August 17, 2022 LON-00018542-GE

Ms. Victoria Sanderson
2 Park Crescent, RR2
Poplar Hill, Ontario
N0M 2A0

Attention: Ms. Sanderson

Groundwater Analytical Evaluation
Proposed Lot Severance
2 Park Crescent, Poplar Hill, Ontario

This report presents the testing methodology and the laboratory results for the water samples taken at the subject site, located at 2 Park Crescent in Poplar Hill, Ontario. The site is bounded by residential dwellings on all sides, with Lobo Memorial Park to the southwest. An existing lot, previously occupied by a church, south of the intersection of Park Crescent and Currie Court is part of the study area and currently has no assigned municipal number. The site currently has a single residential dwelling and garage, and it is understood that the owner would like to sever off the east part of 2 Park Crescent to merge with the church lot.

On February 3 and 10, 2022, two (2) boreholes/monitoring wells were advanced at various locations at the site, using a specialist drilling subcontractor under full-time supervision of EXP geotechnical staff. The boreholes were terminated at depths of approximately 9.6 m and 11.1 m below ground surface (bgs). The locations of the boreholes are shown on **Drawing 1**, appended.

This sampling and analytical testing was undertaken to determine the background nutrient concentration of Nitrate as Nitrogen prior to lot severance. Specific test criteria consisted of analysis for Total Nitrate as Nitrogen.

Findings

Water Levels were measured during 3 events. The water level was typically in the 8.3 m to 8.4 m range below existing grade. Details are provided on the borehole logs.

On February 10th, March 7th and 29th, 2022, EXP visited the above site and sampled water from the monitoring wells. The water samples were submitted under chain of custody to a CAEAL-accredited laboratory for analytical analyses of Nitrate as Nitrogen.

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The results are summarized in the following table:

Table 1 – Nitrate as Nitrogen Concentration (mg/L)

Well ID	Date Sampled			Average
	10-Feb-2022	7-Mar-2022	29-Mar-2022	
BH1/MW	0.29	<0.10	<0.10	0.10
BH2/MW	0.25	<0.10	<0.10	0.08
Overall Average				**0.09**

Technical Comments

For a development of 5 or less lots, the Ministry of Environment, Conservation and Parks (MECP) Policy Guideline D-5-4 is typically not applicable. As an added measure, EXP has installed monitoring wells into the primary source of drinking water in the area. Based on the results of the groundwater testing program, as outlined above, the overall average Nitrate as Nitrogen concentration reading was 0.09 mg/L.

From a technical analysis standpoint, EXP has conducted a mass balance exercise to demonstrate the feasibility of the proposed development with a septic system.

Environment Canada provides a mean annual precipitation for this area of 1010 mm/year based on the London Airport weather station. Evapotranspiration is estimated at 570 mm/year based on regional stormwater balance calculations for the London area. A surplus water quantity of 440 mm/year can be deduced for the purposes of this analysis. The dilution water was discounted using an infiltration factor of 0.95. The dilution water (DW) equals:

(Precipitation – Evaporation) x Site Size x Infiltration Potential + QE.

An average background nitrate level is 0.09 mg/L based on our sampling and testing program.

The nitrate concentration at the property boundary can be computed by the following equation:

$$Co = [QE\ (NE) + DW\ (NB)]/[DW + QE]$$

Where: Co = Nitrate Concentration at the property boundary (mg/L);
NE = Nitrate Concentration of the sewage effluent (mg/L), assume 40 mg/L;
QE = Yearly volume of effluent produced (L/year) for assessment purpose, assume 365,000 L/yr x 1 new lot = 365,000 L/year;
DW = Dilution Water available (L/year) assume 1,184,280 L/yr for the total site;
NB = Background Nitrate Concentration in diluting precipitation, assume 0.09 mg/L.

Based on the above values, the computed boundary condition will be at 9.5 mg/L.

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Although it is actually the precipitation that dilutes the sewage, approval agencies may prefer to assume that the measured background concentration represents that of the diluting precipitation. For this case, 0.09 mg/L was used.

Within the Ontario Drinking Water Quality Standards under the Ontario Safe Drinking Water Act, the maximum acceptable concentration of Nitrate is set at 10 mg/L as Nitrogen. The effluent output parameter has been found in conventional septic tank out flow at concentrations of 40 mg/L, in studies conducted by MECP and available literatures.

