water to be used?     Jost d.     Jost d.       How far is well from possible source of contamination?     I or Jost d.     Jost d.       What is the source of contamination?     I or Jost d.     Jost d.       What is the source of contamination?     I or Jost d.     Jost d.       What is the source of contamination?     I or Jost d.     Jost d.       What is the source of contamination?     I or Jost d.     Jost d.       What is the source of contamination?     I or Jost d.     Jost d.       What is the source of contamination?     I or Jost d.     Jost d.       What is the source of contamination?     I or Jost d.     Jost d.       In diagram below show distances of well from road and tot line. In digate north by arrow.     Jost d.       Indiagram below show distances of well from road and tot line. In digate north by arrow.     Jost d.       Image: Structure of the source of contamination?     I or Mater the source of the sour		Water	Record					
Augustic (lard, soft, contains iron, sulphur, etc.) And Appearance (clear, cloudy, coloured)	Kind (fresh or mineral). hash				Depth	(s)	Kind of	No. of Fee Water Rise
Appearance (clear, cloudy, coloured)	Quality (hard, soft, contains iron, sulphur, etc.)	and.			Horizo	n(s)	Water	
For what purpose(s) is the water to be used?       Analysis         How far is well from possible source of contamination?       If a superior is the source of contamination?         What is the source of contamination?       If a superior is the source of contamination?         Enclose a copy of any mineral analysis that has been made of water.       It a superior is the source of contamination?         Is full of overburden and Bedrock Record       From To       It a superior is the source of on the source of the source	Appearance (clear, cloudy, coloured)				15	)	head	37'
How far is well from possible source of contamination?       I. or a super standard stand	For what purpose(s) is the water to be used?	ours	e		52	2		
How far is well from possible source of contamination?       Image: Contamination?       Image: Contamination?         What is the source of contamination?       Image: Contamination?       Image: Contamination?       Image: Contamination?         Enclose a copy of any mineral analysis that has been made of water       Image: Contamination?       Image: Contamination?       Image: Contamination?         Image: Contamination?       Image: Contamination?       Image: Contamination?       Image: Contamination?       Image: Contamination?         Image: Contamination?       Image: Contamination?       Image: Contamination?       Image: Contamination?       Image: Contamination?         Image: Contamination?       Image: Contami	· · · · · · · · · · · · · · · · · · ·		- • • • • • • • • •	• • • • • • • • •				
What is the source of contamination? Cut takes         Enclose a copy of any mineral analysis that has been made of water.         Well Log         Overburden and Bedrock Record         IS       Is         Mark Is the source of contamination? Cut takes         Overburden and Bedrock Record         IS       Is	How far is well from possible source of contamination	12. 1.00	MA.	· · · · · · · · · ·				
Enclose a copy of any mineral analysis that has been made of water	What is the source of contamination?	e elo	Sol.	••••	• • • •		_	<u></u>
Weil Log       Image: Top of the second of the	Enclose a copy of any mineral analysis that has been	made of	water	*	••••			
Overburden and Bedrock Record     From     To       15     first or and 37 foot     0 ft    ft       15     first or and 37 foot     0 ft    ft       15     first or and 37 foot     0 ft    ft       16     16    ft     In diagram below show distances of well from road and lot line. Indicate north by arrow.       17     16     16       18     16     16       19     16     17       10     16     17       10     16     17       10     16     17       10     16     16       10     16     17       11     16     16       12     17     16       12     17     16       12     17     16       12     17     17       12     17     16       12     17     17       12     17     17       12     17     17       12     17     17       12     17     17       12     17     17       13     17     17       14     17     17       15     17     17       16	Well Log	1		<del></del>		Loc	ation of Well	
15       first grand and 37 food       0 ft.      tt.       Indegram below solw meaners of well from road and lot line. Indicate north by arrow.         1       1       1       1      tt.       well from road and lot line. Indicate north by arrow.         1       1       1       1       1      tt.      tt.         1       1       1       1       1      tt.      tt.      tt.         1       1       1       1       1      tt.      tt.      tt.      tt.      tt.         1       1       1       1       1      tt.      tttt.      tt.      ttt.      ttt.      ttt.      ttt.      ttt.      ttt.      ttt.      ttt.      tttttt.      ttttttt.      tt	Overburden and Bedrock Record	1	From	To	T., 41		halanahan diat	anace of
Marke Strington     Image: Image	15 feet grand and 37	feet	0 it.	It.	in dia well	igram from 1	oad and lot lin	inces of
Situation: Is well on upland, in valley, or on hillside? contained Address. Authority 2000 Address. Authority 2000 Name of Driller. Same Date	Aber Idmistore				dicate	e nort	h by arrow.	
Situation: Is well on upland, in valley, or on hillside? contained. Situation: Is well on upland, in valley, or on hillside? contained. Drilling Firm. Fr. fe : I parter & Jon. Address. Interview Jack. Name of Driller. Same. Date. Form 5 Form 5			······································			1,		
Situation: Is well on upland, in valley, or on hillside? explained. Situation: Is well on upland, in valley, or on hillside? explained. Drilling Firm. Fire fire for the sort. Address. Signature of Licensee Form 5				15	11	1 6	the Lot	2.
Situation: Is well on upland, in valley, or on hillside?, expland Address. Signature of Driller. Agent. Name of Driller. Agent. Form 5 Form 5			an a	47.3	e / A			
Situation: Is well on upland, is valley, or on hillside? expland. Drilling Firm. A. B. Jonatha	Joneston 200		<u></u>				1. 1.	
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Situation: Is well on upland, in valley, or on hillside? upland Drilling Firm. Fr. R. Sparks. A son Address. Address. Address. Market Name of Driller. Anne. Address. Market Date. Licence Number. 3.9.6 K.a. J.							,	
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Situation: Is well on upland, in valley, or on hillside? expland Drilling Firm. 77. 12. parts in some Address. Address. Signature of Licensee						11	oster	
Situation: Is well on upland, in valley, or on hillside? contained and a second						<u>IN</u> L	ייען.	
Situation: is well on upland, is valley, of on minister and the second s	O'unit and I amount of the section on billoid	07	lan					
Address. Add	Dituation: Is well on upland, in valley, or on milision	Son						
Name of Driller. Address. Addr	Adding							
Date	Aduress. Mana of Deillon Andrew Contraction and the			Addres	s	nh	*	
FORM 5				Licence	Number		3.9.6	
FORM 5 Signature of Licensee	Late				le H	-8	achs	
	FORM 5				Sign	ature	of Licensee	

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	31G/4e				Ø
UTM $   /  8 ^2  4 2 4 1 6$				15 N GROUND WATER BR	<u>9</u> 2561 ANCH
Elev CIR OLAX	<u></u>	ONT	ARIO	DEC 6 1960	
Elev. 140, 1171	The Wat	er-well Dr	rillers Act, 1954 of Mines	ONTARIO WATE	Ŕ
Basin $\sqrt{203}$ $\sqrt{203}$				RESOURCES COMMENS	SION
	v aier-	vv e	II Kecol	u a	
and the stall Distantiate	FAGIET	JN Tom	schip, Village, Town or	City. Gove	Bough
			Village, Town or ddress	City)	••••••
Date completed					
(day)	(month)	(year)	<u></u>	Pumping Test	
Pipe and Casing	g Record		·····		
Casing diameter(s)	<u> </u>	••••	Static level	6	•••••
Length(s)	•••••••••		Pumping rate Pumping level	10	••••••
Length of screen	- سرمید 		Duration of test	1 tiR	•••••
Well Log	· · · · · · · · · · · · · · · · · · ·			Water Record	
	From	То	Depth(s) at which	No. of feet	Kind of water
Overburden and Bedrock Record	ft.	ft.	water(s) found	water rises	or sulphur)
SHACET ISOCH	0	/2	-		-
GREY LIMESTURE	12	44	35-44	- 38-	FRESA
· 		-			
		*			
		-			
	_1	.1			
For what purpose (s) is the water	to be used?		I	Location of Well	- /
In water close or cloudy?	len	••••••	In diagram belo	w show distances of	i well from
Is well on upland, in valley, or or	n hillside?		road and lot II	ne. Indicate north	by arrow.
					IN I
Drilling firm $FPSP$	9 <i>6.15</i>				11
Address	S112 C2				
The CLOTTER	11 TOAPKe		·		
Address				.6	<u> </u>
Address			J		Thing
Licence Number	•••		\$15047	2 Howy	Y
I certify that the	foregoing				
statements of fact	t are true.	Î			
Date 10129 111	Spart	3			
	Signature of License	96			
Form 5					Ces co
- <b></b>				MUNSTER	<ul> <li>Control (1983)</li> </ul>
				10141-1	

