Municipality of Leamington
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Municipal Stormwater Management System
033-S701
2024 Annual Report

Submitted to:
Ontario Ministry of the Environment, Conservation and Parks
April 2025

Table of Contents

Appendices

1.0 System Description

This report was prepared to summarize The Corporation of the Municipality of Leamington Municipal Stormwater Management System operations. This report is being submitted to the Ontario Ministry of the Environment, Conservation and Parks (MECP) to satisfy the requirements of the Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) 033-S701, Issue Number 2, dated July 19, 2024.

The Municipality of Leamington Stormwater Management System consists of a series of storm sewers, culverts, ditches, municipal drains, stormwater management facilities, pump stations and outlets. Stormwater management facilities include wet and dry ponds, low impact development (LID) and oil and grit separators (OGS).

Table 1 provides a summary of the stormwater management system infrastructure:

Table 1: Stormwater Management Infrastructure

Infrastructure Type	Quantity
Storm Sewers	77.9 km
Storm Forcemain	0.43
Ditches/Swales	1851.8 km
Pump Stations	3
LID Facilities	4
Wet Pond	4
Dry Pond	4
OGS	3

2.0 Monitoring Data

2.1 Stormwater Management Ponds

Leamington maintains eight (8) stormwater management ponds. Based on previous ECA monitoring requirements, sampling and analysis was only completed for the East Side Arterial Road Pond in 2024. Pond samples were collected monthly between April and November and included three (3) samples in the Sturgeon Creek (upstream of the pond outlet, at the pond outlet and downstream of the pond outlet) and three (3) samples in the pond (inlet, midpoint and outlet). 2024 data is provided in **Appendix A**.

The remaining stormwater management facilities were not sampled during the 2024 reporting period as the MECP sampling and monitoring guidance for stormwater management systems has not been released yet.

The stormwater management pond locations are shown in Figure 1.

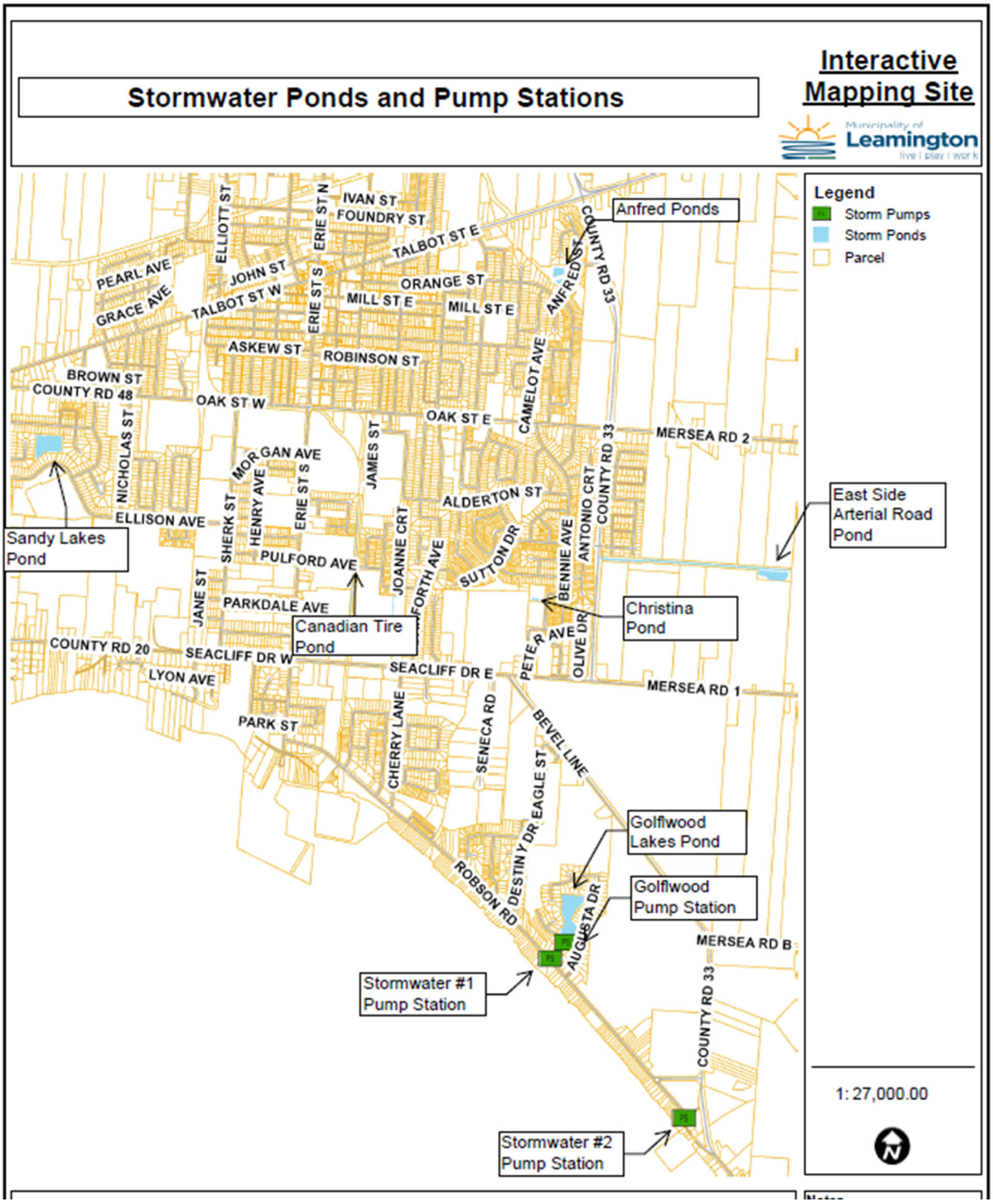

Figure 1: Stormwater Pond and Pump Station Locations

2.2 Stormwater Pump Stations

The stormwater system includes three (3) stormwater pump stations as shown in Figure 1. All storm pump stations are equipped with one submersible pump and a local control panel that communicates to the Leamington Pollution Control Centre (LPCC) via cellular network. Pump station remote monitoring includes pump status, wet well levels and alarms. No sampling was completed for the storm pump stations in 2024.

2.3 Spills

No spills were reported to MECP in 2024.

3.0 Operating Problems & Corrective Actions

There were no major operating problems in 2024. Repairs and corrective actions taken are highlighted in **Appendix D**.

4.0 Calibration, Inspection, Maintenance and Repair Summary

Calibration

There are no stormwater management monitoring instruments in place in the Municipality that require calibration. No calibration was completed in 2024.

Inspections

Stormwater management facilities, including ponds and low impact development facilities, are inspected annually. A copy of a blank inspection form and summary of inspection findings is provided in **Appendix B**.

Pump stations are inspected weekly and work orders are tracked using the *Allmax Antero* computerized maintenance program. Control panels are inspected annually. Table 2 outlines the activities performed at the pump stations on a routine basis. Example work orders are provided in **Appendix B**.

Table 2: Pump Station Inspection Activities

Inspection Type	Activities Performed
Weekly	• Visual inspection of above ground equipment, hatches, control panel, conduit, concrete, access, landscaping, etc. • Inspect, clean and operate float balls • Inspect wet well • Test run pump • Record pump hours and other data or observations

	• Check alarm log or operation history, where equipped on local HMI • Test all station alarms
Annual	• Operate valves and pump (Golfwood) • Control panel inspection by external contractor

Maintenance

The Municipality completes storm sewer flushing as required and as identified by infrastructure services inspectors. Oil grit separators and storm pump stations are cleaned annually. **Appendix C** includes a summary of 2024 maintenance activities.

Repairs

In addition to routine preventative maintenance, various repairs were completed on the linear infrastructure and pump stations in 2024. A summary of all repairs is provided in **Appendix D**.

5.0 Complaints

Complaints received online or through customer service representatives are entered and tracked through the municipal CityWorks software platform. Additional complaints received by the Infrastructure Services Inspectors are tracked separately in a Sewer Log. A copy of all 2024 complaints, including follow up actions, is provided in **Appendix E**.

6.0 Notice of Modifications to Sewage Works

No notices of modifications were made to the MECP in 2024. The 2024 stormwater system map showing all linear infrastructure is provided in **Appendix F**.