The Nitrate concentration of 10 mg/L is treated as the boundary condition or maximum allowable limit after dilution at the site limit. The calculated Nitrate concentration at 9.5 mg/L is sufficiently less than the established boundary condition of 10 mg/L.

It is concluded that the proposed lot can sustain the proposed development. A private septic system can be installed at the site. The OBC Part 8 will apply to the installation and construction of a private septic system.

General Comments

We trust that this letter is satisfactory to your present requirements and we look forward to assisting you in the completion of this project. Should you have any questions, please contact the undersigned at your convenience.

Yours very truly,

EXP Services Inc.

Eric Buchanan, P. Eng.
Geotechnical Services

Botel Chiu, M.Eng., P. Eng.
Vice President, Earth and Environment
Southwestern Ontario

Attachments: Drawing 1 – Borehole Location Plan
Borehole Logs
Appendix A – Laboratory 'Certificate of Analysis' Reports

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-LEGEND-

BH1/MW Approximate Borehole Location

-NOTES-

1. The boundaries and soil types have been established only at test hole locations. Between test holes they are assumed and may be subject to considerable error.
2. Soil samples will be retained in storage for 3 months and then destroyed unless client advises that an extended time period is required.
3. Topsoil quantities should not be established from the information provided at the test hole locations.
4. The site plan was reproduced from Google Earth Pro and should be read in conjunction with EXP Letter Report LON-00018542-GE.

Proposed Lot Severance

2 Park Crescent, Poplar Hill, Ontario

CLIENT: Victoria Sanderson

TITLE: Borehole Location Plan

Prepared By: E.B.

Reviewed By: B.C.

EXP Services Inc.
15701 Robin's Hill Road, London, ON, N5V 0A5

DATE	APPROXIMATE SCALE	PROJECT NO.	DWG.
AUGUST 2022	1:1,000	LON-00018542-GE	1

BOREHOLE LOG

BH1/MW
Sheet 1 of 1

CLIENT **Victoria Sanderson** PROJECT NO. **LON-00018542-GE**

PROJECT **Proposed Lot Severance** DATUM

LOCATION **2 Park Crescent, Poplar Hill, ON** DATES: Boring **February 3, 2022** Water Level **May 11/22**

DEPTH (m bgs)	ELEVATION (~m)	STRATA DESCRIPTION	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm)	SAMPLES N VALUE (blows)	MOISTURE CONTENT (%)
0	0.3	**TOPSOIL** - 250 mm					
		SILTY SAND - brown, moist to wet					
5	5.5		AS	S1			12
		CLAYEY SILT - grey, trace sand, stiff, moist					
6			SS	S2	400	8	20
8			SS	S3	450	9	18
9	9.8						
10		**SAND** - brown, fine grained, trace silt, compact, wet					
11	11.1		SS	S4	450	13	21
12		**End of Borehole at 11.1 m bgs.**					

SHEAR STRENGTH
S Field Vane Test (#=Sensitivity)
Penetrometer Torvane
100 200 kPa

Atterberg Limits and Moisture
W_P W W_L
SPT N Value Dynamic Cone
10 20 30 40

NOTES

1) Borehole Log interpretation requires assistance by EXP before use by others and must be read in conjunction with EXP Report LON-00018542-GE.
2) bgs denotes below ground surface.
3) No significant methane gas concentration was detected upon completion.
4) Water Level Readings:
   Mar 7, 2022 - 8.25 m bgs
   Mar 29, 2022 - 8.35 m bgs
   May 11, 2022 - 8.38 m bgs

SAMPLE LEGEND
AS Auger Sample SS Split Spoon ST Shelby Tube
Rock Core (eg. BQ, NQ, etc.) VN Vane Sample

OTHER TESTS

G Specific Gravity	C Consolidation
H Hydrometer	CD Consolidated Drained Triaxial
S Sieve Analysis	CU Consolidated Undrained Triaxial
γ Unit Weight	UU Unconsolidated Undrained Triaxial
P Field Permeability	UC Unconfined Compression
K Lab Permeability	DS Direct Shear

WATER LEVELS
Apparent Measured Artesian (see Notes)