- The state state will				
		GRO	UNDEWATERIBI	RANCH NGOZ
UTM 1 1 8 Z 4 2 3 19 18 0 E				
( OSTR Stolo 51/ 410 The Ontario Water Reso	urces Commissio	n Act	AUG UU 130	' // `
Elev. AR 10241318 WATER WEL	L REC	CRD <sub>RES</sub>	ONTARIO WATE	R SSION
Basin 25 LARLETON	ownship, Village	, Town or City	600600	
Con #9 Lot Per 12 I	Date completed	<b>7</b>	month	year)
	ress RR	#/ sti	ttsville	<u>Ont</u> .
Casing and Screen Record		Pumping	Test	
Inside diameter of casing 4"	Static level		20	Sany
Total length of casing 13 ft. 7."	Test-pumping	rate	3A 1	• G.P.M.
Type of screen	Pumping leve	1	30	U.C.
Length of screen	Duration of te	est pumping	<i>I</i> .	
Denth to top of screen	Water clear o	r cloudy at end of	test	CLEAR
Diameter of finished hole	Recommende	d pumping rate		<b>Э</b> G.P.M.
	with pump se	etting of <b>5</b>	<b>9</b> feet belo	w ground surface
Well Log			Wate	r Record
Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	(fresh, salty, sulphur)
		> /		
CLAY				
SHALE	3'	5'		
FINE GRAVEL	5'	71		
BLACK Limestone	2	· 52'	48'	FRESH
		Location	of Well	_1
For what purpose(s) is the water to be used?	In dia	agram below show	v distances of w	ell from
HOUSE	road	and lot line. In	dicate north by	arrow.
Is well on upland, in valley, or on billside?				1
Drilling or Boring Firm Johnon S. Anderson		11	1	' N
ant at the 1/2		11 .	10445	
Address KK ~/ 5717/5V11/E		45		
** 3 <i>C</i> C			160'	# 15 HWY
Licence Number				الله خان المراجع المراج المراجع مراجع مراجع المراجع الم
Name of Driller or Borer.				
Address SAME	••••			
Date 449 7, 76 Definition & Hune Tri- (Signature of Licensed Drilling or Boring Contractor)		Ţ		
Form 7 15M Sets 60-5930		Munster		
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( Mat			STRY OF THE EI Intario Water	NVIRONMENT Resources A	et EC	ORD		31/G	4
Ontario		SPACES PROVIDED	11	15157	62	MUNICIP		, ↓↓↓↓	22 23 24
COUNTY OR DISTRICT		TOWNSHIP, BOROUGH, CI	TY, TOWN, VILLAGE		CON	BLOCK, TRACT, SURVEY.	ETC.	L	0/2"
		13	7 Bradford	St. Ottawa	i. Onti	erio	DATE COMPLET	ер 4	8-53
			5075 5		اڭ	BASIN CODE			IV
	I2	G OF OVERBURDE	N AND BEDRO	CK MATERIAI	LS (SEE II	NSTRUCTIONS)		``	
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER M	ATERIALS		GENER	AL DESCRIPTION		FROM	TO
brown	clay	· · · · · · · · · · · · · · · · · · ·						0	8
grey	limestone				oft	,,,		8	82
grey	limestone	green	streeks	D	COKEN			02	05
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$\Box$						1 1 4 1		1.1.+	1 1 1
	8695 008	2121,578,5 001	<b>55-27.571</b>						
	TER RECORD	51 CASING 8	OPEN HOLE	RECORD		SA SI OF OPENING F NO.1	65 1-33 DIAMETER	34-38	75 4 ENGTH 39-4
WATER FOUND AT - FEET	KIND OF WATER	DIAM. MATERIAL	WALL THICKNESS INCHES FR	DEPTH - FEET		RIAL AND TYPE	D 0	INCHES EPTH TO TOP F SCREEN	FEE 41-44
00 <sub>83</sub> 'x	] FRESH 3 □ SULPHUR '" ] SALTY 4 □ MINERAL	6 10-11 1 X STEEL 2 GALVANIZE	<sup>12</sup> 188 C	00 25"	s s				FEET
15-18 1 C	] FRESH 3 [] SULPHUR <sup>19</sup> ] SALTY 4 [] MINERAL	06 3 CONCRETE 4. 00 OPEN HOLE 17-18 1 □ STEEL	<u> </u>	20-23	61 DEPTH		ATERIAL AND T		NT GROUT
20-23 1 C 2 C	] FRESH 3 [] SULPHUR 24 ] SALTY 4 [] MINERAL 70	CONCRETE		0085	FROM	TO 0-13 14-17			CKER. ETC. }
25-28 1 [	] FRESH 3 [] SULPHUR **	24-25 1 STEEL 2 GALVANIZE	<b>26</b>	27-30	1	8-21 22-25			
30-33 1 [	] FRESH 3 [] SULPHUR 3 ] SALTY 4 [] MINERAL	3 CONCRETE	E		20	30-33 80			
71 1 DEPUMP	THOD 10 PUMPING RAT	E II-14 DURATION D	F PUMPING 15-16 HOURS 17-18 MINS		L	OCATION O	F WELL		
	WATER LEVEL 25 END OF WATER PUMPING	EVELS DURING Z	PUMPING RECOVERY	IN DIA LOT L	AGRAM BEL INE. INI	OW SHOW DISTANCES DICATE NORTH BY AR	OF WELL FR ROW.	OM ROAD A	
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IF FLOWING. GIVE RATE	38-41 PUMP INTAKE	SET AT WATER AT E			8			EX.	
RECOMMENDED PU	GPM. MP TYPE RECOMMENDE PUMP	D 43-45 RECOMMEND	A6-49	COD.	ŭ			107	
SO-53	@PM./FT. SP	ECIFIC CAPACITY	GPM GPM		5	ŋ• <b>↑</b>	· 0	nu	
FINAL	1 WATER SUPPLY 2 D OBSERVATION WE	S ABANDONED, IN	SUFFICIENT SUPPLY DOR QUALITY			<u>k .40</u>	mke	1	
OF WELL	3 D TEST HOLE 4 D RECHARGE WELL	7 🗍 UNFINISHED							
WATER	1 DOMESTIC 2 STOCK 3 IRRIGATION	5 🗍 COMMERCIAL 6 🗍 MUNICIPAL 7 🗍 PUBLIC SUPPLY			Q				
USE	INDUSTRIAL     OTHER	8 🔲 COOLING OR AIR CC 9 🗌	NDITIONING NOT USED	CON.	l				
METHOD	57 1 CABLE TOOL	6    BORINI 1110NAL) 7    DIAMO	G N D						
OF	5 3 C ROTARY (REVERS	E) 8	iG G					ų	
NAME OF WELL			LICENCE NUMBER		KS: 58	CONTRACTOR 59-62	DATE	9 3 4	63-64 1
Cap:	ital Water Supp	oly Ltd.	1558	DATE OF INSP	ECTION	1558 Inspector	<u>v9</u>	7	231
Box	490 Stittsvil	le, Ontario	LICENCE NUMBER		617	-}-	MA	<b>9</b>	×
D. D.		SUBMISSION DATE		FICE	-		6.0	F	
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UNTY OR DISTRICT	2. CHECK 🗵 CORRE	CT BOX WHERE APPLICAT	BLE THE TOWN, VILLAGE		S CON	BLOCK, TRACT, SI	IA 15 J		0112
Conloton		Goulburn			9		DATE C		41-53
		G	# 7. Stitt	RC. ELEVATION	<u>Intario</u>	BASIN CODE	DAY_		YR
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	LO	G OF OVERBUR			GENER	RAL DESCRIPTIO	N	DEP FROM	TH - FEET
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31 00.0.86	28/1179 009	82/585							
			32			54		65 DIAMETER 34-3	75 38 LENGTH 39
41 WATER	RECORD	51 CASIN		E RECORD		LOT NO.)		INCHE	ES F
AT - FEET K	ND OF WATER	DIAM MATER	RIAL THICKNESS INCHES	FROM TO		TERIAL AND TYPE		DEPTH TO T OF SCREEN	OP 41-44
2 SA	LTY 4 $\square$ MINERAL RESH 1 $\square$ SULPHUR 19		ANIZED CRETE		61	PLUG	GING & S	EALING RE	CORD
2 G SA	LTY 4 MINERAL RESH 3 SULPHUR 24	17-18 1 🗋 STEE	L 19 VANIZED	20	I-23 DEPT	H SET AT - FEET	MATERIA		CEMENT GROUT. AD PACKER, ETC )
2 SA 25-28 1 SA	LTY 4 MINERAL RESH 3 SULPHUR 29	06 . KOPEN	CRETE N HOLE	009	<b>B</b>	10-13 14- 18-21 22-:	25		
2 [] SA 30-33 1 [] FF	RESH 3 SULPHUR 34		L VANIZED CRETE			26-29 30-	13 80		
	10 PUMPING RA	4 OPEN	N HOLE				NOFW	/ELL	
71 1 PUMP 2		] <sub>дрм.</sub> <u>С</u>	) 1 15-16 00 1 HOURSM	7-18 IINS IN	DIAGRAM B	ELOW SHOW DIS	TANCES OF	WELL FROM RO	AD AND
STATIC LEVEL	ATER LEVEL END OF PUMPING 22-24 15 MINUTE	LEVELS DURING	2 RECOVERY		DT LINE. I	INDICATE NORTH	EY ARROW.	Com C	ì
	65 FEET 0 65 F	-24 0 65 29-31 0	65 FEET 065	5-37 FEET	n V				- <u>A/</u>
CIVE RATE	38-41 PUMP INTAK	E SET AT	CLEAR 2 CLOU	DY					
RECOMMENDED PUMP T	YPE RECOMMEND PUMP SETTING	ED 43-45 RECC <b>D 75</b> FEET RATE	PINO 005	GPM					
50-53	GPM. / FT. SI	PECIFIC CAPACITY					2		
FINAL STATUS /	1 C WATER SUPPLY 2 OBSERVATION W	5 🗌 ABANDON ELL 6 🗋 ABANDON 7 🗍 UNFINIS	NED, INSUFFICIENT SUPP NED, POOR QUALITY SHED	LY		٩	Sun		
OF WELL	4 C RECHARGE WELL						74 +		
	2 STOCK 3 Inrigation 4 Noustrial	6 D MUNICIPAL 7 D PUBLIC SUPF 8 D COOLING OR	AIR CONDITIONING						
5		<b>6</b> []	BORING						
METHOD OF S	2 ROTARY (CONVE 3 ROTARY (REVER 4 ROTARY (AIR)	ENTIONAL) 7 (SE) 8 9	DIAMOND JETTING DRIVING						
NAME OF WELL CO	NTRACTOR		LICENCE NUMBER			SE CONTRACTOR	5 8-62 DATE	0***803	77 ***
	Gataterit 33-	Ontario			INSPECTION	77 INS	PECTOR	Kan PS	1
BOX 490,	OR BORER	, uncarlo,	LICENCE NUMBER		is:			<u>, , , , , , , , , , , , , , , , , , , </u>	P7.5
Sign Mure of CO		SUBMISS		DEFIC					WI
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			<b>1</b> 151593	32-			<u>1</u> <u>22</u> 23 24
2. CHECK 🖄 CORRE	TOWNSHIP, BOROUGH, CIT	Y. TOWN. VILLAGE	3	9 CON B	BLOCK, TRACT, SURVEY,	ETC.	"0/2" 12
	<u>Ceulburn</u>					DATE COMPLETED	48-53 05 yr77
	.R.	$\frac{\# 1 \text{ Stitts}}{100}$		<u>5</u>	BASIN CODE		
N 10 12	IT IN INCOMPANY	N AND BEDRO	CK MATERIAL	30 S (SEE IN	STRUCTIONS)		
GENERAL COLOUR COMMON MATERIAL	OTHER MA	TERIALS		GENERA	L DESCRIPTION	FR	DEPTH - FEET
	Previously	drilled				O	98
grey limestone						98_	110
	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1						
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			<u> </u>				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							
41 WATER RECORD	51 CASING 8				S) OF OPENING TNO.)	31-33 DIAMETER	34-38 LENGTH 39-40
WATER OUND KIND OF WATER FEET 10-13 I T FRESH 3 SULPHUR 14	INSIDE DIAM. MATERIAL INCHES	WALL THICKNESS INCHES FR	TO 13-16		RIAL AND TYPE	DEPTH OF SC	1 TO TOP 41-44 80 REEN FEET
O 108 2 SALTY 4 MINERAL 15-18 1 D FRESH 3 D SULPHUR 19	5 78 2 GALVANIZE 3 CONCRETE	188 (	0101	61	PLUGGIN	G & SEALING	RECORD
2 SALTY 4 MINERAL 20-23 L FRESH 3 SULPHUR 24	17-18 1 CALVANUZE	19 19	3 2023	DEPTH	SET AT - FEET TO	MATERIAL AND TYPE	(CEMENT GROUT.
2 🖸 SALTY 4 🗋 MINERAL 25-28 1 📋 FRESH 3 🗍 SULPHUR <sup>29</sup>		E	0110	1	0-13 14-17 8-21 22-25		
Z [] SALTY 4 [] MINERAL 30-33 1 [] FRESH 3 [] SULPHUR <sup>34</sup>	24-25 1 □ STEEL 2 □ GALVANIZE 3 □ CONCRETE	D		20	6-29 30-33 80		
2 SALTY 4 MINERAL	4 OPEN HOLI	F PUMPING		<u>ــــــ</u>	OCATION C	F WELL	
	15 GPM D 2	15-16 00 17-18 HOURS 00 MINS	IN DIA	AGRAM BEL		ES OF WELL FRON	ROAD AND
STATIC LEVEL END OF PUMPING WATER 19-21 22-24 IS NINUTE	LEVELS DURING Z	RECOVERY	LOT L	.ine. in 	DICATE NORTH BY A	NRUW.	
	5-28 0 45FEET 0 45 E SET AT WATER AT E	FEET 045 FEET					
GIVE RATE	FEET 1 疑 CL				Con		
RECOMMENDED PUMP TYPE RECOMMEND	60 FEET RATEO	005 GPM	1 Cres				
50-53 6PM./FT. S		NSUFFICIENT SUPPLY			6		
FINAL STATUS	VELL 6 ABANDONED, P 7 UNFINISHED	OOR QUALITY			R		
55-56 DOMESTIC					zu		
	6 📋 MUNICIPAL 7 🗋 PUBLIC SUPPLY 8 🔲 COOLING OR AIR C	ONDITIONING		l	-		
57	9 []	NOT USED			14,		
METHOD 2 CABLE TOOL 2 ROTARY (CONVI OF 3 ROTARY (REVER	6    BORIN ENTIONAL) 7    DIAMO RSE) 8    JETTI	DN D NG		ſ			
DRILLING 4 C ROTARY (AIR) 5 AIR PERCUSSIO	9 🗋 DRIVI N	N G	DRILLERS REMAR	RKS:			
NAME OF WELL CONTRACTOR	ply Ltd.	LICENCE NUMBER		58	1 558	Z DATE RECEIN	06 ( 60-00
ADDRESS	le. Ontario			PECTION U-j/C		In "	77
NAME OF DRILLER OR BORER	//	LICENCE NUMBER		/ /			P
S SUNATURE OF CONTRACTOR	CAL SUBMISSION DAT	те мо <b>Б</b> уг <b>7</b> *			(	181	WI
MINISTRY OF THE FI	VIRONMENT CO	PY	64 <u>1</u>				FORM 7 MOE 07-09