Appendix A
2024 Stormwater Pond Monitoring Data

East Side Arterial Road Pond Concentrations											
Sample Date	TSS	TDS	TP	OrthoP	NO3	NO2	NH4-N	E.Coli	Conductivity	Temp	pH
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(cfu/100mL)	(µmho/cm)	(°C)	
Pond #1 - Pond Inlet											
Apr 10, 2024	<10	570	0.017	<0.01	1.04	0.01	<0.05	8	1100	15.6	8.35
May 13, 2024	<10	365	0.028	<0.01	0.55	0.037	<0.05	370	670	18.7	8.6
Jun 4, 2024	<10	345	0.05	<0.01	0.14	<0.01	0.059	0	630	22.9	8.43
Jul 22, 2024	11	340	0.19	0.088	<0.10	<0.01	0.078	5	500	23.4	9.63
Aug 20, 2024	<10	280	0.08	0.05	<0.1	<0.01	0.057	14	510	21.2	7.67
Sep 9, 2024	<10	245	0.14	0.051	<0.10	<0.01	<0.05	15	480	19.8	7.7
Oct 7, 2024	10	305	0.12	0.035	<0.10	<0.01	<0.05	14	520	17.9	7.8
Nov 6, 2024	<10	280	0.048	0.024	<0.1	<0.01	<0.05	9	560	17.3	8.05
Pond #2 - Mid-Point of Pond											
Apr 10, 2024	<10	595	0.017	<0.01	1.03	0.011	<0.05	2	1100	15.8	8.38
May 13, 2024	<10	365	0.025	<0.01	0.57	0.042	<0.05	110	670	19.1	8.6
Jun 4, 2024	16	350	0.052	0.01	0.13	<0.01	0.097	5	630	23	8.22
Jul 22, 2024	<10	345	0.17	0.095	<0.1	<0.01	0.06	26	510	24	9.41
Aug 20, 2024	<10	265	0.1	0.066	<0.1	<0.01	0.092	12	510	21	7.74
Sep 9, 2024	<10	265	0.13	0.059	<0.1	<0.01	<0.05	5	470	19.4	7.91
Oct 7, 2024	<10	295	0.096	0.031	<0.1	<0.01	<0.05	29	520	17.6	7.79
Nov 6, 2024	<10	255	0.037	0.02	<0.1	<0.01	<0.05	110	550	17.2	8.1
Pond #3 - Pond Outlet											
Apr 10, 2024	<10	645	0.016	0.01	1.01	0.011	<0.05	1	1100	15.7	8.38
May 13, 2024	<10	355	0.027	<0.01	0.52	0.037	<0.05	17	660	19.5	8.7
Jun 4, 2024	<10	340	0.048	<0.01	0.14	0.01	0.064	1	640	22.7	8.37
Jul 22, 2024	<10	325	0.12	0.052	<0.1	<0.01	0.053	0	500	23.8	9.46
Aug 20, 2024	<10	260	0.096	0.067	<0.1	<0.01	0.063	1	510	21.4	7.63
Sep 9, 2024	<10	260	0.12	0.051	<0.1	<0.01	<0.05	6	480	19.5	7.88
Oct 7, 2024	<10	295	0.084	0.028	<0.1	<0.01	<0.05	40	530	17.9	7.63
Nov 6, 2024	<10	290	0.044	0.024	<0.1	<0.01	<0.05	14	560	17.3	8.01

Sturgeon Creek Concentrations											
Sample Date	TSS (mg/L)	TDS (mg/L)	TP (mg/L)	OrthoP (mg/L)	NO3 (mg/L)	NO2 (mg/L)	NH4-N (mg/L)	E.Coli (cfu/100mL)	Conductivity (µmho/cm)	Temp (°C)	pH
Creek #1 - Upstream of Pond Discharge											
Apr 10, 2024	<10	685	0.97	0.98	12	0.15	<0.05	260	1200	15.8	8.23
May 13, 2024	12	555	0.99	0.9	7.14	0.121	0.052	2100	970	19.2	8.4
Jun 4, 2024	18	630	3.4	3	18.1	0.226	0.074	640	1000	21.4	8.12
Jul 22, 2024	<10	890	4.9	3.8	42.2	0.079	0.073	430	1200	22	8.28
Aug 20, 2024	<10	530	3.2	3.2	11.9	0.157	0.075	630	830	19.1	8.03
Sep 9, 2024	<10	655	3.5	3.1	20.2	0.25	<0.05	1000	1000	18.4	8.28
Oct 7, 2024	<10	835	4.7	4.3	32	0.074	<0.05	440	1200	16.6	8.15
Nov 6, 2024	13	290	0.96	0.96	6.88	0.127	0.075	3500	540	18	7.82
Creek #2 - At Pond Discharge											
Apr 10, 2024	<10	655	1	0.94	12.3	0.15	<0.05	230	1200	16	8.22
May 13, 2024	11	550	1	0.89	5.81	0.117	<0.05	2400	960	19.3	8.4
Jun 4, 2024	10	625	3.4	2.9	18	0.23	0.059	550	1000	21.2	8.16
Jul 22, 2024	<10	875	4.7	3.6	41.6	0.069	0.079	1300	1200	22.2	8.41
Aug 20, 2024	30	555	3.6	3.3	11.8	0.151	0.068	540	830	18.6	8.05
Sep 9, 2024	20	685	3.8	3.3	22.6	0.257	<0.05	790	1000	18.5	8.31
Oct 7, 2024	<10	805	3.9	3.5	30.6	0.074	<0.05	360	1200	15.9	8.19
Nov 6, 2024	19	295	1	0.98	6.96	0.138	0.1	2900	540	18.3	7.82
Creek #3 - Upstream of Pond Discharge											
Apr 10, 2024	<10	645	1.1	0.97	11.8	0.145	<0.05	240	1200	16.2	8.22
May 13, 2024	40	550	1.1	0.93	6.85	0.111	0.23	780	960	19.3	8.3
Jun 4, 2024	36	610	3.3	2.9	17.5	0.218	0.083	900	1000	21	8.05
Jul 22, 2024	<10	900	3.8	2.9	40.8	0.123	0.074	210	1200	21.8	8.26
Aug 20, 2024	<10	500	3.5	3.5	11.4	0.135	0.053	290	790	18.5	7.99
Sep 9, 2024	<10	695	3.9	3.4	23.8	0.15	<0.05	280	1000	17.9	8.22
Oct 7, 2024	11	750	3.3	3.1	24.3	0.03	<0.05	130	1200	16.2	8.14
Nov 6, 2024	10	310	1	1	6.54	0.114	0.1	3400	550	18.2	7.83

Pond Sampling Comments	
Sample Date	**Comment**
Apr 10, 2024	Pond discharging 1/16 of pipe
May 13, 2024	Pond discharging 1/16 of pipe
Jun 4, 2024	Pond discharging 1/16 of pipe
Jul 22, 2024	Pond not discharging
Sep 9, 2024	Pond not discharging
Oct 7, 2024	Pond not discharging
Nov 6, 2024	Pond discharging 1/16 of pipe

Site Location: METALS
Your C.O.C. #: C#988889-01-01

Attention: Sherry Badz

The Corporation of the Municipality of Leamington
111 Erie St North
Leamington , ON
CANADA N8H 2Z9

Report Date: 2024/05/21
Report #: R8157083
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E4923
Received: 2024/05/14, 09:59

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by SIM GC/MS	1	2024/05/15	2024/05/16	CAM SOP-00301	EPA 8270 m
Mercury	6	2024/05/16	2024/05/16	CAM SOP-00453	EPA 7470A m
Mercury	2	2024/05/16	2024/05/21	CAM SOP-00453	EPA 7470A m
Total Metals Analysis by ICPMS	8	2024/05/17	2024/05/17	CAM SOP-00447	EPA 6020B m

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, EPA, APHA or the Quebec Ministry of Environment.

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.

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

Site Location: METALS
Your C.O.C. #: C#988889-01-01

Attention: Sherry Badz

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Report Date: 2024/05/21
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E4923
Received: 2024/05/14, 09:59

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Christine Gripton, Senior Project Manager
Email: Christine.Gripton@bureauveritas.com
Phone# (519)652-9444
==========
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Bureau Veritas Job #: C4E4923
Report Date: 2024/05/21

The Corporation of the Municipality of Leamington
Site Location: METALS
Sampler Initials: SS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZEA913		ZEA914	ZEA915	ZEA916	ZEA917		
Sampling Date		2024/05/13 09:30		2024/05/13 09:45	2024/05/13 10:15	2024/05/13 10:20	2024/05/13 10:25		
COC Number		C#988889-01-01		C#988889-01-01	C#988889-01-01	C#988889-01-01	C#988889-01-01		
	UNITS	INFLUENT	RDL	EFLUENT	POND #1	POND #2	POND #3	RDL	QC Batch
Metals									
Mercury (Hg)	ug/L	ND	1.5	ND	ND	ND	ND	0.10	9398314
Total Aluminum (Al)	ug/L	460	4.9	690	100	100	110	4.9	9399530
Total Antimony (Sb)	ug/L	ND	0.50	ND	ND	ND	ND	0.50	9399530
Total Arsenic (As)	ug/L	1.7	1.0	ND	1.4	1.4	1.4	1.0	9399530
Total Barium (Ba)	ug/L	58	2.0	31	30	30	30	2.0	9399530
Total Beryllium (Be)	ug/L	ND	0.40	ND	ND	ND	ND	0.40	9399530
Total Bismuth (Bi)	ug/L	2.5	1.0	ND	ND	ND	ND	1.0	9399530
Total Boron (B)	ug/L	140	10	150	38	39	39	10	9399530
Total Cadmium (Cd)	ug/L	0.36	0.090	ND	ND	ND	ND	0.090	9399530
Total Calcium (Ca)	ug/L	88000	200	74000	58000	55000	55000	200	9399530
Total Chromium (Cr)	ug/L	ND	5.0	ND	ND	ND	ND	5.0	9399530
Total Cobalt (Co)	ug/L	0.61	0.50	ND	ND	ND	ND	0.50	9399530
Total Copper (Cu)	ug/L	39	0.90	8.7	8.1	11	3.3	0.90	9399530
Total Iron (Fe)	ug/L	1200	100	ND	190	180	210	100	9399530
Total Lead (Pb)	ug/L	6.9	0.50	ND	ND	ND	ND	0.50	9399530
Total Lithium (Li)	ug/L	ND	5.0	ND	ND	ND	ND	5.0	9399530
Total Magnesium (Mg)	ug/L	16000	50	14000	16000	16000	16000	50	9399530
Total Manganese (Mn)	ug/L	290	2.0	6.8	29	24	23	2.0	9399530
Total Molybdenum (Mo)	ug/L	11	0.50	8.7	4.2	4.2	4.3	0.50	9399530
Total Nickel (Ni)	ug/L	4.8	1.0	3.1	1.1	1.1	1.2	1.0	9399530
Total Potassium (K)	ug/L	20000	200	12000	4700	4700	4600	200	9399530
Total Selenium (Se)	ug/L	ND	2.0	ND	ND	ND	ND	2.0	9399530
Total Silicon (Si)	ug/L	3500	50	2500	280	230	240	50	9399530
Total Silver (Ag)	ug/L	ND	0.090	ND	ND	ND	ND	0.090	9399530
Total Sodium (Na)	ug/L	98000	100	91000	50000	47000	47000	100	9399530
Total Strontium (Sr)	ug/L	760	1.0	720	630	600	600	1.0	9399530
Total Tellurium (Te)	ug/L	ND	1.0	ND	ND	ND	ND	1.0	9399530
Total Thallium (Tl)	ug/L	0.14	0.050	ND	ND	ND	ND	0.050	9399530
Total Tin (Sn)	ug/L	1.9	1.0	ND	ND	ND	ND	1.0	9399530
Total Titanium (Ti)	ug/L	11	5.0	ND	ND	ND	ND	5.0	9399530
Total Tungsten (W)	ug/L	ND	1.0	ND	ND	ND	ND	1.0	9399530
Total Uranium (U)	ug/L	1.6	0.10	1.1	2.0	1.9	1.9	0.10	9399530
Total Vanadium (V)	ug/L	3.7	0.50	0.52	0.96	0.87	0.90	0.50	9399530