BOREHOLE LOG

BH2/MW
Sheet 1 of 1

CLIENT **Victoria Sanderson** PROJECT NO. **LON-00018542-GE**

PROJECT **Proposed Lot Severance** DATUM

LOCATION **2 Park Crescent, Poplar Hill, ON** DATES: Boring **February 10, 2022** Water Level **May 11/22**

DEPTH (m bgs)	ELEVATION (~m)	STRATA DESCRIPTION	STRATA PLOT	WELL LOG	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (mm)	SAMPLES N VALUE (blows)	MOISTURE CONTENT (%)	SHEAR STRENGTH / Atterberg Limits and Moisture
0	0.2	**TOPSOIL** - 200 mm								
		SILTY SAND - brown, moist to wet								
5	5.8									
6		**CLAYEY SILT** - grey, trace sand, stiff, moist								
8					SS	S1	450	11		
	8.5									
9		**SAND** - brown, fine grained, trace silt, compact, wet								
	9.6	- sandy silt lens encountered near 9.1 m bgs			SS	S2	450	24		
10		**End of Borehole at 9.6 m bgs.**								
11										
12										

SHEAR STRENGTH
S Field Vane Test (#=Sensitivity)
Penetrometer Torvane
100 200 kPa
Atterberg Limits and Moisture
W_P W W_L
SPT N Value Dynamic Cone
10 20 30 40

NOTES

1) Borehole Log interpretation requires assistance by EXP before use by others and must be read in conjunction with EXP Report LON-00018542-GE.
2) bgs denotes below ground surface.
3) No significant methane gas concentration was detected upon completion.
4) Water Level Readings:
Mar 7, 2022 - 8.33 m bgs
Mar 29, 2022 - 8.27 m bgs
May 11, 2022 - 8.29 m bgs

SAMPLE LEGEND
AS Auger Sample SS Split Spoon ST Shelby Tube
Rock Core (eg. BQ, NQ, etc.) VN Vane Sample

OTHER TESTS

G Specific Gravity	C Consolidation
H Hydrometer	CD Consolidated Drained Triaxial
S Sieve Analysis	CU Consolidated Undrained Triaxial
γ Unit Weight	UU Unconsolidated Undrained Triaxial
P Field Permeability	UC Unconfined Compression
K Lab Permeability	DS Direct Shear

WATER LEVELS
Apparent Measured Artesian (see Notes)

Appendix A – Laboratory 'Certificate of Analysis' Reports

Your Project #: 18542
Site#: 2 PARK CRESCENT
Site Location: POPLAR HILL
Your C.O.C. #: n/a

Attention: Eric Buchanan

exp Services Inc
London Branch
15701 Robin's Hill Rd
Unit 2
London, ON
CANADA N5V 0A5

Report Date: 2022/02/15
Report #: R7006129
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C237922
Received: 2022/02/10, 15:21

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2022/02/15	CAM SOP-00440	SM 23 4500-NO3I/NO2B

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Your Project #: 18542
Site#: 2 PARK CRESCENT
Site Location: POPLAR HILL
Your C.O.C. #: n/a

Attention: Eric Buchanan

exp Services Inc
London Branch
15701 Robin's Hill Rd
Unit 2
London, ON
CANADA N5V 0A5

Report Date: 2022/02/15
Report #: R7006129
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C237922
Received: 2022/02/10, 15:21

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Christine Gripton, Senior Project Manager
Email: Christine.Gripton@bureauveritas.com
Phone# (519)652-9444
==========
This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C237922
Report Date: 2022/02/15

exp Services Inc
Client Project #: 18542
Site Location: POPLAR HILL
Sampler Initials: MB

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		RVM875	RVM876		
Sampling Date		2022/02/10	2022/02/10		
COC Number		n/a	n/a		
	UNITS	BH1	BH2	RDL	QC Batch
Inorganics					
Nitrate (N)	mg/L	0.29	0.25	0.10	7832928

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C237922
Report Date: 2022/02/15

exp Services Inc
Client Project #: 18542
Site Location: POPLAR HILL
Sampler Initials: MB

TEST SUMMARY

Bureau Veritas ID: RVM875
Sample ID: BH1
Matrix: Water

Collected: 2022/02/10
Shipped:
Received: 2022/02/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	7832928	N/A	2022/02/15	Chandra Nandlal

Bureau Veritas ID: RVM876
Sample ID: BH2
Matrix: Water

Collected: 2022/02/10
Shipped:
Received: 2022/02/10

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	7832928	N/A	2022/02/15	Chandra Nandlal

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Bureau Veritas Job #: C237922
Report Date: 2022/02/15

exp Services Inc
Client Project #: 18542
Site Location: POPLAR HILL
Sampler Initials: MB

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.0°C

Results relate only to the items tested.