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C	Ontario	A.P.N. I. PRINT ONLY IN SF 2. CHECK 🛛 CORRE	ACES PROVIDED	$\left( 11 \right)$		<b>15</b> 15	941-	MUNICIP	03 Č	ØN	1 08
C	OUNTY OR DISTRICT	eton	TOWNSHIP, BOROUGH, CITY	, TOWN, VILLAGE	<b>b</b>	3	9 co	N., BLOCK, TRACT,	14 15 SURVEY, ETC.		<sup>22</sup> 23 24 <sup>L</sup> O/1 <sup>2</sup>
0	WNER (SURNAME FI	RST) 28-47	ADDRESS			· · · · · · · · · · · · · · · · · · ·		8	DATE CO		48-53
		nach Constr.	Ashton,	Ontaria 950						<u> </u>	<b>7.7</b> _
											47
G	ENERAL COLOUR	MOST COMMON MATERIAL	OTHER MAT	ERIALS			GENE	RAL DESCRIPTIONS	) )N	DEPTI	4 - FEET
	grey	crushed rock	<b>f</b> ill			10			<u> </u>	FROM	TO
	brown	sand	broken	rock		Dar	ckad				
ļ	grey	limestone				me	dium h	ard		4	30
-4	grey	limestone	black s	treaks		mec	tium s	oft			40-
	black	limestone				tet	cy sof	t		40	75
H	<u>jreen</u>	sandstone				medi	ium so	ft		75	- 90
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							SIZE	SA ST OF OPENING	31-33 DIAN	TETER 34-38	75 80 ENGTH 39-40
	ATER FOUND AT - FEET	KIND OF WATER	INSUE DIAM. MATERIAL	WALL THICKNESS	DEPTH	FEET		T NO.)		INCHES	FEET
b	<b>288</b> <sup>10-13</sup> <sup>1</sup> <sub>2</sub>	FRESH 3 SULPHUR 14 SALTY 4 MINERAL	12 12 12 STEEL 12	188	жом П	10 DÙ 24 <sup>13-16</sup>	SCI	CRIAL AND TIPE		DEPTH TO TOP OF SCREEN	41-44 BO
	15-18 1 🗌 2 🗍	FRESH 3 SULPHUR <sup>19</sup> SALTY 4 MINERAL			24	90	61	PLUGO	GING & SEA	LING RECO	RD
	20-23 1 🗌 2 🗍	FRESH 3 SULPHUR 24	17-18 I _ STEEL 19 2 _ GALVANIZED			20-23	DEPTH FROM	SET AT · FEET	MATERIAL AN	ID TYPE (CEME LEAD PA	NT GROUT. CKER, ETC.)
	25-28 1 🗆 2 7	FRESH 3 D SULPHUR 29	24-25 1 STEEL 26			0090	1	0-13 14-17			
	30-33 1	FRESH 3 C SULPHUR 3460	2 GALVANIZED 3 CONCRETE				20	5-29 30-33	80		· · · · · · · · · · · · · · · · · · ·
	PUMPING TEST MET	HOD 10 PUMPING RATE	4 OPEN HOLE	APING							
7	1 🗆 PUMP		GPM. 0 1 15-16	s 00 17-18 MINS				OCATION	OFWEL	. L	
۳۲ ۲	STATIC LEVEL 19-21	WATER LEVEL 23 END OF PUMPING 22-24 15 MINUTES 1	LS DURING 1 🕱 F 2 🗌 F 30 MINUTES 1 45 MINUTES	ECOVERY			GRAM BEL INE. INE	OW SHOW DISTA DICATE NORTH E	NCES OF WELL Y ARROW.	FROM ROAD A	ND M
G TE	0 48 FEET	0 48 FEET 0 48 FEET	29-31 32-3 48 FEET 0 48 FEE	14 35-37 ТОАЯ FEET		2	11				$\lambda^{\alpha'}$
IPIN(	IF FLOWING. GIVE RATE	38-41 PUMP INTAKE SET	AT WATER AT END OF	TEST 42		e)					
PUN	RECOMMENDED PUM	GPM P TYPE RECOMMENDED PUMP	43-45 RECOMMENDED	46-49					GHL L	NE	
	50-53	GPM./FT. SPECIFI	C CAPACITY	5 GPM				• 25	sile	1 où	· ·
	FINAL	1 WATER SUPPLY	5 ABANDONED, INSUFF	CIENT SUPPLY			RC			7.990	
	STATUS OF WELL	3 D TEST HOLE	7 UNFINISHED	-0-111			'UE				
	55 14/4755	2 STOCK	COMMERCIAL			5. Q	3				
	USE	A D IRRIGATION 7	PUBLIC SUPPLY     COOLING OR AIR CONDITI	ONING		C O	6%				
$\vdash$		57 LG CARLE TOOL	۹ LI NOT L	USED			100				
	METHOD OF	2 ROTARY (CONVENTION 3 ROTARY (REVERSE)	6 LI BORING AL) 7 □ DIAMOND 8 □ JETTING	x.			<u>j</u>				
	DRILLING	4	9 DRIVING		DRILL	ERS REMARKS					
<b>_</b>	NAME OF WELL CO		LICE	ICE NUMBER		DATA SOURCE	58 0		-62 DATE RECEIVE	D	63-68 80
CTOF	ADDRESS	ai water Supply	Ltd.	558	ON	ATE OF HISPEC	TION	I 3 3 0		7067	77
TRA	Box 4	90 Stittsville, R or Borer		CE NUMBER	USE	HARKS:	<i>411/7</i>	2	14	<u>  75</u>	
CON	CATUJE OF CO	NTR CTOR	SUBMISSION DATE		FICE	v				P	95
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Ministry of the Environment		The Ontario Water Resour	ces Act 3/G40
Ontario		1516554 1516560	
COUNTY ON DISTRIC	TOWNSHIP. BOROGH. CITY. TOWN. VILLAGE	CON., BLOCK TRACT, SUBJE	T5         22         23         74           Y. ETC.         Lot         25:27         25:27           Date completed         Completed         Completed         Completed
	10-5-300 4	Richmond Ont.	
	OG OF OVERBURDEN AND BEDRO	DCK MATERIALS (SEE INSTRUCTIONS)	47 DEPTH - FEET
GENERAL COLOUR COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	FROM TO
grey clay			0.4
grey limestore			4 58
4 WATER RECORD	CASING & OPEN HOLE	A3 54 RECORD SIZE(S) OF OPENING ISLOT NO 1 DEPT H - FEET	65 75 80 31-33 DIAMETER 34-38 LENGTH 39-40 INCHES FEET
10-13 10-13 10-13 10-13 10-13 10-13 10-13 10-13 10-13 10-13 10-13 10-13 10-13 10-13 10-14 10	INCHES MATERIAL THICKNESS FI	ROM TO INATERIAL AND TYPE	DEPTH TO TOP 41-44 80 OF SCREEN FEET
20-58 15-18 1 G FRESH 3 ULPHUR 19 2 G SALTY NINERAL 20-23 1 G SALTY 2 NINERAL	06 3 □ CONCRETE 1 □ OPEN HOLE 17-18 1 □ STEEL 19	20-23 DEPTH SET AT - FEET	G & SEALING RECORD
2 - SALTY 4 - MINERAL 25-28 1 - FRESH 3 - SULPHUR 29 1 - FRESH 3 - SULPHUR 29	2 GALVANIZED 3 CONCREIE 4 OPEN HOLE 24-25 CONCREIE 26	27-30 18-21 22-25	
2 SALTY 4 MINERAL 30-33 1 FRESH 3 SULPHUR <sup>34</sup> 2 SALTY 4 MINERAL	10 2 □ GALVANIZED 3 □ CONCRETE 4 □ OPEN HOLE	26-29 30-33 00	
71 PIMPING TEST METHOD 10 PUMPING RA 1 D PUMP 2 BAILER 09	15 5 GPM 0/ 15-16 17-18 GPM 0/ 15-16 0 17-18	LOCATION	F WELL
STATIC LEVEL PUMPING 19-21 22-24 IS MINUTE	LEVELS DURING PUMPING RECOVERY S 30 MINUTES 60 MINUTES	IN DIAGRAM BELOW SHOW DISTANCI LOT LINE. INDICATE NORTH BY A	IS OF WELL FROM ROAD AND RROW.
E COL FEET OF STEET O	EST AT WATER AT END OF TEST 42		/Υ,
RECOMMENDED PUMP TYPE RECOMMEND	$\begin{array}{c} FEET & \Box & \Box & CLEAR & 2 \\ \hline \\ ED & 5 & -43 & -45 \\ PUMPING & PUMPING \\ FEET & ATELED & 5 \\ FEET & ATELED & 5 \\ \hline \end{array}$		
			ONO IX
FINAL     I G WALEN SOFTLI       STATUS     2 OBSERVATION W       OF WELL     4 OF RECHARGE WELL	ELL 6 ABANDONED, POOR QUALITY 7 UNFINISHED	Tomi	<u>→</u> ↑200′
WATER	-5  COMMERCIAL 6  MUNICIPAL 7  PUBLIC SUPPLY	91	th Line
	COOLING OR AIR CONDITIONING     O NOT USED	C) and	N. WIII
METHOD / OF / DRILLING / S CABLE TOOL 2 ROTARY (CONVE 3 ROTARY (CONVE 3 ROTARY (REVER: 4 ROTARY (AIR) 5 CAIR PERCUSSION	6 DORING NTIONAL) 7 DIAMOND SE) 8 JETTING 9 DRIVING	DRILLERS REMARKS	
g deny Mans (	Vell Drilling 3644	DATA 58 CONTRACTOR 69-62 SOURCE 3644	DAYE RECEIVED 63-64 80
NAME OF DRIXLER OF BORER	Kichunden Ont.	WS REMARKS /5/79 K	m. g. P.l.
S SIGNATURE OF CONTRACTOR	aus SUBMISSION DATE DAYMOYR. 78	OFFIC	Ch.,
MINISTRY OF THE ENVI	RONMENT COPY		FORM NO. 0506-4-77