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C4E4923
Report Date: 2024/05/21

The Corporation of the Municipality of Leamington
Site Location: METALS
Sampler Initials: SS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZEA913		ZEA914	ZEA915	ZEA916	ZEA917		
Sampling Date		2024/05/13 09:30		2024/05/13 09:45	2024/05/13 10:15	2024/05/13 10:20	2024/05/13 10:25		
COC Number		C#988889-01-01		C#988889-01-01	C#988889-01-01	C#988889-01-01	C#988889-01-01		
	UNITS	INFLUENT	RDL	EFLUENT	POND #1	POND #2	POND #3	RDL	QC Batch
Total Zinc (Zn)	ug/L	120	5.0	24	5.7	ND	ND	5.0	9399530
Total Zirconium (Zr)	ug/L	ND	1.0	ND	ND	ND	ND	1.0	9399530

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZEA918		ZEA919	ZEA920		
Sampling Date		2024/05/13 10:35		2024/05/13 10:45	2024/05/13 10:55		
COC Number		C#988889-01-01		C#988889-01-01	C#988889-01-01		
	UNITS	CREEK #1	QC Batch	CREEK #2	CREEK #3	RDL	QC Batch
Metals							
Mercury (Hg)	ug/L	ND	9398314	ND	ND	0.10	9403732
Total Aluminum (Al)	ug/L	150	9399530	110	330	4.9	9399530
Total Antimony (Sb)	ug/L	ND	9399530	ND	ND	0.50	9399530
Total Arsenic (As)	ug/L	1.7	9399530	1.8	2.0	1.0	9399530
Total Barium (Ba)	ug/L	56	9399530	57	60	2.0	9399530
Total Beryllium (Be)	ug/L	ND	9399530	ND	ND	0.40	9399530
Total Bismuth (Bi)	ug/L	ND	9399530	ND	ND	1.0	9399530
Total Boron (B)	ug/L	100	9399530	110	100	10	9399530
Total Cadmium (Cd)	ug/L	0.13	9399530	0.12	0.14	0.090	9399530
Total Calcium (Ca)	ug/L	99000	9399530	96000	100000	200	9399530
Total Chromium (Cr)	ug/L	ND	9399530	ND	ND	5.0	9399530
Total Cobalt (Co)	ug/L	1.0	9399530	1.0	1.2	0.50	9399530
Total Copper (Cu)	ug/L	6.9	9399530	11	7.7	0.90	9399530
Total Iron (Fe)	ug/L	320	9399530	300	770	100	9399530
Total Lead (Pb)	ug/L	ND	9399530	ND	0.60	0.50	9399530
Total Lithium (Li)	ug/L	ND	9399530	ND	ND	5.0	9399530
Total Magnesium (Mg)	ug/L	18000	9399530	19000	19000	50	9399530
Total Manganese (Mn)	ug/L	46	9399530	47	64	2.0	9399530
Total Molybdenum (Mo)	ug/L	19	9399530	20	20	0.50	9399530
Total Nickel (Ni)	ug/L	9.7	9399530	9.7	9.7	1.0	9399530
Total Potassium (K)	ug/L	19000	9399530	19000	19000	200	9399530
Total Selenium (Se)	ug/L	ND	9399530	ND	ND	2.0	9399530
Total Silicon (Si)	ug/L	2400	9399530	2300	2700	50	9399530
Total Silver (Ag)	ug/L	ND	9399530	ND	ND	0.090	9399530
Total Sodium (Na)	ug/L	57000	9399530	59000	57000	100	9399530
Total Strontium (Sr)	ug/L	530	9399530	540	540	1.0	9399530
Total Tellurium (Te)	ug/L	ND	9399530	ND	ND	1.0	9399530
Total Thallium (Tl)	ug/L	ND	9399530	ND	ND	0.050	9399530
Total Tin (Sn)	ug/L	ND	9399530	ND	ND	1.0	9399530
Total Titanium (Ti)	ug/L	ND	9399530	6.4	15	5.0	9399530
Total Tungsten (W)	ug/L	ND	9399530	ND	ND	1.0	9399530
Total Uranium (U)	ug/L	3.2	9399530	3.2	3.2	0.10	9399530
Total Vanadium (V)	ug/L	1.2	9399530	1.3	1.8	0.50	9399530

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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Bureau Veritas Job #: C4E4923
Report Date: 2024/05/21

The Corporation of the Municipality of Leamington
Site Location: METALS
Sampler Initials: SS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZEA918		ZEA919	ZEA920		
Sampling Date		2024/05/13 10:35		2024/05/13 10:45	2024/05/13 10:55		
COC Number		C#988889-01-01		C#988889-01-01	C#988889-01-01		
	UNITS	CREEK #1	QC Batch	CREEK #2	CREEK #3	RDL	QC Batch
Total Zinc (Zn)	ug/L	24	9399530	25	31	5.0	9399530
Total Zirconium (Zr)	ug/L	ND	9399530	ND	ND	1.0	9399530

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		ZEA914		
Sampling Date		2024/05/13 09:45		
COC Number		C#988889-01-01		
	UNITS	EFLUENT	RDL	QC Batch
Semivolatile Organics				
Bis(2-ethylhexyl)phthalate	ug/L	ND	1	9395860
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	83		9395860
2-Fluorobiphenyl	%	48 (1)		9395860
D14-Terphenyl (FS)	%	90		9395860
D5-Nitrobenzene	%	62		9395860

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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GENERAL COMMENTS