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Bureau Veritas Job #: C237922
Report Date: 2022/02/15

QUALITY ASSURANCE REPORT

exp Services Inc
Client Project #: 18542
Site Location: POPLAR HILL
Sampler Initials: MB

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7832928	Nitrate (N)	2022/02/15	106	80 - 120	104	80 - 120	<0.10	mg/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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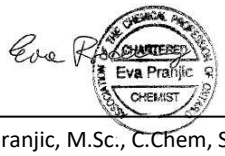
Bureau Veritas Job #: C237922
Report Date: 2022/02/15

exp Services Inc
Client Project #: 18542
Site Location: POPLAR HILL
Sampler Initials: MB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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BUREAU VERITAS

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266
CAM FCD-01191/6

REC'D IN LONDON

CHAIN OF CUSTODY RECORD 161903 Page ____ of ____

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name:	Company Name: EXP	Quotation #: 2 Park Crescent	☒ Regular TAT (5-7 days) Most analyses
Contact Name:	Contact Name: Eric Buchanan	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address:	Address:	Project #: 18542	Rush TAT (Surcharges will be applied)
Phone: Fax:	Phone: Fax:	Site Location: Poplar Hill	☐ 1 Day ☐ 2 Days ☐ 3-4 Days
Email:	Email: Eric.Buchanan@exp.com	Site #:	Date Required:
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS LABORATORIES' DRINKING WATER CHAIN OF CUSTODY		Site Location Province: ON Sampled By: Marcello B	Rush Confirmation #:

Regulation 153	Other Regulations
☐ Table 1 ☐ Res/Park ☐ Med/ Fine	☐ CCME ☐ Sanitary Sewer Bylaw
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ MISA ☐ Storm Sewer Bylaw
☐ Table 3 ☐ Agri/ Other	☐ PWQO Region
☐ Table ____	☐ Other (Specify)
FOR RSC (PLEASE CIRCLE) Y / N	☐ REG 558 (MIN. 3 DAY TAT REQUIRED)
	☐ REG 406 Table ____

Include Criteria on Certificate of Analysis: Y / N

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

Analysis Requested

	SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED (CIRCLE) Metals / Hg / CrVI	BTEX/ PHC F1	PHCs F2 - F4	VOCs	REG 153 METALS & INORGANICS	REG 153 ICPMS METALS	REG 153 METALS (Hg, Cr VI, ICPMS Metals, HWS - B)	Nitrates							HOLD- DO NOT ANALYZE
1	BH1	2022/02/10	PM	GW									X							
2	BH2	↓	↓	↓									X							
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

LABORATORY USE ONLY

CUSTODY SEAL Y / N		COOLER TEMPERATURES
Present	Intact	
N	N	8, 8, 8
N	N	1/3/3 on Ice

COOLING MEDIA PRESENT: Y / (N)

COMMENTS

10-Feb-22 15:21
Christine Gripton
C237922
RJM ENV-1569
BV JOB #

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)
Marcello B	2022/02/10		Hu Bai	2022/2/10	15:21
			DIPIKA SINGH	2022/02/11	17:35

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Bureau Veritas Laboratories' standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms available at http://www.bvlabs.com/terms-and-conditions

COC-1004 (08/19)

BH418646 White: BV Labs – Yellow: Client

Your Project #: 18542
Site Location: 2 PARK CRES
Your C.O.C. #: 868519-01-01

Attention: Eric Buchanan

exp Services Inc
London Branch
15701 Robin's Hill Rd
Unit 2
London, ON
CANADA N5V 0A5

Report Date: 2022/03/14
Report #: R7042487
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C261214
Received: 2022/03/08, 08:30

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2022/03/12	CAM SOP-00440	SM 23 4500-NO3I/NO2B

Remarks:

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All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Your Project #: 18542
Site Location: 2 PARK CRES
Your C.O.C. #: 868519-01-01