Ministry		The Ontario	Water Resources	Act 3164e
of the Environment	WAT		ELL R	ECORD
Ontario I. PRINT ONLY IN 2. CHECK COR COUNTY OR DISTRICT / -	I SPACES PROVIDED	1517686	BLOCK TRACE SURVEY FIC	
( antelop	Loubourn		Con 9	
	<u> </u>	$\begin{array}{c} \mathcal{L} \\ $	BASIN CODE	$\frac{\sqrt{21}}{11}$ MO $\frac{2}{\sqrt{R}}$ $\frac{1}{\sqrt{R}}$
	OG OF OVERBURDEN AND BEDR	OCK MATERIALS SEE	instructions)	<u> </u>
GENERAL COLOUR MOST COMMON MATERIAL	OTHER MATERIALS	GENE	RAL DESCRIPTION	DEPTH FEET FROM TO
grey gravet	//			09
grey demestore		sha	ly	9 87
		(	1	
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31 0009×11/1 008	7 [2] //5[82] _ ] [ ] [ ] _ ] ] ]			
41 WATER RECORD	51 CASING & OPEN HOLE	RECORD	54 57 OF OPENING 31-33 T NO 2	H         H
WATER FOUND KIND OF WATER AT - FEET $10-13$ 1 D FRESH 3 ULPHUR 14 2 SATURA 4 CHARACTER 14	INSIDE MATERIAL HICOVESS INCHES I INCHES I OGO-III I COSTEEL 12	DEPTH - FEET         III         IIII         IIII         IIII         IIII         IIII         IIII         IIIIII         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	RIAL AND TYPE	INCHES FEET DEFTH TO TOP OF SCREEN
15-18 1 _ FRESH 3 _ SULPHUR 19 2 _ SALTY 4 [] MINERAL	67 CONCRETE 188 C	0022 61	PLUGGING & S	
20-23 1 [] FRESH 3 [] SULPHUR 24 2 [] SALTY 4 [] MINERAL 25-24 1 [] FOLSH 2 [] SULPHUR 29	C CIT-18 : ] STEEL 19 C C C C C C C C C C C C C C C C C C C	20-23 DEPTH FROM 10	IO MATERI 10 1-13 14-17	AL AND TYPE CEMENT GROUT
2 G SALTY 4 G MINERAL 30-33 I G FRESH 3 G SULPHUR <sup>34</sup> 80	24-25 1 [] STEEL 26 2 [] GALVANI7ED 3 [] CONCRETE	27-30	-21 22-25 29 30-33 80	
2 SALTY 4 MINERAL	OPEN HOLE		OCATION OF W	VELL
STATIC LEVEL PUMPING	CPM HOURS HOURS HINS EVELS DURING T PUMPING 2 RECOVERY	IN DIAGRAM BELG LOT LINE IND	DW SHOW DISTANCES OF NICATE NORTH BY ARROW	WELL FROM ROAD AND
С	30 MINUTES 10 00 29-31 00 32-34 00 00 5-37 10 FEET FEET FEET FEET			N,
GIVE RATE GPM COMPENDED PUMP TYPE RECOMMENDED	FEET 1 CLEAR 2 CLOUDY			
C SHALLOW DEEP SETTING O	FEET RATE GOOLO GPM			145'
FINAL STATUS	5 ABANDONED, INSUFFICIENT SUPPLY 6 ABANDONED POOR QUALITY 7 UNFINISHED	2	toka	
OF WELL 4 RECHARGE WELL 55-56 1 DOMESTIC 2 STOCK		4 10	•	•
WATER 3 IRRIGATION USE 01 4 INCUSTRIAL	Public Supply Public Supply COOLING OR AIR CONDITIONING PUBLIC SUPPLY P			
METHOD 57 CABLE TOOL 2 DROTARY (CONVENT	6 D BORING 10NAL) 7 D DIAMOND	then sto		
DRILLING	<ul> <li>D JETTING</li> <li>D DRIVING</li> </ul>	DRILLERS REMARKS		×
u Henry Mains We	Or Driflery 3644	DATA 58 CC SOURCE /	DINTRACTOR 59-62 DATTRE	2.0182.
NAME OF DRILLEN OR FORER	Kichipond Out		INSPECTOR	
SIGNATURE OF POUTRACTOR	SUBMISSION DATE 9 RT	DFFICE		St.
MINISTRY OF THE ENVIE				FORM NO. 0506-4-77 FORM 7

Ministr	У	$\langle \hat{\gamma} \rangle$		The	Ontario V	Nater Resourc	es Act	31640
of the	nment	i i	NAT	ΓER	WE	ELL	REC	ORD
Ontario	1. PRINT ONLY IN SPAC	ES PROVIDED		1518	141		CON.	
COUNTY OR DISTRICT	2. CHECK 🛛 CORRECT	BOX WHERE APPLICABLE TOWNSHIP, BOROUGH, CITY,	TOWN. VILLAGE		CON	BLOCK, TRACT, SURVEY		
OTTAVIAC	ARLETON	GOULB	OURN		8			0/2
		× 7.	44	STIT.	SUIL	LE	DATE COMPLETED	<b>32</b> " 3 yr 83
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	LOG	OF OVERBURDEN A	AND BEDR	OCK MATERI	ALS (SEE IN	STRUCTIONS		47
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATE	RIALS		GENERA	LDESCRIPTION	D	EPTH - FEET
BROWN	EARTH	FILL			200.	SE	0	' 5'
GRAY	LIME STONE						5	' 37'
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	29177 00372							
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20-23 1 FRES	SH 3 SULPHUR 24	17-18 1 STEEL 19 2 GALVANIZED		20-2	DEPTH SET	AT - FEET MAT	ERIAL AND TYPE	CEMENT GROUT
2 [] SALT 25-28 1 [] FRES	Y <sup>4</sup> ☐ MINERAL SH 3 ☐ SULPHUR <sup>29</sup>	CONCRETE		0037	10-13	14-17		
2 🗋 SALT	Y 4 MINERAL	24-25 1 🖸 STEEL 26 2 🗍 GALVANIZED		27-30	18-21	22-25		
2 [] SALT	Y 4 MINERAL	OPEN HOLE			26-29	30-33 80		
7 DUMPING TEST NETHOD	BAILER	11-14 DURATION OF PUMPI O IS-16- HOURS	NG 17-18		LO	CATION OF	WELL	
STATIC WATEL LEVEL PU	R LEVEL 25 ID OF WATER LEVELS MPING		MPING	IN DI LOT I	AGRAM BELOW	SHOW DISTANCES C ATE NORTH BY ARRO	OF WELL FROM ROA	DAND
	22-24 IS MINUTES 30	AINUTES 43 MINUTES 29-31 4 32-34	60 MINUTES 35-37		个			
U IF FLOWING. GIVE RATE	FEET CAS FEET 38-41 PUMP INTAKE SET AT	WATER AT END OF T	EST 42		Ŧ	1		
RECOMMENDED PUMP TYPE	GPN RECOMMENDED	FEET 1 CLEAR	2 CLOUDY		COL	n/ 9		
SI-53	DEEP SETTING 030	FEET RATE 000	5 брм	¥ -	-71Kh =	-  .	ала — «Коланараларанараларанараларанараларанараларанараларанараларанараларанараларанараларанараларанараларанар	
	WATER SUPPLY		IENT SUDDIV	Ú)Ľ		2 80		2
STATUS	BOBSERVATION WELL	ABANDONED, POOR QUA     UNFINISHED	ALITY	N N		V.	<u> </u>	
55-56 y	DOMESTIC S	COMMERCIAL		R	1	27		~
WATER 3	STOCK 6	MUNICIPAL Public Supply		1 E	Hous	= 74		T
USE 01 .		COOLING OR AIR CONDITION D NOT USE	NING ED	Z/N	•••••••••••••••••••••••••••••••••••••••			
METHOD 2	CABLE TOOL ROTARY (CONVENTIONAL)	6 🗍 BORING 7 🗍 DIAMOND		МИ				SIDE
OF 1 3 DRILLING	ROTARY (REVERSE)     ROTARY (AIR)	<ul> <li>JETTING</li> <li>DRIVING</li> </ul>						R
NAME OF WELL CONTRA				DRILLERS REMARI	KS			<u> </u>
B M KAUP	ANAGH ~ SO		142		58 CONT	RACTOR 53-62 DA	1.3.03	83
RR 2 C	ARLETON	PLACE			ECTION	INSPECTOR		
NAME OF DRILLER OR BU MIKE	KAVANAGH		e number 142			L		
SIGNATURE OF CONTRAC	TOR America	DUBMISSION DATE	2 **	OFFIL				
	F THE ENVIRONME		YR	L <u> </u>		<u> </u>	FORM NO. 05	06—4—77 FORM 7

S Mini	stry		<b>.</b> '	-	The C	Ontario	Water Resour	ces Act	31	64e
of th Envi	e ronment		WA	TE	R	W	ELL	RE	CC	R
ntario	1. PRINT ONLY IN SP/ 2. CHECK 🗵 CORREC	ACES PROVIDED T BOX WHERE APPLICABLE		15	186	543	15003		N	. 1 10
Ottawa-	Carleton	TOWNSHIP, BOROUGH CIT	Y, TOWN, VILLA	GE	· · ·	CON.	BLOCK, TRACT, SURVE			LOT 21
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		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1						DAY 20	<u>мо</u>	YR
	LOG							_1_11		
NERAL COLOUR	MOST COMMON MATERIAL	OTHER MA	TERIALS			GENER.	AL DESCRIPTION		DEPTH	I · FEET
Brown	Hardpan				Pa	cked			0	10
Gray	Limestone		·····		Me	dium			7	9
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A FOUND		CASING & C		E RECOP	EET .		OF OPENING 3 NO 1	1-33 DIAMETE	R 34-38 L	ENGTH 3
10-13 / St	FRESH 3 D SULPHUR 14	DIAN MATERIAL ICHES 12 10-11 1 X STEEL 12	THICKNESS	FROM	TO 13-16		IAL AND TYPE	0	EPTH TO TOP	41-44
15-10 1 C	FRESH 3 D SULPHUR 19	CONCRETE	188	0 0	<b>2</b> 20	61	PLUGGING	& SEALU	NG RECO	
20-23	FRESH 3 SULPHUR 24	G-14 J STEEL 19		00.0	20-23	DEPTH SE	TAT - FEET MA	TERIAL AND T	YPE (CENE LEAD PA	NT GROUT CKER, ETC )
25-28	FRESH 3 SULPHUR 29	CONCRETE		20 0	090	10-	13 14 - 17			
30-33 1 [] f	FRESH 3 SULPHUR 34 80	2 GALVANIZED 3 CONCRETE			27-30	26-2	9 30-33 80			
PUNPING TEST METHO	D 10 PUMPING RATE	4 OPEN HOLE	MPING							
		10 01 15-16 GPM HOUR	17-1 RS 17-1	<u>.</u>				WELL		
19-21	END OF WATER LEVELS PUMPING 22-24 15 MINUTES 3	S DURING 2 1 6 0 MINUTES 45 MINUTES	PUMPING RECOVERY 60 MINUTES			ie. INDI	cate North by Arr	OF WELL FR	OM ROAD A	νD
048 FEET		<b>6</b> 0 <sup>29-31</sup> FEET <b>0</b> 60 <sup>32-3</sup> FEE	060 <sup>35-3</sup>	7 T	5	deF	lood.			
GIVE RATE	GPM	FEET I CLEAR	2 CLOUDY	"   =	1			1		•
RECOMMENDED PUMP 1	TYPE RECOMMENDED PUMP SETTING O	70 FEET RATE	005 <sup>46-45</sup>	]				1		
54		·····				*			*	
FINAL STATUS	I D WATER SUPPLY 2 OBSERVATION WELL 3 D TEST HOLE	<ul> <li>S ABANDONED, INSUFF</li> <li>G ABANDONED, POOR C</li> <li>7 UNFINISHED</li> </ul>	ICIENT SUPPLY QUALITY	m	UNSTE A	٩		12		
OF WELL	4 C RECHARGE WELL			Ra	οAϿ.			6		
WATER 01	2 STOCK 8 3 IRRIGATION 7	MUNICIPAL     PUBLIC SUPPLY						٩.		
		UOLING OR AIR CONDIT 9 0 NOT 1	IONING JSED			F.				
	1 CABLE TOOL 2 ROTARY (CONVENTIONAL	6 D BORING		1		ł				
	3 COTARY (REVERSE) 4 ROTARY (AIR) 5 CX AIR PERCUSSION	A DIETTING 9 DRIVING								
NAME OF WELL CON	TRACTOR	LICE	NCE NUMBER		A C	58 CON	TRACTOR 59-62 DA		14	0.0
Capite	al Water Supp	ly Ltd. 1	558		RCE J		558	23	11	03
	0; Stittsvill			11			S S			
Box 49	RBORER	le, Ont. KO.	A 3GO		ADVC		×			
Box 49	R BORER	SUBMISSION DATE	A 3GO		ARKS		<u>``</u>			