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

Package 1	6.0°C

Sample ZEA913 [INFLUENT] : Mercury Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9395860	AZ	Matrix Spike	2,4,6-Tribromophenol	2024/05/16		87	%	50 - 130
			2-Fluorobiphenyl	2024/05/16		76	%	50 - 130
			D14-Terphenyl (FS)	2024/05/16		96	%	50 - 130
			D5-Nitrobenzene	2024/05/16		81	%	50 - 130
			Bis(2-ethylhexyl)phthalate	2024/05/16		109	%	50 - 130
9395860	AZ	Spiked Blank	2,4,6-Tribromophenol	2024/05/16		91	%	50 - 130
			2-Fluorobiphenyl	2024/05/16		66	%	50 - 130
			D14-Terphenyl (FS)	2024/05/16		98	%	50 - 130
			D5-Nitrobenzene	2024/05/16		86	%	50 - 130
			Bis(2-ethylhexyl)phthalate	2024/05/16		108	%	50 - 130
9395860	AZ	Method Blank	2,4,6-Tribromophenol	2024/05/16		75	%	50 - 130
			2-Fluorobiphenyl	2024/05/16		75	%	50 - 130
			D14-Terphenyl (FS)	2024/05/16		92	%	50 - 130
			D5-Nitrobenzene	2024/05/16		82	%	50 - 130
			Bis(2-ethylhexyl)phthalate	2024/05/16	ND,RDL=1		ug/L	
9395860	AZ	RPD	Bis(2-ethylhexyl)phthalate	2024/05/16	NC		%	30
9398314	GR1	Matrix Spike	Mercury (Hg)	2024/05/16		85	%	75 - 125
9398314	GR1	Spiked Blank	Mercury (Hg)	2024/05/16		95	%	80 - 120
9398314	GR1	Method Blank	Mercury (Hg)	2024/05/16	ND, RDL=0.10		ug/L	
9398314	GR1	RPD	Mercury (Hg)	2024/05/16	NC		%	20
9399530	ADA	Matrix Spike	Total Aluminum (Al)	2024/05/17		90	%	80 - 120
			Total Antimony (Sb)	2024/05/17		102	%	80 - 120
			Total Arsenic (As)	2024/05/17		100	%	80 - 120
			Total Barium (Ba)	2024/05/17		98	%	80 - 120
			Total Beryllium (Be)	2024/05/17		103	%	80 - 120
			Total Bismuth (Bi)	2024/05/17		89	%	80 - 120
			Total Boron (B)	2024/05/17		102	%	80 - 120
			Total Cadmium (Cd)	2024/05/17		98	%	80 - 120
			Total Calcium (Ca)	2024/05/17		NC	%	80 - 120
			Total Chromium (Cr)	2024/05/17		100	%	80 - 120
			Total Cobalt (Co)	2024/05/17		97	%	80 - 120
			Total Copper (Cu)	2024/05/17		100	%	80 - 120
			Total Iron (Fe)	2024/05/17		97	%	80 - 120
			Total Lead (Pb)	2024/05/17		92	%	80 - 120
			Total Lithium (Li)	2024/05/17		102	%	80 - 120
			Total Magnesium (Mg)	2024/05/17		95	%	80 - 120
			Total Manganese (Mn)	2024/05/17		95	%	80 - 120
			Total Molybdenum (Mo)	2024/05/17		107	%	80 - 120
			Total Nickel (Ni)	2024/05/17		93	%	80 - 120
			Total Potassium (K)	2024/05/17		95	%	80 - 120
			Total Selenium (Se)	2024/05/17		99	%	80 - 120
			Total Silicon (Si)	2024/05/17		95	%	80 - 120
			Total Silver (Ag)	2024/05/17		94	%	80 - 120
			Total Sodium (Na)	2024/05/17		NC	%	80 - 120
			Total Strontium (Sr)	2024/05/17		92	%	80 - 120
			Total Tellurium (Te)	2024/05/17		93	%	80 - 120
			Total Thallium (Tl)	2024/05/17		94	%	80 - 120
			Total Tin (Sn)	2024/05/17		101	%	80 - 120
			Total Titanium (Ti)	2024/05/17		96	%	80 - 120
			Total Tungsten (W)	2024/05/17		101	%	80 - 120
			Total Uranium (U)	2024/05/17		95	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Vanadium (V)	2024/05/17		95	%	80 - 120
			Total Zinc (Zn)	2024/05/17		97	%	80 - 120
			Total Zirconium (Zr)	2024/05/17		99	%	80 - 120
9399530	ADA	Spiked Blank	Total Aluminum (Al)	2024/05/17		91	%	80 - 120
			Total Antimony (Sb)	2024/05/17		99	%	80 - 120
			Total Arsenic (As)	2024/05/17		96	%	80 - 120
			Total Barium (Ba)	2024/05/17		96	%	80 - 120
			Total Beryllium (Be)	2024/05/17		102	%	80 - 120
			Total Bismuth (Bi)	2024/05/17		91	%	80 - 120
			Total Boron (B)	2024/05/17		100	%	80 - 120
			Total Cadmium (Cd)	2024/05/17		96	%	80 - 120
			Total Calcium (Ca)	2024/05/17		95	%	80 - 120
			Total Chromium (Cr)	2024/05/17		96	%	80 - 120
			Total Cobalt (Co)	2024/05/17		93	%	80 - 120
			Total Copper (Cu)	2024/05/17		99	%	80 - 120
			Total Iron (Fe)	2024/05/17		96	%	80 - 120
			Total Lead (Pb)	2024/05/17		94	%	80 - 120
			Total Lithium (Li)	2024/05/17		97	%	80 - 120
			Total Magnesium (Mg)	2024/05/17		94	%	80 - 120
			Total Manganese (Mn)	2024/05/17		95	%	80 - 120
			Total Molybdenum (Mo)	2024/05/17		100	%	80 - 120
			Total Nickel (Ni)	2024/05/17		91	%	80 - 120
			Total Potassium (K)	2024/05/17		99	%	80 - 120
			Total Selenium (Se)	2024/05/17		99	%	80 - 120
			Total Silicon (Si)	2024/05/17		91	%	80 - 120
			Total Silver (Ag)	2024/05/17		95	%	80 - 120
			Total Sodium (Na)	2024/05/17		92	%	80 - 120
			Total Strontium (Sr)	2024/05/17		89	%	80 - 120
			Total Tellurium (Te)	2024/05/17		97	%	80 - 120
			Total Thallium (Tl)	2024/05/17		97	%	80 - 120
			Total Tin (Sn)	2024/05/17		98	%	80 - 120
			Total Titanium (Ti)	2024/05/17		93	%	80 - 120
			Total Tungsten (W)	2024/05/17		99	%	80 - 120
			Total Uranium (U)	2024/05/17		89	%	80 - 120
			Total Vanadium (V)	2024/05/17		91	%	80 - 120
			Total Zinc (Zn)	2024/05/17		95	%	80 - 120
			Total Zirconium (Zr)	2024/05/17		96	%	80 - 120
9399530	ADA	Method Blank	Total Aluminum (Al)	2024/05/17	ND, RDL=4.9		ug/L	
			Total Antimony (Sb)	2024/05/17	ND, RDL=0.50		ug/L	
			Total Arsenic (As)	2024/05/17	ND, RDL=1.0		ug/L	
			Total Barium (Ba)	2024/05/17	ND, RDL=2.0		ug/L	
			Total Beryllium (Be)	2024/05/17	ND, RDL=0.40		ug/L	
			Total Bismuth (Bi)	2024/05/17	ND, RDL=1.0		ug/L	
			Total Boron (B)	2024/05/17	ND, RDL=10		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Cadmium (Cd)	2024/05/17	ND, RDL=0.090		ug/L	
			Total Calcium (Ca)	2024/05/17	ND, RDL=200		ug/L	
			Total Chromium (Cr)	2024/05/17	ND, RDL=5.0		ug/L	
			Total Cobalt (Co)	2024/05/17	ND, RDL=0.50		ug/L	
			Total Copper (Cu)	2024/05/17	ND, RDL=0.90		ug/L	
			Total Iron (Fe)	2024/05/17	ND, RDL=100		ug/L	
			Total Lead (Pb)	2024/05/17	ND, RDL=0.50		ug/L	
			Total Lithium (Li)	2024/05/17	ND, RDL=5.0		ug/L	
			Total Magnesium (Mg)	2024/05/17	ND, RDL=50		ug/L	
			Total Manganese (Mn)	2024/05/17	ND, RDL=2.0		ug/L	
			Total Molybdenum (Mo)	2024/05/17	ND, RDL=0.50		ug/L	
			Total Nickel (Ni)	2024/05/17	ND, RDL=1.0		ug/L	
			Total Potassium (K)	2024/05/17	ND, RDL=200		ug/L	
			Total Selenium (Se)	2024/05/17	ND, RDL=2.0		ug/L	
			Total Silicon (Si)	2024/05/17	ND, RDL=50		ug/L	
			Total Silver (Ag)	2024/05/17	ND, RDL=0.090		ug/L	
			Total Sodium (Na)	2024/05/17	ND, RDL=100		ug/L	
			Total Strontium (Sr)	2024/05/17	ND, RDL=1.0		ug/L	
			Total Tellurium (Te)	2024/05/17	ND, RDL=1.0		ug/L	
			Total Thallium (Tl)	2024/05/17	ND, RDL=0.050		ug/L	
			Total Tin (Sn)	2024/05/17	ND, RDL=1.0		ug/L	
			Total Titanium (Ti)	2024/05/17	ND, RDL=5.0		ug/L	
			Total Tungsten (W)	2024/05/17	ND, RDL=1.0		ug/L	
			Total Uranium (U)	2024/05/17	ND, RDL=0.10		ug/L	
			Total Vanadium (V)	2024/05/17	ND, RDL=0.50		ug/L	
			Total Zinc (Zn)	2024/05/17	ND, RDL=5.0		ug/L	
			Total Zirconium (Zr)	2024/05/17	ND, RDL=1.0		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9399530	ADA	RPD	Total Aluminum (Al)	2024/05/17	19		%	20
			Total Antimony (Sb)	2024/05/17	NC		%	20
			Total Arsenic (As)	2024/05/17	NC		%	20
			Total Cadmium (Cd)	2024/05/17	NC		%	20
			Total Chromium (Cr)	2024/05/17	NC		%	20
			Total Cobalt (Co)	2024/05/17	NC		%	20
			Total Copper (Cu)	2024/05/17	4.2		%	20
			Total Iron (Fe)	2024/05/17	3.0		%	20
			Total Lead (Pb)	2024/05/17	NC		%	20
			Total Manganese (Mn)	2024/05/17	4.7		%	20
			Total Molybdenum (Mo)	2024/05/17	1.8		%	20
			Total Nickel (Ni)	2024/05/17	6.9		%	20
			Total Selenium (Se)	2024/05/17	NC		%	20
			Total Zinc (Zn)	2024/05/17	5.7		%	20
9403732	GR1	Matrix Spike	Mercury (Hg)	2024/05/21		97	%	75 - 125
9403732	GR1	Spiked Blank	Mercury (Hg)	2024/05/21		97	%	80 - 120
9403732	GR1	Method Blank	Mercury (Hg)	2024/05/21	ND, RDL=0.10		ug/L	
9403732	GR1	RPD	Mercury (Hg)	2024/05/21	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.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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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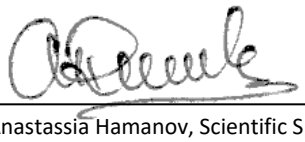
VALIDATION SIGNATURE PAGE

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



Anastassia Hamanov, Scientific Specialist

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Your Project #: Pond Spring/Fall Metals
Site Location: Leamington PCC
Your C.O.C. #: 1004888-01-01

Attention: Sherry Badz

The Corporation of the Municipality of Leamington
111 Erie St North
Leamington , ON
CANADA N8H 2Z9

Report Date: 2024/08/27
Report #: R8295802
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4P9454
Received: 2024/08/21, 10:38

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by SIM GC/MS	1	2024/08/22	2024/08/22	CAM SOP-00301	EPA 8270 m
Mercury	6	2024/08/22	2024/08/22	CAM SOP-00453	EPA 7470A m
Mercury	2	2024/08/26	2024/08/26	CAM SOP-00453	EPA 7470A m
Total Metals Analysis by ICPMS	8	2024/08/26	2024/08/27	CAM SOP-00447	EPA 6020B m

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, EPA, APHA or the Quebec Ministry of Environment.