Attention: Eric Buchanan

exp Services Inc
London Branch
15701 Robin's Hill Rd
Unit 2
London, ON
CANADA N5V 0A5

Report Date: 2022/03/14
Report #: R7042487
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C261214
Received: 2022/03/08, 08:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Christine Gripton, Senior Project Manager
Email: Christine.Gripton@bureauveritas.com
Phone# (519)652-9444
==========
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Bureau Veritas Job #: C261214
Report Date: 2022/03/14

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		SAQ298	SAQ299		
Sampling Date		2022/03/07	2022/03/07		
COC Number		868519-01-01	868519-01-01		
	UNITS	MW1	MW2	RDL	QC Batch
Inorganics					
Nitrate (N)	mg/L	<0.10	<0.10	0.10	7872914

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C261214
Report Date: 2022/03/14

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

TEST SUMMARY

Bureau Veritas ID: SAQ298
Sample ID: MW1
Matrix: Water

Collected: 2022/03/07
Shipped:
Received: 2022/03/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	7872914	N/A	2022/03/12	Nimarta Singh

Bureau Veritas ID: SAQ299
Sample ID: MW2
Matrix: Water

Collected: 2022/03/07
Shipped:
Received: 2022/03/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	7872914	N/A	2022/03/12	Nimarta Singh

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C261214
Report Date: 2022/03/14

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	0.7°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C261214
Report Date: 2022/03/14

QUALITY ASSURANCE REPORT

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7872914	Nitrate (N)	2022/03/12	97	80 - 120	99	80 - 120	<0.10	mg/L	0.99	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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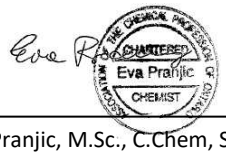
Bureau Veritas Job #: C261214
Report Date: 2022/03/14

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Bureau Veritas
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvna.com

REC'D IN LONDON

CHAIN OF CUSTODY RECORD

Page of

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#28124 exp Services Inc	Company Name:		Quotation #:	B91718	Bureau Veritas Job #:	Bottle Order #:
Attention:	Accounts Payable	Attention:	~~Kelli Dobbin~~ Eric Buchanan	P.O. #:			868519
Address:	15701 Robin's Hill Rd Unit 2	Address:		Project:	~~KCH-21008905~~ 18542	COC #:	Project Manager:
	London ON N5V 0A5			Project Name:	2 Park Cres	C#868519-01-01	Christine Gripton
Tel:	(519) 963-3000 Fax: (519) 963-1152	Tel:	Fax:	Site #:			
Email:	AP@exp.com, Karen.Burke@exp.com	Email:	~~kelli.dobbin@exp.com~~ eric.buchanan@exp.com	Sampled By:	Marcelli B		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)
- ☐ Table 1 ☐ Res/Park ☐ Medium/Fine
- ☐ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other ☐ For RSC
- ☐ Table ___

Other Regulations
- ☐ CCME ☐ Sanitary Sewer Bylaw
- ☐ Reg 558 ☐ Storm Sewer Bylaw
- ☐ MISA Municipality ___
- ☐ PWQO ☐ Reg 406 Table ___
- ☐ Other ___

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: X
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	RCAp - Comprehensive (Lab Filtered)	RCAP - Surface Water	Nitrate							# of Bottles	Comments
1		MW1	Mar/7/2022	AM	GW				X							1	
2		MW2	↓	↓	↓				X							1	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	On Ice

08-Mar-22 08:30
Christine Gripton
C261214
VBV ENV-1577

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Marcelli B / Marcelli B	22/03/07		[illegible]	2022/3/8	8:30		Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
				2022/03/08	17:30			1, 1, 0	Present		✓
									Intact		✓

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/TERMS-AND-CONDITIONS.

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** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

W# 418663

Bureau Veritas Canada (2019) Inc.