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( On	tario l	Ministry of he Enviror	iment	II I ag Number-(Pla	ace sticker and pri	nt number below)	Regulation 903 Onta	Well R ario Water Reso	ecord
Instructions f	or Completin	a Form		A026096	a "in "inte cline day	And Contraction		page _	of
• For use in	the <b>Province</b> of	of Ontario	only. This do	cument is a perr	nanent <b>lega</b>	I document. Pl	ease retain for future refe	erence.	
<ul> <li>All Section</li> <li>Questions</li> </ul>	s <b>must</b> be con regarding com	pleted in f	ull to avoid de application of	elays in processi can be directed t	ng. Further i o the Water	Nell Managen	d explanations are available nent Coordinator at 416-2	e on the back of 235-6203.	this form.
<ul> <li>All metre i</li> <li>Please prir</li> </ul>	<b>neasurement</b> nt clearly in blu	s shall be e or black	reported to ink only.	1/10 <sup>th</sup> of a metre	•	· · · · · · · · · · · · · · · · · · ·	Ministry Use Onl	y	
	· · · · · · · · · · · · · · · · · · ·				MUN			IOT	
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(									
Address of Well L	ocation (County arleton	District/Mur 5	nicipality)		ownsnip Goulbou	Irn	Lot 12	Concession	9
RR#/Street Numl	per/Name	 ad			City/Town/Vi	llage	Site/Compartmer	nt/Block/Tract etc	).
GPS Reading	NAD Zon	e Easting	41 62	Northing	Unit Make/M	lodel Mode	of Operation: Undifferent	iated XAvera	ıged
Log of Overb	urden and Be	drock Ma	terials (see	instructions)	Gaimi	L #8			
General Colour	Most common	material	Oth	er Materials		Genera	I Description	From	
Brown	Sandy	Soil	S	tones				1 92	2.8
Grav	<u> </u>	000	1					3.35	12.19
Green & Red	Shale	¥#¥						12.19	35.96
Hole Dia Depth Met	ameter es Diameter	lasida	· · · · · · · · · · · · · · · · · · ·	Construction Rec	Depth	Motros	Test of V Pumping test method Dr	Vell Yield aw Down R	ecovery
From To	centimetres	diam	Material	thickness	From	To	submersible Time	Water Level Time Metres min	Water Level Metres
0 6,	,40 22.75	cenumetres		Casing			Pump intake set at - Static (metres) <b>30 47</b> Level	13.94	1
6.40 35	.96 15.23	15.86	Steel Fibre	eglass .48	+ .45	6.40	Pumping rate - 1 (litres/min) 54.6	14.64 1	13.84
Water F	Record		Plastic Con Galvanized	crete			Duration of pumping 2	14.76 2	13.85
Water found at Metres	Kind of Water		Steel Fibre	eglass			Final water level end 3	14-81 3	13.89
	alty Minerals		Galvanized	Crete			Recommended pump	16 83 4	13.06
	esh 🗌 Sulphur		Steel Fibro	eglass			type. Shallow X Deep		10.00
Gas Sa	alty Minerals		Galvanized				depth. 22.85 hetres	14.85 5	13.96
☐ m ☐ Fr	esh 🗌 Sulphur alty 🗌 Minerals	Outside <sup>.</sup>		Screen	1		rate: 4 freemin) 15	<b>14.87</b> 10 <b>14.89</b> 15	13.96
Other:		diam	Plastic Con	crete	_		If flowing give rate - 20 (litres/min) 25	<b>14.88</b> 20	13.95
Clear and sedi	ment free		Galvanized				If pumping discontin- ued, give reason.	14.89 <sup>20</sup> 14.90 <sup>30</sup>	13.95
Other, specify.			Monan hala	No Casing or Sc	reen	05.00	40 50	<b>14.90</b> 40 <b>14.91</b> 50	13.95 13.95
Chlorinated 📉 Ye	es 🗌 No	15.23			6,40	35,90	60	14 91 60	13,95
P Depth set at - Metr	Iugging and Se	ealing Reco	urry peat cemen	Annular space	Abandonment ime Placed	In diagram below	Location of We	ad, lot line, and bu	ilding.
From To	Gronted	- Rent	onite Slu	(cut	2m3	Indicate north by	y arrow.	t i	
						⊅		7579	
								· ·	
		I						1	-
	1	Method of (		and	Diaging	B		Ottless	
Cable Tool	tional) 🔀 Air per	(air) cussion	Jettir	ig [	Digging Other	9		1	
Rotary (reverse	) []Boring	Wate	Drivir Pr Use	ng —		ten 1	Flewenyn Ra.		
Domestic Stock	Industr	ial ərcial	Publi	c Supply [ Ised	Other	1			
Irrigation	Munici	Final Sta	Cooli	ng & air conditioning		Audit No. Z	26062 Date Web	Completed	
Water Supply	Recharge w	rell		ished Aban	doned, (Other)	Was the well ov	wner's information Date Deli	vered YYYY 2005	MM DD
☐ Observation we	Abandoned	, insumcient s , poor quality	Repla	acement well			Ministry Lise On	2003 Iv	<u> </u>
Name of Well Con	Well Cor tractor	ntractor/Teo	ennician Info	Well Contractor's	s Licence No.	Data Source	Contract	550	
Capital Wa Business Address	ter Supply (street name, num	ber, city etc.)		1558		Date Received	YYYY MM DD Date of Ir	spection YYYY	MM DD
P.O. Box 4	90 Stitt	first name)	Ontario K	2S <u>1A6</u> Well Technician's	s Licence No.	Remarks	2 2005 Well Red	cord Number	<u> </u>
Miller: St	ephen nigia//Contractor			TOO97					
x flur	Kara	Λ	tractor's Const				Cette formu	le est disponible	en francais
0506E (09/03)		Cor	irractor's Copy				Cone Ionnu		



		·····		
				-
Annular Space		Results of We	Il Yield Testing	
Depth Set at ( <i>m/ft</i> ) Type of Sealant Used	Volume Placed	After test of well yield, water was:	Draw Down	Recovery
C 2 2 1 Vr (Material and Type)	{ <i>m<sup>o</sup>/n<sup>o</sup>)</i>	Other, specify	(min) (m/ft)	(min) (m/ft)
O 3 D anjonite		If pumping discontinued, give reason:	Static	
3.35 6.7 fills smd			1	1
		Dump intoko oot ot (m/ft)		
		Fump intake set at (1111)	2	2
		Pumping rate (I/min / GPM)	3	3
Method of Construction View Us	e		4	4
Rotary (Conventional)      Jetting      Domestic      Municipal	al Dewatering	Duration of pumping	5	<b>E</b>
Rotary (Reverse)     Driving     Livestock     Test Hole	e 🛛 🖉 Monitoring	nrs + min		
	& Air Conditioning	minal water level end of pumping (mm)	10	10
Other, specify Other, specify		If flowing give rate (I/min / GPM)	15	15
Construction Record - Casing	Status of Well		20	20
Inside Open Hole OR Material Wall Depth ( <i>m/ft</i> ) Diameter (Galvanized, Fibreolass, Thickness I	Water Supply Replacement Well	Recommended pump depth (m/ft)	25	25
(cm/in) Concrete, Plastic, Steel) (cm/in) From To	Test Hole	Recommended nump rate	23	20
S, ZOPVC 1.390 0 3.66	Recharge Well     Deventorie - M(all)	(I/min / GPM)	30	30
	Dewatering vvei     Observation and/or	Well production ((min ( GPM)	40	40
	Monitoring Hole		50	50
	(Construction)	Disinfected?	60	60
	Abandoned,			00
Construction Record - Screen	Abandoned, Poor	Map of We	ell Location	ba baak
Outside Material Depth (m/ft) Diameter (Plastic Galvanized Steel) Slot No.	Water Quality	Please provide a map below tollowit	ng instructions on t	ne back.
	specify			
6.05 BVC 10 3.666.1	- Other specific		, 1	
		Seo.	p-( é	P
Water Details	lole Diameter		لا بېسىم	Le Viene
Water found at Depth Kind of Water: Fresh Untested Dept	th ( <i>m/ft</i> ) Diameter		MNS	
(m/ft) Gas Other, specify	3 1117			
Water found at Depth Kind of Water: Fresh Untested	1 - 2 62			
Water found at Depth Kind of Water: TFresh Untested	6. / 0.07			
( <i>m/ft</i> ) Gas Other, <i>specify</i>				
Well Contractor and Well Technician Informat	ion			
Business Name of Well Contractor	Il Contractor's Licence No.			
Strike Schling (Stock Number NUM)		Commonte:		
176 Konstand Ar	Latter: 12	Qumments.		
Province Postal Code Business E-mail Address				
ON LMABER Wrendestrat	ASON. COM	Well owner's Date Package Delivere	ed Minis	stry Use Only
Bus. Telephone No. (inc. area code) Name of Well Technician (Last Name,	First Name)	package YYYY MMM	DDD	-324267
Well Technician's Licence No. Signature of Technician and/or Contractor De	te Submitted	Date Work Completed		
	a Dia h 1 ZI	$\Box_{NO}$ $Q_{10}Q_{10}$	20	



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	Heeler Alter		
		Sec. S.	- 200
		11 (S. )	- 6
THE BACKGROUND IMAGE CONTAINS INCORMATION LICENSED	LEGEND	2	5m 10m
UNDER THE OPEN GOVERNMENT LICENSE - CITY OF OTTAWA			RIZONTAL 1:
	CALIFORNIA CONTRACTOR	SHIC waterpart The Hotel 25 (37) Dive Shie Titt	
DATE JAN 2020	CLIENT:		project no.
DESIGN CHECKED	ттте: 7598 FLEWELLYN RD -	- SITE PLAN	scale 1:500 FIG 2
C-7241	1		
7364348