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.

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Your Project #: Pond Spring/Fall Metals
Site Location: Leamington PCC
Your C.O.C. #: 1004888-01-01

Attention: Sherry Badz

The Corporation of the Municipality of Leamington
111 Erie St North
Leamington , ON
CANADA N8H 2Z9

Report Date: 2024/08/27
Report #: R8295802
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4P9454
Received: 2024/08/21, 10:38

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Colby Coutu, Project Manager
Email: Colby.Coutu@bureauveritas.com
Phone# (905)817-5844

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AAOC49	AAOC50		AAOC51	AAOC56	AAOC52		
Sampling Date		2024/08/20 07:30	2024/08/20 06:00		2024/08/20 09:00	2024/08/20 09:05	2024/08/20 09:10		
COC Number		1004888-01-01	1004888-01-01		1004888-01-01	1004888-01-01	1004888-01-01		
	UNITS	EFFLUENT	INFLUENT	QC Batch	POND #1	POND #2	POND #3	RDL	QC Batch
Metals									
Mercury (Hg)	ug/L	ND	ND	9599292	ND	ND	ND	0.10	9592632
Total Aluminum (Al)	ug/L	240	2800	9599698	53	110	13	4.9	9599698
Total Antimony (Sb)	ug/L	ND	ND	9599698	ND	ND	ND	0.50	9599698
Total Arsenic (As)	ug/L	ND	2.7	9599698	2.5	3.1	2.7	1.0	9599698
Total Barium (Ba)	ug/L	21	42	9599698	27	49	26	2.0	9599698
Total Beryllium (Be)	ug/L	ND	ND	9599698	ND	ND	ND	0.40	9599698
Total Bismuth (Bi)	ug/L	ND	ND	9599698	ND	ND	ND	1.0	9599698
Total Boron (B)	ug/L	67	41	9599698	39	100	41	10	9599698
Total Cadmium (Cd)	ug/L	ND	0.25	9599698	ND	0.11	ND	0.090	9599698
Total Calcium (Ca)	ug/L	50000	46000	9599698	40000	81000	41000	200	9599698
Total Chromium (Cr)	ug/L	ND	5.3	9599698	ND	ND	ND	5.0	9599698
Total Cobalt (Co)	ug/L	ND	2.3	9599698	ND	1.5	ND	0.50	9599698
Total Copper (Cu)	ug/L	8.7	25	9599698	3.3	7.2	1.3	0.90	9599698
Total Iron (Fe)	ug/L	ND	4700	9599698	160	310	ND	100	9599698
Total Lead (Pb)	ug/L	ND	4.7	9599698	ND	ND	ND	0.50	9599698
Total Lithium (Li)	ug/L	ND	ND	9599698	ND	ND	ND	5.0	9599698
Total Magnesium (Mg)	ug/L	11000	12000	9599698	14000	17000	15000	50	9599698
Total Manganese (Mn)	ug/L	6.5	290	9599698	75	21	67	2.0	9599698
Total Molybdenum (Mo)	ug/L	4.7	2.2	9599698	3.3	27	2.8	0.50	9599698
Total Nickel (Ni)	ug/L	1.7	6.3	9599698	ND	11	ND	1.0	9599698
Total Potassium (K)	ug/L	26000	28000	9599698	2700	34000	2700	200	9599698
Total Selenium (Se)	ug/L	ND	ND	9599698	ND	ND	ND	2.0	9599698
Total Silicon (Si)	ug/L	1900	4800	9599698	190	4000	160	50	9599698
Total Silver (Ag)	ug/L	ND	ND	9599698	ND	ND	ND	0.090	9599698
Total Sodium (Na)	ug/L	42000	36000	9599698	45000	50000	47000	100	9599698
Total Strontium (Sr)	ug/L	330	310	9599698	550	570	560	1.0	9599698
Total Tellurium (Te)	ug/L	ND	ND	9599698	ND	ND	ND	1.0	9599698
Total Thallium (Tl)	ug/L	ND	ND	9599698	ND	ND	ND	0.050	9599698
Total Tin (Sn)	ug/L	ND	2.3	9599698	ND	ND	ND	1.0	9599698
Total Titanium (Ti)	ug/L	ND	63	9599698	ND	ND	ND	5.0	9599698
Total Tungsten (W)	ug/L	ND	ND	9599698	ND	ND	ND	1.0	9599698
Total Uranium (U)	ug/L	0.20	0.81	9599698	0.63	2.3	0.53	0.10	9599698
Total Vanadium (V)	ug/L	1.1	6.7	9599698	0.96	2.1	0.90	0.50	9599698
Total Zinc (Zn)	ug/L	14	72	9599698	ND	42	ND	5.0	9599698

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AAOC49	AAOC50		AAOC51	AAOC56	AAOC52		
Sampling Date		2024/08/20 07:30	2024/08/20 06:00		2024/08/20 09:00	2024/08/20 09:05	2024/08/20 09:10		
COC Number		1004888-01-01	1004888-01-01		1004888-01-01	1004888-01-01	1004888-01-01		
	UNITS	**EFFLUENT**	**INFLUENT**	**QC Batch**	**POND #1**	**POND #2**	**POND #3**	**RDL**	**QC Batch**
Total Zirconium (Zr)	ug/L	ND	ND	9599698	ND	ND	ND	1.0	9599698

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AAOC53	AAOC54	AAOC55		
Sampling Date		2024/08/20 09:20	2024/08/20 09:30	2024/08/20 09:35		
COC Number		1004888-01-01	1004888-01-01	1004888-01-01		
	UNITS	CREEK #1	CREEK #2	CREEK #3	RDL	QC Batch
Metals						
Mercury (Hg)	ug/L	ND	ND	ND	0.10	9592632
Total Aluminum (Al)	ug/L	57	130	100	4.9	9599698
Total Antimony (Sb)	ug/L	ND	ND	ND	0.50	9599698
Total Arsenic (As)	ug/L	2.8	3.0	2.9	1.0	9599698
Total Barium (Ba)	ug/L	27	49	45	2.0	9599698
Total Beryllium (Be)	ug/L	ND	ND	ND	0.40	9599698
Total Bismuth (Bi)	ug/L	ND	ND	ND	1.0	9599698
Total Boron (B)	ug/L	39	100	94	10	9599698
Total Cadmium (Cd)	ug/L	ND	0.11	0.12	0.090	9599698
Total Calcium (Ca)	ug/L	39000	81000	78000	200	9599698
Total Chromium (Cr)	ug/L	ND	ND	ND	5.0	9599698
Total Cobalt (Co)	ug/L	ND	1.5	1.4	0.50	9599698
Total Copper (Cu)	ug/L	1.5	7.6	8.7	0.90	9599698
Total Iron (Fe)	ug/L	140	390	320	100	9599698
Total Lead (Pb)	ug/L	ND	ND	ND	0.50	9599698
Total Lithium (Li)	ug/L	ND	ND	ND	5.0	9599698
Total Magnesium (Mg)	ug/L	14000	17000	16000	50	9599698
Total Manganese (Mn)	ug/L	66	23	13	2.0	9599698
Total Molybdenum (Mo)	ug/L	3.2	27	26	0.50	9599698
Total Nickel (Ni)	ug/L	ND	12	11	1.0	9599698
Total Potassium (K)	ug/L	2800	33000	31000	200	9599698
Total Selenium (Se)	ug/L	ND	ND	ND	2.0	9599698
Total Silicon (Si)	ug/L	240	3900	3700	50	9599698
Total Silver (Ag)	ug/L	ND	ND	ND	0.090	9599698
Total Sodium (Na)	ug/L	47000	50000	48000	100	9599698
Total Strontium (Sr)	ug/L	550	570	560	1.0	9599698
Total Tellurium (Te)	ug/L	ND	ND	ND	1.0	9599698
Total Thallium (Tl)	ug/L	ND	ND	ND	0.050	9599698
Total Tin (Sn)	ug/L	ND	ND	ND	1.0	9599698
Total Titanium (Ti)	ug/L	ND	ND	ND	5.0	9599698
Total Tungsten (W)	ug/L	ND	ND	ND	1.0	9599698
Total Uranium (U)	ug/L	0.58	2.3	2.0	0.10	9599698
Total Vanadium (V)	ug/L	0.99	2.3	2.0	0.50	9599698