Your Project #: 18542
Site Location: 2 PARK CRES
Your C.O.C. #: 869659-01-01

Attention: Eric Buchanan

exp Services Inc
London Branch
15701 Robin's Hill Rd
Unit 2
London, ON
CANADA N5V 0A5

Report Date: 2022/04/04
Report #: R7072531
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C284106
Received: 2022/03/30, 10:35

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2022/04/04	CAM SOP-00440	SM 23 4500-NO3I/NO2B

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

Your Project #: 18542
Site Location: 2 PARK CRES
Your C.O.C. #: 869659-01-01

Attention: Eric Buchanan

exp Services Inc
London Branch
15701 Robin's Hill Rd
Unit 2
London, ON
CANADA N5V 0A5

Report Date: 2022/04/04
Report #: R7072531
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C284106
Received: 2022/03/30, 10:35

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Christine Gripton, Senior Project Manager
Email: Christine.Gripton@bureauveritas.com
Phone# (519)652-9444
==========
This report has been generated and distributed using a secure automated process.
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For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Job #: C284106
Report Date: 2022/04/04

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		SFS263	SFS264		
Sampling Date		2022/03/29	2022/03/29		
COC Number		869659-01-01	869659-01-01		
	UNITS	MW1	MW2	RDL	QC Batch
Inorganics					
Nitrate (N)	mg/L	<0.10	<0.10	0.10	7914922

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C284106
Report Date: 2022/04/04

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

TEST SUMMARY

Bureau Veritas ID: SFS263
Sample ID: MW1
Matrix: Water

Collected: 2022/03/29
Shipped:
Received: 2022/03/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	7914922	N/A	2022/04/04	Samuel Law

Bureau Veritas ID: SFS264
Sample ID: MW2
Matrix: Water

Collected: 2022/03/29
Shipped:
Received: 2022/03/30

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrate & Nitrite as Nitrogen in Water	LACH	7914922	N/A	2022/04/04	Samuel Law

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C284106
Report Date: 2022/04/04

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.7°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C284106
Report Date: 2022/04/04

QUALITY ASSURANCE REPORT

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7914922	Nitrate (N)	2022/04/04	95	80 - 120	102	80 - 120	<0.10	mg/L	0.68	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

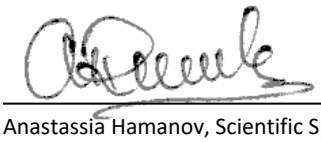
Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Bureau Veritas Job #: C284106
Report Date: 2022/04/04

exp Services Inc
Client Project #: 18542
Site Location: 2 PARK CRES
Sampler Initials: MB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist

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Bureau Veritas
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REC'D IN LONDON

CHAIN OF CUSTODY RECORD

Page of

INVOICE TO:	
Company Name:	#28124 exp Services Inc
Attention:	Accounts Payable
Address:	15701 Robin's Hill Rd Unit 2, London ON N5V 0A5
Tel:	(519) 963-3000 Fax: (519) 963-1152
Email:	AP@exp.com, Karen.Burke@exp.com

REPORT TO:	
Company Name:	
Attention:	~~Kelli Dobbin~~ Eric Buchanan
Address:	
Tel:	Fax:
Email:	~~kelli.dobbin@exp.com~~ Eric.Buchanan@exp.com

PROJECT INFORMATION:	
Quotation #:	B91718
P.O. #:	
Project:	~~KCH-00259375~~ 18542
Project Name:	2 Park Cres
Site #:	
Sampled By:	[signature]

Laboratory Use Only:	
Bureau Veritas Job #:	Bottle Order #: 869659
COC #: C#869659-01-01	Project Manager: Christine Gripton

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Reg 406 Table ___ ☐ Other

Special Instructions

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC): Field Filtered (please circle): Metals / Hg / Cr VI; RCAp - Comprehensive (Lab Filtered); RCAP - Surface Water; Lab Filtered Metals by ICPMS; Nitrate

Turnaround Time (TAT) Required: Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

#	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	RCAp - Comprehensive	RCAP - Surface Water	Lab Filtered Metals by ICPMS	Nitrate	# of Bottles	Comments
1		MW1	22/03/29	PM	GW					X	1	
2		MW2	↓	↓	↓					X	1	
3												
4												
5												
6												
7												
8												
9												
10												On Ice

30-Mar-22 10:35
Christine Gripton
C284106
ATM ENV-1736

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
[signature]	22/03/30		[signature]	2022/3/30	10:35	
			Chirag M. VIDHI BHAVE	20220330	17:35	

Time Sensitive	Laboratory Use Only: Temperature (°C) on Recei	Custody Seal	Yes	No
	4, 3, 4	Present		✓
		Intact		✓

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** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

Bureau Veritas Canada (2019) Inc.

11211 on ice # 4216 418679