Well Tag No. (Place Sticker and/or Print Below) A 296273



8784884 CANADA INC. C/O

· · ·	Street Number/Name)		Iownsnip	LUL	001023310		
<u>76</u> Cauaty/District/Municipalit	09 Fleve	In Road	City/Town/Village		Province	Postal	Code
County/District/Municipalit	y i		Offanon	(Shitkille)	Ontario		
UTM Coordinates Zone	Easting Nor	thing	Municipal Plan and Sublò	t Number	Other		
Overburden and Bedro	/   ヘ    しし   [ ] ) ock Materials/Abandor	ment Sealing Re	Cord (see instructions on the	e back of this form)			
General Colour	Most Common Material		Other Materials	General Description		From	n ( <i>m/ft)</i> <u>To</u>
CAK	Topsoil			Soft		-	
BRN 0	Coarge Sand	G Ga	alel Silt	Soft love			0
GRY .	Cimeston			herd		6	20
				·			
Can't Gaussian Stream Courses and a Can't Starburger (	an a	ARE STORE AND ADDRESS OF A COMPANY		Desilie of W			
Depth Set at (m/ft)	Type of Seal	Iant Used	Volume Placed	After test of well yield, water was:	Draw Down	Re	
From To	(Material and	d Type)	(m³/ft³)	Clear and sand free	Time Water Lev (min) (m/ft)	el Time   ' ( <i>mín</i> )	Nater Level (m/ft)
13 1	MONUMENTI C	<u>ers</u> 129		If pumping discontinued, give reason:	Static Level		
<u> </u>	bensed				1	1	
9 20	Pitter and			Pump intake set at (m/ft)	2	2	
				Pumping rate (//min / GPM)	3	3	
Method of Cons	truction Rut	Well	Use		4	4	
Cable Tool     Rotary (Conventional)		mestic 🗌 Muni	cipal Dewatering	Duration of pumping brs + min	5	5	
Rotary (Reverse)	Driving Live	estock 📈 Test jation 🗌 Cooli	Hole Air Conditioning	Final water level end of pumping (m/ft	10	10	
	et push Dindi	ustrial er. specify			15	15	
Cons	truction Record - Cas	lng	Status of Well	I If flowing give rate (I/min / GPM)	20	20	
Inside Open Hole C	DR Material Wall	Depth (m/ft)	Water Supply	Recommended pump depth (m/ft)	20	20	
(cm/in) Concrete, Pla	astic, Steel) (cm/in)	From To	Keplacement weil	Recommended pump rate	25	25	
2.007 PU	C \54	t3 10	Recharge Well     Dewatering Well	(l/min / GPM)	30	30	
		1	M Observation and/or	11			
			Monitoring Hole	Well production (I/min / GPM)	40	40	
			Monitoring Hole	Well production (Irmin / GPM)	40 50	40 50	
		· · · ·	Monitoring Hole Alteration (Construction) Abandoned, Insufficient Supply	Well production ( <i>Vmin / GPM</i> ) Disinfected? Yes Disinfected?	40 50 60	40 50 60	
Cons	truction Record - Scr	een	Construction     Construction     Construction     Construction     Abandoned,     Insufficient Supply     Abandoned, Poor     Worder Coulthr	Well production (Imin / GPM) Disinfected? Yes No Map of W Please provide a map below follow	60 60	40 50 60	
Outside Diameter (cm/m) (Plastic, Galva	truction Record - Scr anial anized, Steel) Slot No.	een Depth ( <i>m/ft</i> ) From To	Alteration     Construction)     Alteration     (Construction)     Abandoned,     Insufficient Supply     Abandoned, Poor     Water Quality     Abandoned, other,     reactific	Well production (Imin / GPM)         Disinfected?         Yes       No         Map of W         Please provide a map below follow	40 50 60 ell Location ing instructions of	40 50 60	
Outside Diameter (crrv/in) Cons (Plastic, Galver (Plastic, Galver	struction Record - Scr anial anized, Steel) Slot No.	een Depth ( <i>m/ft</i> ) From To	Monitoring Hole     Alteration     (Construction)     Abandoned,     Insufficient Supply     Abandoned, Poor     Water Quality     Abandoned, other,     specify	Well production ( <i>l/min / GPM</i> ) Disinfected? Yes No Map of M Please provide a map below follow	40 50 60 ell Location ing instructions of	40 50 60	t
Outside Diameter (crr/in) 2,375 Cons (Plastic, Galve (Plastic, Galve	struction Record - Scr arial anized, Steel) Slot No.	een Depth (m/ft) From To 10 29	Monitoring Hole     Monitoring Hole     Alteration     (Construction)     Abandoned,     Insufficient Supply     Abandoned, Poor     Water Quality     Abandoned, other,     specify	Well production (Imin / GPM) Disinfected? Yes No Map of M Please provide a map below follow	40 50 60 Fell Location	40 50 60	
Cons Outside Diameter (crrvin) 2:375	struction Record - Scr arial anized, Steel) Slot No.	een Depth (m/ft) From To 10	Monitoring Hole     Alteration     (Construction)     Abandoned,     Insufficient Supply     Abandoned, Poor     Water Quality     Abandoned, other,     specify     Other, specify	Well production ( <i>Vmin / GPM</i> ) Disinfected? Yes No Map of W Please provide a map below follow	40 50 60 ell Location ing instructions of	40 50 60	<b>R</b>
Outside Diameter (cm/in)     Mate (Plastic, Galves)       2.375     PW       Water found at Depth     K	struction Record - Ser anized, Steel) Slot No.	een Depth (m/ft) From To 10 25	A distribution of the distributication of the distribution of the distribution of	Well production (Imin / GPM) Disinfected? Yes No Please provide a map below follow 6	40 50 60 Ing instructions of	40 50 60	<b>*</b>
Outside Diameter (cm/in)       Mate (Plastic, Galva (Plastic, Galva)         2.375       PW         Water found at Depth (m/ft) Gas (Water found at Depth)       K		een Depth (m/ft) From To 1,0 2,9 Untested C Fror	Monitoring Hole     Monitoring Hole     Alteration     (Construction)     Abandoned,     Insufficient Supply     Abandoned, Poor     Water Quality     Abandoned, other,     specify     Other, specify      Hole Diameter     n     To     (cm/in)     Diameter	Well production ( <i>Vmin / GPM</i> ) Disinfected? Yes No Map of W Please provide a map below follow 600	40 50 60 Fell Location	40 50 60	
Outside Diameter (crr/in)       Mate (Plastic, Galva)         2.375       PW         Water found at Depth (m/ft)Gas         Water found at Depth (m/ft)Gas	struction Record - Scr         erial         nized, Steel)         Slot No.         Image: Image of Water Details         ind of Water:         Other, specify         Image: Image of Water:         Other, specify         Other, specify	een Depth (m/ft) From To 1.0 2.9 Untested C Fror Untested 0 T	Monitoring Hole     Alteration     (Construction)     Abandoned,     Insufficient Supply     Abandoned, Poor     Water Quality     Abandoned, other,     specify     Other, specify      Hole Diameter     n     To     (cm/in)     Y     4.5	Well production ( <i>l/min / GPM</i> ) Disinfected? Yes No Map of W Please provide a map below follow	40 50 60 Cell Location	40 50 60	
Outside       Mate         Diameter       (Plastic, Galva         (cm/in)       PWW         2.375       PWW         Water found at Depth       K         (m/ft)       Gas         Gas       C         Water found at Depth       K         (m/ft)       Gas	truction Record - Scr anized, Steel) Slot No.	een Depth (m/ft) From To 10 20 Untested From Untested 0 Untested 7	Monitoring Hole     Alteration     (Construction)     Abandoned,     Insufficient Supply     Abandoned, Poor     Water Quality     Abandoned, other,     specify     Other, specify      Hole Diameter     n     To     (cm/in)     J.2.2     J.2     J.2	Well production ( <i>Vmin / GPM</i> ) Disinfected? Yes No Map of W Please provide a map below follow 600	40 50 60 ing instructions of Constructions of Constructions of Constructions of Constructions of Constructions of Constructions of Constructions of Constructions of Constructions of Constructions of Constructio	40 50 60	A Dar
Outside Diameter (cm/in)       Mate (Plastic, Galva)         2:375       PUC         Water found at Depth (m/ft) □ Gas []	struction Record - Scr arial anized, Steel) Slot No. Water Details ind of Water: Fresh [ Other, specify Other, specify ind of Water: Fresh [ Other, specify Other, specify Contractor and Well	een Depth (m/ft) From To 10 29 Untested C From Untested 0 Untested 7 Untested 7	Monitoring Hole       Alteration       (Construction)       Abandoned,       Insufficient Supply       Abandoned, Poor       Water Quality       Abandoned, other,       specify       Other, specify       Other, specify       Depth (m/ft)       Diameter       Oppth (m/ft)       J.O.       J.O.       J.O.       J.O.       J.O.       J.O.       J.O.       J.O.       J.O.	Well production ( <i>Vmin / GPM</i> ) Disinfected? Yes No Map of W Please provide a map below follow	40 50 60 Ing Instructions of	40 50 60 1 the back	Por s
Outside Diameter (cm/in)       Const (Plastic, Galva)         2.375       P         Water found at Depth       K (m/ft) Gas         Water found at Depth       K         (m/ft) Gas       Well Gas	truction Record - Scr rial anized, Steel) Slot No. Water Details ind of Water: Fresh Other, specify ind of Water: Fresh Other, specify	een Depth (m/ft) From To 1.0 J.S Untested From Untested 0 Untested 7 Untested 7	Monitoring Hole     Alteration     (Construction)     Abandoned,     Insufficient Supply     Abandoned, Poor     Water Quality     Abandoned, other,     specify     Other, specify     Hole Diameter     To     (cm/in)     Y     4.5     3.0     S	Well production ( <i>Vmin / GPM</i> ) Disinfected? Yes No Map of V Please provide a map below follow 6	40 50 60 Ing instructions of S <sup>1</sup> 0	40 50 60 1 the back	A 29 million
Outside Diameter (cm/in)       Cons         2:375       Mate (Plastic, Galva (Plastic, Galva)         2:375       Mater         Water found at Depth (m/ft) Gas       Mater         Business Name of Well C       Mater         Business Address (Street)       Mater	truction Record - Scr arial anized, Steel) Slot No. Slot No.	een Depth (m/ft) From To 1.0 3.9 Untested C Fror Untested 0 Untested 7 Untested 7 Technician Inform		Well production ( <i>Vmin / GPM</i> ) Disinfected? Yes No Please provide a map below follow 600	40 50 60 Ing instructions of	40 50 60 10 10 10 10 10 10 10 10 10 10 10 10 10	Post -
Cons         Outside Diameter (cm/in)       Mate (Plastic, Galva)         2.375       PWW         Water found at Depth (m/ft) □ Gas       K         Water found at Depth (m/ft) □ Gas       K         Water found at Depth (m/ft) □ Gas       Well         Business Name of Well C       Mater         Business Address (Stree       Dag, R. Mater		een Depth (m/ft) From To 1.0 J.S Untested C Untested 0 Untested 7 Untested 7	Worktoring Hole         Alteration         (Construction)         Abandoned,         Insufficient Supply         Abandoned, Poor         Water Quality         Abandoned, other,         specify         Other, specify         Depth (m/ft)         Diameter         Depth (m/ft)         Diameter         Well Contractor's Licence No         Y         Abandoned, other,         specify         Depth (m/ft)         Diameter         Diameter         Municipality         Municipality	Well production (Imin / GPM) Disinfected? Yes No Please provide a map below follow fol	40 50 60 ing instructions of Singer	40 50 60 1 the back	A Ores
Outside Diameter (cm/in)       Cons         2.375       Mate (Plastic, Galva)         2.375       Mate (Plastic, Galva)         Water found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Business Name of Well O       Mater found (m/ft) □ Gas         Wei       Mater found at Depth (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Wei       Mater found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Wei       Mater found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Wei       Mater found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Wei       Mater found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Wei       Mater found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □ Gas         Wei       Mater found at Depth (m/ft) □ Gas       Mater found at Depth (m/ft) □	truction Record - Scr arial anized, Steel) Slot No. Water Details ind of Water: Fresh [ Other, specify ind of Water: Fresh [ Other, specify ind of Water: Fresh [ Other, specify Contractor and Well Contractor and Contractor and Well Contractor and Contractor and Well Contractor and Contractor and Con	een Depth (m/tt) From To 10 29 Untested From Untested 0 Untested 7 Untested 7 Untested 7 Echnician Inform	Worktown and the original of the original	Well production (Vmin / GPM)         Disinfected?         Yes       No         Map of W         Please provide a map below follow         600      7	40 50 60 refl Location ing instructions of contraction ing instructions of contraction con	40 50 60 10 10 10 10 10 10 10 10 10 10 10 10 10	Por s
Cons         Outside Diameter (cm/in)       Mate (Plastic, Galva)         2.375       Mut (Plastic, Galva)         Water found at Depth (m/ft)Gas         Water found at Depth (m/ft)Gas         Water found at Depth (m/ft)Gas         Water found at Depth (m/ft)Gas         Business Name of Well Gas         Meter Subject         Business Address (Stree Day L, mut Province         Pot Day L         Bus Telephone No. (inc. at		een Depth (m/ft) From To 1.0 J.S Untested C Untested 0 Untested 7 Untested 7 Technician Inform S E-mail Address/ C C O C S Technician (Last National Content of the second se	Monitoring Hole         Alteration         (Construction)         Abandoned,         Insufficient Supply         Abandoned, Poor         Water Quality         Abandoned, other,         specify         Other, specify         Depth (m/ft)         Diameter         Diameter         Depth (m/ft)         Diameter         Di	Well production (Vmin / GPM)         Disinfected?         Yes       No         Map of W         Please provide a map below follow         0	40 50 60 ell Location ing instructions or	40 50 60 1 the back	
Outside Diameter (cm/in)       Cons         2.375       Mate (Plastic, Galva)         2.375       Mate (Plastic, Galva)         Water found at Depth (m/ft) □ Gas       Mate (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mate (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mate (m/ft) □ Gas         Water found at Depth (m/ft) □ Gas       Mate         Business Name of Well O       Mate         Business Address (Stree       Mate         1 Mate       Povince       Pot         Bus Telephone No. (inc. at       Mate         1 0 5       1 4 9 1	struction Record - Scr arial anized, Steel) Slot No. Water Details ind of Water: Sresh Other, specify Other, specify Other, specify Other, specify Other, specify Other, specify Other, specify Other, specify Other, specify Contractor and Well Contractor Stal Code Hall Sciences All Sciences All Sciences Code Name of Well Contractor Code Stal Code Code Code Code Code Code Code Code	een Depth (m/tt) From To 10 29 Untested C Untested 7 Untested 7 Untested 7 Technician Inform S E-mail Addressy C C O C 2 Technician (Last National Content of the second of t	Worktown of the order of t	Well production (Vmin / GPM)         Disinfected?         Yes       No         Map of W         Please provide a map below follow         600         600         600         600         600         600         600         600         600         600         600         600         600         600         600         600         600         600         7         600         7         600         7         7         600         7 <td>40 50 60 cell Location ing instructions of cell to cation ing instructions of cell to cell to</td> <td>40 50 60 1 the back</td> <td>And And And And And And And And And And</td>	40 50 60 cell Location ing instructions of cell to cation ing instructions of cell to cell to	40 50 60 1 the back	And And And And And And And And And And
Outside Diameter (cm/in)       Cons         2:375       Mate (Plastic, Galva (Plastic, Galva (Plastic, Galva)         Water found at Depth (m/ft) Gas []         Business Name of Well []         Business Address (Stree 	struction Record - Scr         arial         anized, Steel)         Slot No.         Image: Slot No.         Water Details         ind of Water:         Other, specify         Ind of Water:         Other, specify         It Number/Narrie)         Stal Code       Business         It Number/Narrie)         Stal Code       Business         It Number/Narrie)         Stal Code       Business         Interse code)       Name of Well         Marker of Technicia	een Depth (m/ft) From To 1.0 J.C Untested C Untested 7 Untested 7 Technician Inform S E-mail Addressy C C Q C S ( Technician (Last National) Technician (Last National) Contractor	Monitoring Hole         Alteration         (Construction)         Abandoned,         Insufficient Supply         Abandoned, Poor         Water Quality         Abandoned, other,         specify         Other, specify         Depth (m/ft)         Diameter         Depth (m/ft)         Municipality         Stack         Date Submitted <t< td=""><td>Well production (Imin / GPM)         Disinfected?         Yes       No         Map of M         Please provide a map below follow         600         100      1</td><td>40 50 60 ell Location ing instructions or</td><td>40 50 60 1 the back</td><td>2 2 2 2 2 3 4 18</td></t<>	Well production (Imin / GPM)         Disinfected?         Yes       No         Map of M         Please provide a map below follow         600         100      1	40 50 60 ell Location ing instructions or	40 50 60 1 the back	2 2 2 2 2 3 4 18