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AAOC53	AAOC54	AAOC55		
Sampling Date		2024/08/20 09:20	2024/08/20 09:30	2024/08/20 09:35		
COC Number		1004888-01-01	1004888-01-01	1004888-01-01		
	UNITS	CREEK #1	CREEK #2	CREEK #3	RDL	QC Batch
Total Zinc (Zn)	ug/L	ND	43	45	5.0	9599698
Total Zirconium (Zr)	ug/L	ND	ND	ND	1.0	9599698

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		AAOC49		
Sampling Date		2024/08/20 07:30		
COC Number		1004888-01-01		
	UNITS	**EFFLUENT**	**RDL**	**QC Batch**
Semivolatile Organics				
Bis(2-ethylhexyl)phthalate	ug/L	ND	1	9592140
Surrogate Recovery (%)				
D14-Terphenyl (FS)	%	84		9592140

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

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GENERAL COMMENTS

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

Package 1	8.3°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9592140	AZ	Matrix Spike [AAOC49-01]	D14-Terphenyl (FS)	2024/08/22		95	%	50 - 130
			Bis(2-ethylhexyl)phthalate	2024/08/22		103	%	50 - 130
9592140	AZ	Spiked Blank	D14-Terphenyl (FS)	2024/08/22		100	%	50 - 130
			Bis(2-ethylhexyl)phthalate	2024/08/22		109	%	50 - 130
9592140	AZ	RPD	Bis(2-ethylhexyl)phthalate	2024/08/22	4.7		%	30
9592140	AZ	Method Blank	D14-Terphenyl (FS)	2024/08/22		96	%	50 - 130
			Bis(2-ethylhexyl)phthalate	2024/08/22	ND,RDL=1		ug/L	
9592632	ANF	Matrix Spike	Mercury (Hg)	2024/08/22		98	%	75 - 125
9592632	ANF	Spiked Blank	Mercury (Hg)	2024/08/22		96	%	80 - 120
9592632	ANF	Method Blank	Mercury (Hg)	2024/08/22	ND, RDL=0.10		ug/L	
9592632	ANF	RPD	Mercury (Hg)	2024/08/22	NC		%	20
9599292	MPJ	Matrix Spike [AAOC49-03]	Mercury (Hg)	2024/08/26		100	%	75 - 125
9599292	MPJ	Spiked Blank	Mercury (Hg)	2024/08/26		97	%	80 - 120
9599292	MPJ	Method Blank	Mercury (Hg)	2024/08/26	ND, RDL=0.10		ug/L	
9599292	MPJ	RPD [AAOC49-03]	Mercury (Hg)	2024/08/26	NC		%	20
9599698	AFZ	Matrix Spike [AAOC51-01]	Total Aluminum (Al)	2024/08/27		118	%	80 - 120
			Total Antimony (Sb)	2024/08/27		110	%	80 - 120
			Total Arsenic (As)	2024/08/27		101	%	80 - 120
			Total Barium (Ba)	2024/08/27		97	%	80 - 120
			Total Beryllium (Be)	2024/08/27		99	%	80 - 120
			Total Bismuth (Bi)	2024/08/27		94	%	80 - 120
			Total Boron (B)	2024/08/27		97	%	80 - 120
			Total Cadmium (Cd)	2024/08/27		100	%	80 - 120
			Total Calcium (Ca)	2024/08/27		NC	%	80 - 120
			Total Chromium (Cr)	2024/08/27		101	%	80 - 120
			Total Cobalt (Co)	2024/08/27		99	%	80 - 120
			Total Copper (Cu)	2024/08/27		104	%	80 - 120
			Total Iron (Fe)	2024/08/27		102	%	80 - 120
			Total Lead (Pb)	2024/08/27		97	%	80 - 120
			Total Lithium (Li)	2024/08/27		103	%	80 - 120
			Total Magnesium (Mg)	2024/08/27		101	%	80 - 120
			Total Manganese (Mn)	2024/08/27		99	%	80 - 120
			Total Molybdenum (Mo)	2024/08/27		105	%	80 - 120
			Total Nickel (Ni)	2024/08/27		97	%	80 - 120
			Total Potassium (K)	2024/08/27		104	%	80 - 120
			Total Selenium (Se)	2024/08/27		102	%	80 - 120
			Total Silicon (Si)	2024/08/27		101	%	80 - 120
			Total Silver (Ag)	2024/08/27		99	%	80 - 120
			Total Sodium (Na)	2024/08/27		NC	%	80 - 120
			Total Strontium (Sr)	2024/08/27		NC	%	80 - 120
			Total Tellurium (Te)	2024/08/27		100	%	80 - 120
			Total Thallium (Tl)	2024/08/27		97	%	80 - 120
			Total Tin (Sn)	2024/08/27		104	%	80 - 120
			Total Titanium (Ti)	2024/08/27		99	%	80 - 120
			Total Tungsten (W)	2024/08/27		100	%	80 - 120
			Total Uranium (U)	2024/08/27		100	%	80 - 120
			Total Vanadium (V)	2024/08/27		102	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Zinc (Zn)	2024/08/27		100	%	80 - 120
			Total Zirconium (Zr)	2024/08/27		108	%	80 - 120
9599698	AFZ	Spiked Blank	Total Aluminum (Al)	2024/08/27		99	%	80 - 120
			Total Antimony (Sb)	2024/08/27		110	%	80 - 120
			Total Arsenic (As)	2024/08/27		102	%	80 - 120
			Total Barium (Ba)	2024/08/27		98	%	80 - 120
			Total Beryllium (Be)	2024/08/27		100	%	80 - 120
			Total Bismuth (Bi)	2024/08/27		97	%	80 - 120
			Total Boron (B)	2024/08/27		96	%	80 - 120
			Total Cadmium (Cd)	2024/08/27		101	%	80 - 120
			Total Calcium (Ca)	2024/08/27		104	%	80 - 120
			Total Chromium (Cr)	2024/08/27		101	%	80 - 120
			Total Cobalt (Co)	2024/08/27		100	%	80 - 120
			Total Copper (Cu)	2024/08/27		104	%	80 - 120
			Total Iron (Fe)	2024/08/27		103	%	80 - 120
			Total Lead (Pb)	2024/08/27		99	%	80 - 120
			Total Lithium (Li)	2024/08/27		103	%	80 - 120
			Total Magnesium (Mg)	2024/08/27		103	%	80 - 120
			Total Manganese (Mn)	2024/08/27		100	%	80 - 120
			Total Molybdenum (Mo)	2024/08/27		104	%	80 - 120
			Total Nickel (Ni)	2024/08/27		99	%	80 - 120
			Total Potassium (K)	2024/08/27		105	%	80 - 120
			Total Selenium (Se)	2024/08/27		102	%	80 - 120
			Total Silicon (Si)	2024/08/27		101	%	80 - 120
			Total Silver (Ag)	2024/08/27		98	%	80 - 120
			Total Sodium (Na)	2024/08/27		105	%	80 - 120
			Total Strontium (Sr)	2024/08/27		101	%	80 - 120
			Total Tellurium (Te)	2024/08/27		102	%	80 - 120
			Total Thallium (Tl)	2024/08/27		99	%	80 - 120
			Total Tin (Sn)	2024/08/27		103	%	80 - 120
			Total Titanium (Ti)	2024/08/27		98	%	80 - 120
			Total Tungsten (W)	2024/08/27		100	%	80 - 120
			Total Uranium (U)	2024/08/27		99	%	80 - 120
			Total Vanadium (V)	2024/08/27		102	%	80 - 120
			Total Zinc (Zn)	2024/08/27		102	%	80 - 120
			Total Zirconium (Zr)	2024/08/27		109	%	80 - 120
9599698	AFZ	Method Blank	Total Aluminum (Al)	2024/08/27	ND, RDL=4.9		ug/L	
			Total Antimony (Sb)	2024/08/27	ND, RDL=0.50		ug/L	
			Total Arsenic (As)	2024/08/27	ND, RDL=1.0		ug/L	
			Total Barium (Ba)	2024/08/27	ND, RDL=2.0		ug/L	
			Total Beryllium (Be)	2024/08/27	ND, RDL=0.40		ug/L	
			Total Bismuth (Bi)	2024/08/27	ND, RDL=1.0		ug/L	
			Total Boron (B)	2024/08/27	ND, RDL=10		ug/L	
			Total Cadmium (Cd)	2024/08/27	ND, RDL=0.090		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Calcium (Ca)	2024/08/27	ND, RDL=200		ug/L	
			Total Chromium (Cr)	2024/08/27	ND, RDL=5.0		ug/L	
			Total Cobalt (Co)	2024/08/27	ND, RDL=0.50		ug/L	
			Total Copper (Cu)	2024/08/27	ND, RDL=0.90		ug/L	
			Total Iron (Fe)	2024/08/27	ND, RDL=100		ug/L	
			Total Lead (Pb)	2024/08/27	ND, RDL=0.50		ug/L	
			Total Lithium (Li)	2024/08/27	ND, RDL=5.0		ug/L	
			Total Magnesium (Mg)	2024/08/27	ND, RDL=50		ug/L	
			Total Manganese (Mn)	2024/08/27	ND, RDL=2.0		ug/L	
			Total Molybdenum (Mo)	2024/08/27	ND, RDL=0.50		ug/L	
			Total Nickel (Ni)	2024/08/27	ND, RDL=1.0		ug/L	
			Total Potassium (K)	2024/08/27	ND, RDL=200		ug/L	
			Total Selenium (Se)	2024/08/27	ND, RDL=2.0		ug/L	
			Total Silicon (Si)	2024/08/27	ND, RDL=50		ug/L	
			Total Silver (Ag)	2024/08/27	ND, RDL=0.090		ug/L	
			Total Sodium (Na)	2024/08/27	ND, RDL=100		ug/L	
			Total Strontium (Sr)	2024/08/27	ND, RDL=1.0		ug/L	
			Total Tellurium (Te)	2024/08/27	ND, RDL=1.0		ug/L	
			Total Thallium (Tl)	2024/08/27	ND, RDL=0.050		ug/L	
			Total Tin (Sn)	2024/08/27	ND, RDL=1.0		ug/L	
			Total Titanium (Ti)	2024/08/27	ND, RDL=5.0		ug/L	
			Total Tungsten (W)	2024/08/27	ND, RDL=1.0		ug/L	
			Total Uranium (U)	2024/08/27	ND, RDL=0.10		ug/L	
			Total Vanadium (V)	2024/08/27	ND, RDL=0.50		ug/L	
			Total Zinc (Zn)	2024/08/27	ND, RDL=5.0		ug/L	
			Total Zirconium (Zr)	2024/08/27	ND, RDL=1.0		ug/L	
9599698	AFZ	RPD [AAOC51-01]	Total Aluminum (Al)	2024/08/27	5.2		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Antimony (Sb)	2024/08/27	NC		%	20
			Total Arsenic (As)	2024/08/27	1.4		%	20
			Total Barium (Ba)	2024/08/27	3.3		%	20
			Total Beryllium (Be)	2024/08/27	NC		%	20
			Total Bismuth (Bi)	2024/08/27	NC		%	20
			Total Boron (B)	2024/08/27	7.9		%	20
			Total Cadmium (Cd)	2024/08/27	NC		%	20
			Total Calcium (Ca)	2024/08/27	4.7		%	20
			Total Chromium (Cr)	2024/08/27	NC		%	20
			Total Cobalt (Co)	2024/08/27	NC		%	20
			Total Copper (Cu)	2024/08/27	5.0		%	20
			Total Iron (Fe)	2024/08/27	5.0		%	20
			Total Lead (Pb)	2024/08/27	NC		%	20
			Total Lithium (Li)	2024/08/27	NC		%	20
			Total Magnesium (Mg)	2024/08/27	1.2		%	20
			Total Manganese (Mn)	2024/08/27	2.0		%	20
			Total Molybdenum (Mo)	2024/08/27	5.0		%	20
			Total Nickel (Ni)	2024/08/27	NC		%	20
			Total Potassium (K)	2024/08/27	1.1		%	20
			Total Selenium (Se)	2024/08/27	NC		%	20
			Total Silicon (Si)	2024/08/27	3.5		%	20
			Total Silver (Ag)	2024/08/27	NC		%	20
			Total Sodium (Na)	2024/08/27	1.5		%	20
			Total Strontium (Sr)	2024/08/27	3.4		%	20
			Total Tellurium (Te)	2024/08/27	NC		%	20
			Total Thallium (Tl)	2024/08/27	NC		%	20
			Total Tin (Sn)	2024/08/27	NC		%	20
			Total Titanium (Ti)	2024/08/27	NC		%	20
			Total Tungsten (W)	2024/08/27	NC		%	20
			Total Uranium (U)	2024/08/27	14		%	20
			Total Vanadium (V)	2024/08/27	5.2		%	20
			Total Zinc (Zn)	2024/08/27	NC		%	20
			Total Zirconium (Zr)	2024/08/27	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.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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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VALIDATION SIGNATURE PAGE