7364349

<b>N</b> .			
	Ministry of the Environment,	Well Tag#: A296272 Below)	Well Record
Vr Untario	Conservation and Parks		Regulation 903 Ontario Water Resources Act
Measurements recorded	in: 🗆 Metric 🕅 Imperial	ALACTIL	5-25224 Page of

8784884 CANADA INC. C/O

Address of v	Vell Location (Street Num フィゴー ビールマー			ownsnip		LOI	0010000	Jon	
County/Dist	rict/Municipality	<u>pr j - 0-0</u>	с	ity/Town/Village	(Stiffsvilk)		Province Ontario	Postal	Code
UTM Coordi	inates Zone Easting	Northing	5034 <sup>M</sup>	lunicipal Plan and Sublot	Number	·	Other		
Overburde	n and Bedrock Materi	als/Abandonment	Sealing Reco	rd (see instructions on the	back of this form)			Dent	b (m/ff)
General Co	blour Most Com	non Material	Oth-	er Materials	Genera	al Description		From	<u> </u>
 	(appe	Sand	Gon	el S.H.	<u> </u>	1004		1	6
GRY	Clay,		इ.स	Gouel	hard	Serge		6	¥
GRY	Limeste	»nz			hard			3	20
		,							₽ 
									<u> </u>
									<u> </u>
Depth Se	et at ( <i>m/ft</i> )	Annular Space	ed	Volume Placed	After test of well yield, w	esults of We	II Yield Testi Draw Dow	ng n Re	scovery
From + 7	To	(Material and Type	<u>)</u>	(m³/ft³)	Clear and sand fro	ee	Time Water L (min) (m/fi	evel Time V ( <i>min</i> )	Water Level (m/ft)
	9 Hole	die die	1		If pumping discontinued	, give reason:	Static Level		<del>.</del>
9	20 Files	- Sand			Dump intake set at (m/	<del>7</del> )	1	1	
<u> </u>		<u> </u>					2	2	
Meth	nod of Construction		-Well Us		Pumping rate (I/min / Gł	PM)	4	4	
Cable Tol Rotary (C	ol Diamono Conventional) Utting			rcia: INOTUSED al Dewatering	Duration of pumping hrs + m	in	5	5	
Boring	Reverse) Driving		Cooling	e Air Conditioning	Final water level end of	pumping (m/ft)	10	10	
Cother, sp	recity du neut profi	Other, spec	cify		If flowing give rate (Vmir	7/GPM)	15	15	
Inside	Construction R	ecord - Casing	Depth ( <i>m/ft</i> )	Status of Well Water Supply	Recommended pump of	lepth (m/ft)	20	20	
Diameter (cm/in)	(Galvanized, Fibreglass, Concrete, Plastic, Steel)	Thickness (cm/in) Fro	m To	Replacement Well	Pecommended pump	rato	25	25	
2,067	puc	.154 +3	P	Recharge Well     Dewatering Well	(I/min_/ GPM)	ale	30	30	
				Observation and/or Monitoring Hole	Welt production (Vmin /	GPM)	50	50	
				Alteration (Construction)	Disinfected?		60	60	
and an an	Construction R	lecord - Screen	Projek 50 de 180 de	Insufficient Supply		Map of We	L		summer of the second
Outside Diameter	Material (Plastic, Galvanized, Steel)	Slot No.	Depth ( <i>m/ft</i> )	Water Quality Abandoned, other,	Please provide a map	below follown	g instructions	on the back	<sup>с</sup> 👗
(cm/in) フごづく	18 VC		⊫ <u>ເ</u>	specify	N D		~		- <b>T</b>
	4		- 0.0	Other, specify	1 76,	<u> </u>			N .
	Water De		<u>e se se s</u>	lole Diameter		- And	A.B.		/
Water foun (π	n/ft) Gas Other, sp	r:FreshUnte ecify	From	To (cm/in)			1 29		
Water foun	d at Depth Kind of Wate	r: □Fresh □Unte ecify	ested	3091.5		The second secon			ad
Water foun	d at Depth Kind of Wate	r: Fresh Unte	ested		\	\ <sup>×</sup> <u>-</u>	1	n for	
<u>{n</u>	Well Contract	or and Well Techr	 1ician Informa	tion			(awelly	: /	
Business N	lame of Well Contractor	Prilling Group		ell Contractor's Licence No. フース   イー/			(le.		
Business A	ddress (Street Number/N	ame)	M	unicipality Ile	Comments:	and C	Jaches		त
Province	Postal Code	Business E-ma	il Address	L so I com	LAF CA			Un 3	21102212222222222222222222222222222222
UN Bus.Teleph	one No. (inc. area code), N	ame of Well Technic	ian (Last Name,	First Name)	information				8146
	940791619	Mc Co	James or Contractor Da	ate Submitted	delivered Jate W	/ork Completed		1 4 2020	
<u>)</u>	077	h7	Y	YYYMMDD		20 05		ed leen's Printer #	or Ontario 2018
-0506E (2018)	(12)			Ministry's Copy			ଳ ପ୍ର	SCHOLLING TO	91 QUIQUIU, 2010

Ministry of the Environment, Conservation and Parks Measurements recorded in: Metric Imperial Metric Imperial Metric Imperial Measurements recorded in: Metric Imperial Metric								
Well Owner's Information	/ Organization	a Inc.	E-mail Address			Well Constructed by Well Owner		
Mailing Address (Street Number/Name) 7628 Flewellyn Rol Well Location	ad M	unicipality Stittsville	Province 6N	Postal Code		No. (inc. area code)		
Address of Well Location (Street Number/Name 7623 Flewallyn K620 County/District/Municipality	e) Tc	ity/Town/Village		Lot	Province Ontario	n Postal Code		
UTM Coordinates Zone Easting NAD 8 3 1 9 4 2 3 9 87	Northing $505319$	Iunicipal Plan and Sublot	Number		Other			
General Colour Most Common Mater BRN 400 Sev	rial Othe	er Materials	Gene Solution	eral Description		$\begin{array}{c c} \text{Depth} (m/ft) \\ \hline From & To \\ \hline O & .3 \\ \end{array}$		
BRN day GRY limestone	Si /		Soft Tageret			· 3/ 2.13 2.13 6./		
Depth Set at ( <i>m/ft</i> ) Type of From To ( <i>Materia</i>	ilar Space Sealant Used V and Type)	Volume Placed (m³/ft <sup>s</sup> )	After test of well yield,	Results of We water was: free	Draw Down	Recovery el Time Water Level (min) (m/t)		
0.5) congrat	e e	}	If pumping discontinue	ed, give reason:	Static Level			
Method of Construction	Well Us	e	Pump intake set at (m Pumping rate (1/min / G	νπ) 3PM)	3	3		
Cable Tool Diamond Cable Tool Cabl	Public Commer Domestic Municipa Livestock Fest Hole	rcial Not used al Dewatering e Monitoring	Duration of pumpinghrs +	min	5	5		
Boang     Digging     Digging     Air percussion     Other, specify     Construction Record	Ingation Country	Status of Well	If flowing give rate (Vm	nin / GPM)	10	10		
Inside         Open Hole OR Material         Wall           Diameter         (Galvanized, Fibreglass, (cm/in)         Thickne (cm/in)	Depth (m/ft) SS From To	Water Supply	Recommended pump	o depth ( <i>m/ft</i> )	20	20		
5.20 PUL .34		Recharge Well     Dewatering Well     Observation and/or     Monitoring Hole	(I/min / GPM) Well production (I/min	/GPM)	40	40		
		Alteration     (Construction)     Abandoned,     Insufficient Supply	Disinfected?		60	60		
Outside     Material       Diameter     (Plastic, Galvanized, Steel)       Storn     Image: Construction Record - Storn       Storn     (Plastic, Galvanized, Steel)	Screen         Depth (m/ft)           o.         From         To           3.1         6./	Abandoned, Poor Water Quality     Abandoned, other, <i>specify</i> Other, <i>specify</i>	Please provide a ma	ap below followin	ng instructions on	the back.		
Water Details         Water found at Depth       Kind of Water:         (m/ft)       Gas         Other, specify         Water found at Depth         Kind of Water:         Fre	sh Untested Dep From sh Untested O	tole Diameter th $(m/ft)$ Diameter To $(cm/in)$ 3, 1, 11, 13			10 m 2 4 m 2	nd		
( <i>m/ft</i> ) □Gas □Other, specify Water found at Depth Kind of Water: □Fre ( <i>m/ft</i> ) □Gas □Other, specify Well Contractor and V	sh Untested 3./		Daive	*	lowell'1"			
Business Address (Street Number/Name)	5000 p Mu SU	TI T	Comments:					
Province ON Bus. Telephone No. (inc. area code). Name of W 10594074107417 M	ness E-mail Address /ell Technician (Last Name, 147. J. Am K.S.	First Name)	Well owner's Date information package Y Y delivered Date	Package Deliver	ed Audit No.	istry Use Only Z338288		
Well Technician's Licence No.  Signature of Tech 0506E (2018/12)		ate Submitted 2020 09 04 Ministry's Copy		2008		)CT 0 b ZUZU		