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

Cristina Carriere

Cristina Carriere, Senior Scientific Specialist

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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Appendix B
2024 Stormwater Management Facility Inspections

Stormwater Management Pond Maintenance Schedule Template

Pond Name:

Anfred North
Anfred South
Canadian Tire
Christina
ESAR
Golfwood
Sandy Lakes
Walmart

Description:

- ☐ Wet Retention Pond
- ☐ Dry Pond with Sturgeon Creek Drain
- ☐ Dry Pond
- ☐ Wet Pond
- ☐ Swale Pond
- ☐ Detention Pond

Inspector: _____ **Date:** _____

No.	Task	Notes/Recommendations	Pass	Fail
1	Inspect the inlet and outlet pipe for structural integrity			
2	Inspect RIP RAP			
3	Inspect for Trash or other debris blocking inlet, outlet or spillway			
4	Inspect storm system ad catchbasins upstream from pond			
5	Inspect for sediment at the inlet pipes			
6	Sediment accumulation in pond			
7	Is pond functioning properly			
8	Inspect basin for signs of chemicals (solvents, gas, diesel, paint, natural gas).			
9	Inspect side slopes, berms and spillway			
10	Inspect vegetation cover on slopes or invasive species: pruple loosestrife, phragmites, buckthorn, honeysuckle etc..			
11	5 to 7.5 meter "no mow" chemical free zone around pond edge. Mowed once a year only			

2024 Stormwater Management Facility Inspections

Date	SWM Inspected	Comments/Follow up
14-Mar-24	Anfred North Pond	Pond was found to have minor debris in the northeast catch basin and dirt in the south outlet. The catch basins were surcharged during the inspection and grass had been cut around the pond.
14-Mar-24	Anfred South Pond	Pond was found to have minor debris and the lid lifting on the south catch basin. Some settlement around the outlet was observed and the grass had been cut around the pond.
14-Mar-24	Golfwood Pond	Pass all inspection items with the exception of minor debris and the need to raise the manhole off Augusta Drive.
18-Mar-24	Canadian Tire Pond	Pond was found to have minor debris and sediment across the whole pond. Some phragmites was observed.
18-Mar-24	Christina Pond	Pond was found to have a tire and some debris present. The side slopes are showing signs of erosion and voids and a catch basin cover was placed over the manhole lid.
18-Mar-24	ESAR Pond	Pond was found to have debris at the inlet and a broken outlet pipe. The side slopes are showing signs of erosion and sinkholes.
18-Mar-24	Kinsmen Ball Diamonds	Pass all inspection items with the exception of the inlet catch basin lid being off and the inlet rip rap settlement.
18-Mar-24	Ellison LID	Pass all inspection items.
18-Mar-24	Queens Hill LID	Pass all inspection items.
18-Mar-24	Ellison and Sherk LID	Pass all inspection items.
18-Mar-24	Sandy Lakes Pond	Pass all inspection items with the exception of the north inlet grate being dislodged.
18-Mar-24	Walmart Pond	Pond was found to have minor debris at the inlet, outlet and in the pond, as well as a sheen near the outlet. Rip rap and side slopes are showing signs of erosion and retaining wall is failing. Some phragmites was observed and sedimet buildup was present at the weir wall and along the bottom of the pond.

Work Order Number
1233

Leamington Pollution Control Centre

Antero Work Order

2024-08-09

Work Order Info

Status	Type	Priority	Interval Days
Active	Scheduled	Low	5
Last Completed	**Date Scheduled**	**Days to Complete**	**Date Delinquent**
	8-12-2024	7	8-19-2024

Equipment/Task

Equipment **PS-ALL-All Pumping Stations**

Location **PS - Pumping Station**

Task **PS-WKLY-INSP Weekly Pump Station Inspection**

The following tasks are to complete building water pipe and valve inspections.

If you are unsure of the tasks or specific safety requirement(s), discuss with your Supervisor and JHSC (for safety related items) first. Follow all Plant SOPs. Lockout equipment where required.
Any comments shall be noted on the Work Order. Sign and date once the tasks are completed.

- Blank Weekly Pump Station Inspection sheets can be found in the Plant Data folder.
- Confined Space procedures and policies must be applied.
- Portable gas detector required to test spaces before continuing inspections
- Notify Plant Operator or Administration staff before testing the alarms.
  - Where possible, have Security One call you with the alarm, or carry the On Call Phone.
  - Alarms go to the On Call Phone within the first 5 mintutes of activation, after 5 minutes the alarms go to Security One and they follow the contact list.
- All high and low float balls must be physically activated to ensure they are clean and alarm properly when free of debris.

To complete the inpsection for all pumping stations:

1. Inspect operation of all float balls to ensure they are not tangled or full of debris that would affect operation.
   - All floats should always physically checked each week to be free of buildup to prevent false alarms or improper pump operation that would cause them to run excessively.
2. Where equipped, check the alarm log or operation history on the Local HMI display.
3. Test all station alarms and verify they are activated properly on the Plant SCADA.
   - Alarms should go through Security One, On Call Phone, and show up on SCADA alarming history.
4. Record all pump hours.
5. Inspect wet well and observe for exessive buildup from grease or debris.
   - Clean out of wet well should be scheduled as needed.
6. Where equipped, rotate the duty pumps.
7. Where equipped, checked the Metering Chamber for excessive leaks or other concerns.
   - Test metering chamber floats where equipped.
8. Test run each pump.
   - Where equipped, note the flow of the pump through the flowmeter
   - While pump is in operation, check for anything unusual that may need further inpsection.
9. After inspection, ensure all pumps are returned to Auto as able.
10. Reset any alarms if they are stored at the station.
11. Ensure all lids, control panels, doors, and fencing are locked and secured.
12. Once completed, enter pump hours into spreadsheet and verify that they look to be running normally.
    - Any pumps with unusual run hours should be investigated further to avoid damages.