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

### SOIL PROFILE AND TEST DATA

Geotechnical Investigation 7628 Flewellyn Road Ottawa, Ontario

DATUM Geodetic

#### REMARKS

FILE NO. PG5783

PODINCE DV Track-Mount Power Aug	)r					May 21 0	0021			H	OLE	NO	. В	H	1-21		
	НО		SAN	/IPLE				Pen	. R	esi	st.	Blo	ows	/0.3	m		D
SOIL DESCRIPTION	ATA PL	ЪЕ	BER	VERY	LUE ROD	(m)	(m)	•	5	0 m	hm	Dia	. Co	one			Uning v
	STR	ГХЛ	IMUN	ECO.	N VA OF J			0	o M	Vate	er C	con	ten	t %		Achi+	Const
GROUND SURFACE		≤ SS	1	100	50+	0-	129.19	2	0	4	0	6	0	80	)		20
and rock fragments		-	•					 									
		RC	1	100	31			 			· · · · · ·				· · · · · · · · · · · · · · · · · · ·		
		-				1-	128.19									Ē	
								 					•••••				
		RC	2	100	65			 			•••••••						
						2-	127.19	 									
		_						 	• • • • •				•••••				
		PC	2	100	100	3-	126.19	 									
<b>PEDPOCK:</b> Dear to eventiont		ΠŪ	3		100			 					••••••				
quality, grey limestone interbedded							105 10	 	·								
with grey dolostone and shale		-				4-	125.19	 									
								 • • • •			· · · · · ·						
- vertical seams from 6.45 to 6.8m and 7 7 to 8 0m depths		RC	4	100	72	_	104.10	 	•								
						5-	-124.19	 									
		_						 									
						6	100.10	 					• • • • • •				
		BC	5	100	57	0-	123.19	 									
			U					 									
						7-	122 10	 									H.
						/	122.19	 									目
								 	· · · · · ·								
		RC	6	100	68	8-	-121 19	 	· · · · ·				·····				
							121.15	 									E
		-						 			•••						E
						9-	120 19	 									E.
		RC	7	100	88		120.10	 	•								E:
								 					•••••••••••••••••••••••••••••••••••••••				目
10.06		_				10-	-119.19	 									
End of Borehole																	
												:					
								20 <u>S</u>	0 ihea	4 ar <u>S</u>	0 Stre	6 tnat	0 h (k	80 'Pa'	)	100	
								Ur	ndist	urbe	ed		Ren	noul	<b>,</b> ded		

### SOIL PROFILE AND TEST DATA

▲ Undisturbed △ Remoulded

**Geotechnical Investigation** 7628 Flewellyn Road Ottawa, Ontario

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

#### D/

REMARKS
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DATUM Geodetic									FILE N	NO.	PG578	33	
REMARKS									HOLE	NO.	оц о о		
BORINGS BY Track-Mount Power Auge	er			D	ATE	May 21, 2	021				эп 2-2		
SOIL DESCRIPTION	PLOT		SAN			DEPTH (m)	ELEV. (m)	Pen. Re ● 50	esist. 0 mm	Blow Dia. C	s/0.3m Cone		g Well ion
	<b>FRATA</b>	LYPE	JMBER	% COVERS	VALUE ROD	()	()	0 <b>N</b>	/ater C	onter	nt %		nitorin(
GROUND SURFACE	S.	5	ŊŊ	REC	z Ö		100.00	20	40	60	80	:	ŠΩ
FILL: Brown silty sand with crushed0.20		ss	1		50+	0-	-129.38						
		RC	1	100	35	1-	-128.38						
		-											
		RC	2	100	40	2-	-127.38						
		-	0	100	00	3-	-126.38						
		нс _	3	100	00	4-	-125.38						
quality, grey limestone interbedded with grey dolostone and shale		BC	Δ	100	92								
			7	100	52	5-	-124.38						
			5	100	66	6-	-123.38						
		ΠC	5	100	00	7-	-122.38						
		_					122.00						
		RC	6	100	25	8-	-121.38						
		_				9-	-120.38						
		RC	7	100	72								
End of Borehole		-				10-	-119.38						
								20 Shea	40 Ir Stre	60 ngth (	80 (kPa)	100	

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### SOIL PROFILE AND TEST DATA

Geotechnical Investigation 7628 Flewellyn Road Ottawa, Ontario

154 Colonnade Road South, Ottawa, On	tario r	(2E /J	5		Ot	tawa, Or	ntario					
DATUM Geodetic									FILE NO	PG57	'83	
REMARKS									HOLE N	0		
BORINGS BY Track-Mount Power Aug	er			D	ATE	May 25, 2	2021	1		BH 3-	21	
SOIL DESCRIPTION	PLOT		SAN	IPLE		DEPTH	ELEV.	Pen. R • 5	esist. Bl i0 mm Di	lows/0.3m a. Cone		Nell on
	RATA	ХРЕ	MBER	% OVERY	ROD	(11)	(11)		Vater Co	ntent %		itoring structi
GROUND SURFACE	E S	H	ЮN	REC	N N N		100.10	20	40	60 80	:	Mon Con
FILL: Brown silty sand with gravel 0.15		≚ SS	1	75	50+	0-	-128.16					
		RC	1	100	81	1-	-127 16					
							127.10			· · · · · · · · · · · · · · · · · · ·		
		RC	2	100	80	2-	-126.16					
						0	105 16					
		RC	3	100	80	3	-125.10					
<b>BEDROCK:</b> Good to excellent						4-	-124.16					
with grey dolostone and shale		RC	4	100	63	-	100.10					
		_				5-	-123.16					<u>աստար</u>
		PC	5	100	76	6-	-122.16			·····		
		no	5	100	70							
		_				7-	-121.16			······································		
		RC	6	100	89	8-	-120.16					
		RC	7	100	97	9-	-119.16					
<u>10.06</u>	$ \begin{array}{c} & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ \end{array} $					10-	-118.16					
End of Borenole												
								20 <b>She</b> a ▲ Undis	40 ar Streng turbed 2	<b>∔                                    </b>		)

### SOIL PROFILE AND TEST DATA

Geotechnical Investigation 7628 Flewellyn Road Ottawa, Ontario

154 Colonnade Road South, Ottawa, Ontario K2E 7J5
DATUM Geodetic

FILE NO.	
	PG5783

REMARKS BORINGS BY Track-Mount Power Auge	er			D	ATE N	Mav 25. 2	2021		HOLE N	<sup>D.</sup> BH 4-21	
SOIL DESCRIPTION	гот		SAN	IPLE		DEPTH	ELEV.	Pen. R	esist. Bl 0 mm Di	ows/0.3m	n Well
	RATA P	ХРЕ	MBER	° overy	7ALUE RQD	(m)	(m)	• 5 • v	/ater Co	ntent %	itoring <sup>v</sup> structio
GROUND SUBFACE	ST	H	ЮN	REC	N V OF			20	40	50 80	Mon Con
<b>TOPSOIL</b> 0.10	`^^^?	§ AU	1			0-	-126.71				-
GLACIAL TILL: Brown silty sand with gravel, cobbles and boulders, trace clay		≊ ∑ ss	2		50+	1-	-125.71				
End of Borehole	<u>^_^</u>	-							<u> </u>		
Practical refusal to augering at 1.22m depth											
(BH dry upon completion)											
								20 Shea ▲ Undist	40 0 ar Streng urbed ∠	50 80 1 th (kPa) Remoulded	00

### SOIL PROFILE AND TEST DATA

**Geotechnical Investigation** 7628 Flewellyn Road Ottawa, Ontario

154 Color	nade Road South, Ottawa, Ontario K2E 7J	5
DATUM	Geodetic	

FILE NO.	
	PG57

										PG	5783	
REMARKS									HOL	ENO. DU	- 01	
BORINGS BY Track-Mount Power Auge	r			D	ATE	May 25, 2	2021			БП (	<b>)-2  </b>	
		H SAMPLE			DEPTH	ELEV.	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone					
	RATA	ХРЕ	MBER MBER OVERY		ALUE ROD	(m)	(m)	• Water Content			itoring	itoring structic
GROUND SURFACE	ST	H	ŊŊ	REC	N N			20	40	60 80	) Ao	Sol
	`^^^?	S AU	1			0-	126.70					
TOPSOIL       0.10         GLACIAL TILL: Brown silty sand, some gravel, cobbles and boulders, trace clay       1.45         End of Borehole       Practical refusal to augering at 1.45m depth         (BH dry upon completion)       (BH dry upon completion)		SS SS	1	33	9	1-	-125.70					
								20 Shea	40 ar Stro	60 80 ength (kPa)	) 100 )	

#### SOIL PROFILE AND TEST DATA

100

**Geotechnical Investigation** 7628 Flewellyn Road

#### REMARKS

154 Colonnade Road South, Ottawa, Ontario K2E 7J5						Ottawa, Ontario						
DATUM Geodetic					FILE NO. PG5783			3				
REMARKS					HOLE NO.							
BORINGS BY Track-Mount Power Auger DATE May 25, 2021										Ŀ	3H 6-2	l
		SAMPLE				DEPTH	ELEV.	Pen. Resist. Blows/0.3m			Vell	
SOIL DESCRIPTION	A P		~	хх	що	(m)	(m)	• 5				
		ТҮРЕ	TYPE UMBEI		VALU F RQI			• Water Content %			onitorii onstruc	
GROUND SURFACE	S S		z	RE	z <sup>o</sup>	0	100 70	20	40	60	80	Σŭ
FILL: Brown silty sand with gravel, 0.25 trace organics TOPSOIL 0.60	$\sim$	AU AU	1 2				-126.78					
GLACIAL TILL: Brown silty sand, some gravel, cobbles and boulders,		ss	2	58	9	1-	-125.78		· · · · · · · · · · · · · · · · · · ·			
trace clay		ss	3	0	36	2-	-124.78					
End of Borehole												
Practical refusal to augering at 2.23m depth												
(BH dry upon completion)												

trace clay		ss	3	0	36							
2.23	3 \^^^^/	μ				2-	124.78					
End of Borehole												
Practical refusal to augering at 2.23m depth												
(BH dry upon completion)												
								2	0 4	06	0	80
								S ▲ U	ndisturbe	ed $\triangle$	Remc	<b>'a)</b> oulded
		1		I	I	1	1	1				



28 X 40 - PLOT ISO B1



	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 OFFICE49.9 SMBUILDING C -STAFF TRAILERS111.8 SM
	BUILDING D -VEHICLE DRAINAGE SHED91.4 SMBUILDING E -ATM14.5 SM
	BUILDING F -OFFICE81.4 SMTOTAL408.0 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 REPAIR937.0 SMTOTAL AREA PROPOSED2,945.6 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 SMBUILDING E -ATM (RELOCATED)14.5 SM
	BUILDING F-OFFICE81.4 SMTOTAL TO REMAIN237.2 SM
	ZONING INFORMATION (CITY OF OTTAWA BYLAW 2008 250)
	CURRENT ZONING DESIGNATIONS: RG1[21r] - 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 HOSPITALAGRICULTURAL USEANIMAL HOSPITALAGRICULTURAL USE
	AUTOMOBILE BODY SHOPAUTOMOBILE BODY SHOPAUTOMOBILE DEALERSHIPAUTOMOBILE DEALERSHIPANIMAL 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. KENNEL EQUESTRIAN ESTABLISHMENT 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 AGRIC., CONST. & LANDSCAPE EQUIP. & SUPPLIES)       KENNEL
	SERVICE AND REPAIR SHOP ON-FARM DIVERSIFIED USE STORAGE YARD RETIREMENT HOME TRUCK TRANSPORT TERMINAL SECONDARY DWELLING LINIT
	WAREHOUSE WASTE PROCESSING AND TRANSFER FACILITY (NON-PUTRESCIBLE)
	EXCEPTION 21R: A DETACHED DWELLING MUST BE ACCESSORY TO A PRINCIPAL LISE
	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
$\widehat{02}$	SITE, BUILDING AND ZONING INFORMATION
SP-A	of scale: N/A
	LEGEND
	PROPERTY LINE       SETBACK FOR RU AND RG1 ZONING
	BORDER OF AREA OF PROPOSED RE-ZONING         SNOW REMOVAL STORAGE
	X     FENCE       Image: Area of proposed re-zoning shown in 03/sp-a01
	EXISTING LANDSCAPE TO REMAIN
	FIRE DEPARTMENT ACCESS ZONE
	0 25m 50m 100m

SH for RASH Met U ecycling Cer

LOCATION PLAN

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	TRUE NORTH
evisio	ns
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No.	Ву	Descrip					
01	JT	ISSUED FC					
02	JT	REVISED A					
		1					

Project
CFT
ZUNING A
7628 FLEWEL
Drawing
ZONING IN
LOCATION
AND NEW
Scale
AS NOTED
Drawn
JAS/KE

hecked

Project No. 21-139

e AUGUST 2021





PROJECT NORTH tion Date R SITE PLAN APPLICATION 31 JAN 2024

R SITE PLAN APPLICATION	31 JAN 2024
ND ISSUED FOR REVIEW	15 AUG 2024