Completed Information

Completed Notes (Req)

☐ **Attention Required**

Date Completed (Req) _____

Completed By _____

Work Order Number
661

Leamington Pollution Control Centre

Antero Work Order

2024-04-25 12:05:51 PM

Work Order Info

Status	Type	Priority	Interval Days
Active	Scheduled	Moderate	365
Last Completed	**Date Scheduled**	**Days to Complete**	**Date Delinquent**
	4-22-2024	7	4-29-2024

Equipment/Task

Equipment **PS-GW-Golfwood Lakes Pump Station**

Location **PS - Golfwood SWPS**

Task **PS-Y-INSP Golfwood SWPS Yearly Inspection**

The following tasks are to complete annual inpsection of the Golfwood Storm Water Pump Station.

If you are unsure of the tasks or specific safety requirement(s), discuss with your Supervisor and JHSC (for safety related items) first. Follow all Plant SOPs. Lockout equipment where required.
Any comments shall be noted on the Work Order. Sign and date once the tasks are completed.

- Refer to the operating manual for the equipment as needed maintenance, general information, and troubleshooting tips.

Once per year perform the following on Golfwood Pump Station:

1. Install valve wheels for the 450mm maintenance sluice valve (main drain) and the 300mm inflow sluice gate valve (pond overflow to the wet well).
   - The valve wheels should be located in cabinet.
2. Check the valve stem, lightly lubricate with grease or a small amount of lubricant spray.
3. Open the 450mm valve to the station and then close the valve back to it's normal position.
   - Opening this valve allows the pond to drain and introduces a lot of flow to the station.
   - Flow should equalize to the inflow sluice gate level.
   - Monitor levels as required and adjust valve accordingly.
4. Close the 300 inlet overflow valve to the station and open back to normal.
5. With one operator at the Robson Road discharge across from Stormwater #1, and one operator at the Golfwood pump (with flow in the station wet well):
   - Start the Golfwood pump.
   - Ensure flow discharges properly to the discharge point.
   - If more flow is needed to pump, gently open the 450mm valve slightly to introduce flow to the station for the pump.
   - Close the 450mm valve if it needed to be opened.
   - Where possible, note the operation of the inverted duck bill to see if it is opening and closing as intended.
     - It might not be possible to see it depending on lake levels.
6. Check the general condition of the site. Look for signs of damage or items in need of repair for the wet well, hatches, stairs, vent pipes, and electrical panel.
7. Ensure station is back to normal and valve handles are removed and stored.

Completed Information

Completed Notes (Req)

☐ **Attention Required**

Date Completed (Req) _____

Completed By _____

Labor

Labor Class	Labor Account	Est. Hours	Act. Hours
MM - Maintenance Mechanic or as Assigned	Facility Maintenance	1.00	
ASP - Assistant Plant Operator or as Assigned	Facility Maintenance	1.00	

Appendix C
2024 Flushing and Maintenance Records

2024 Storm Sewer Flushing

Date	Location	Issue/Resolution	Sewer Type
2024-02-22	Erie Street South Outfall	Flush and clean storm sewer upstream of beach	STM
2024-03-21	Erie Street South Outfall	Flushed due to parking lot flooding and storm surcharge	STM
2024-12-17	4 Bruce	Flush and video for laterals	STM

2024 Oil Grit Separator Cleaning

Date	OGS Cleaned
15-Mar-24	Woodsit
	Peter St
	Destiny Dr

2024 Storm Pump Station Cleanouts

Date	Pump Station Cleaned
18-Apr-24	Stormwater #1
	Stormwater #2
30-Jul-24	Golfwood Lakes

Appendix D
2024 Storm Sewer and Pump Station Repairs

2024 Storm Sewer Repairs

Date	Address	Issue	Repair	Sewer Type
2024-10-03	Soccerfield behind Curling Club	Sinkhole in storm main	Steel bolts around coupler failed - readheared and sealed	STM

2024 Storm Pump Station Repairs

Date	Pump Station	Repair Completed
18-Oct-24	Stormwater #2	Installed new low level float ball.

Appendix E
2024 Complaints

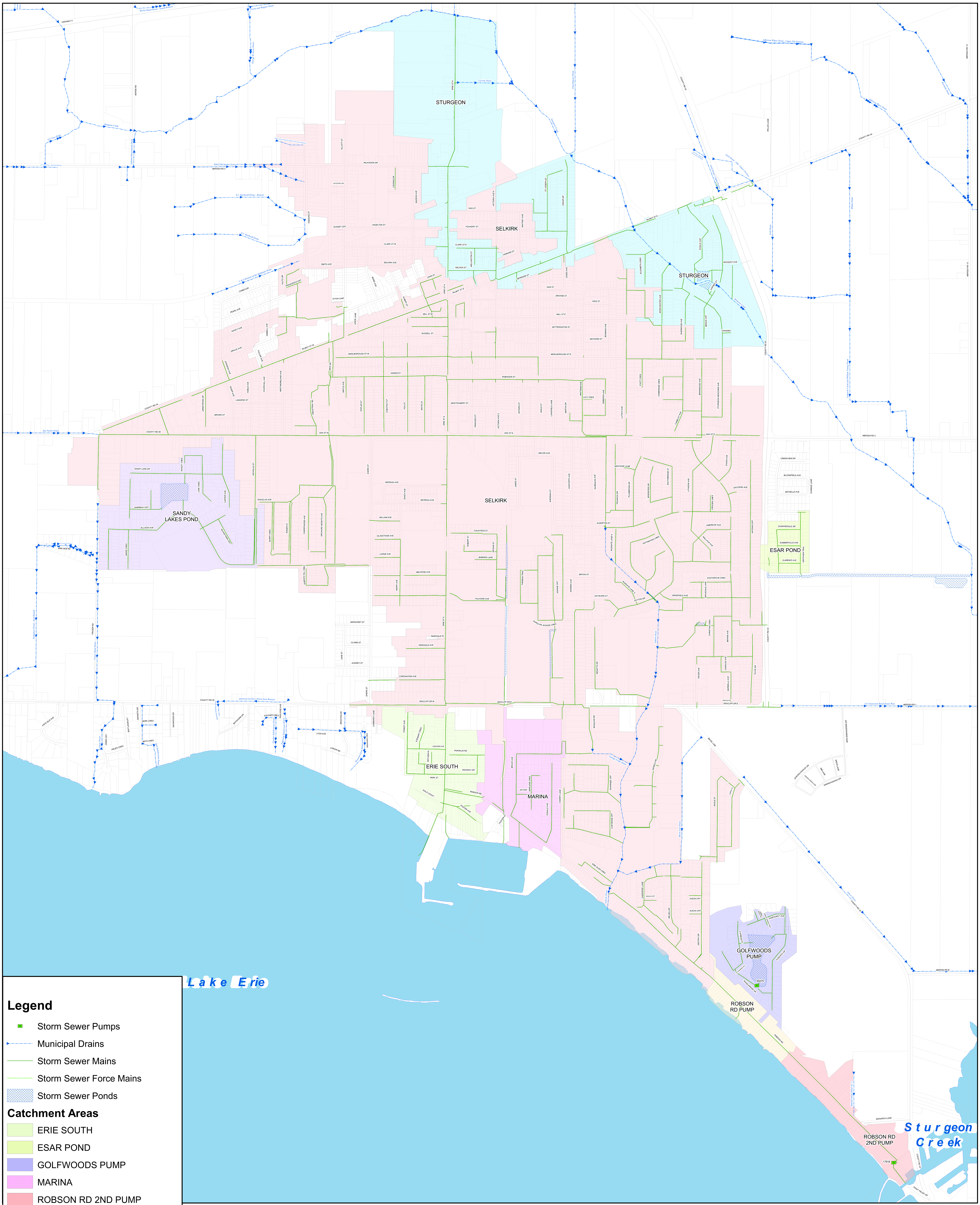
Storm Sewer CityWorks Tickets

RequestId	Date Initiated	Description	Priority	Category	Dispatch To	Address	Status	Details	Comments
23708	2024-02-28 09:01 AM	Request for sewer information	3	SEWER	BEZAIRE AREVALO, DANIEL	50 SEACLIFF DR E	CLOSED	Caller is complaining of a strong grease odor in the basement parking garage. He thinks Chucks Road House is dumping grease in the storm sewer.	Spoke with resident - investigated municipal side - no presence of grease in sampling manholes and CB's - grease bin present at Chucks roadhouse - advised resident to contact property management for further investigation as it's on private side.
24415	2024-05-17 02:07 AM	Request for sewer information	3	SEWER	NAJIM, DOMINIC	152 MARLBOROUGH ST E	CLOSED	Concerned about upcoming rains, previousl,y his basement has flooded when the water level outside of his home rises and the sewers are unable to meet the needs of the rain falling because the road is flooded. Water has come up through his sump pump hole. What can be done about this as preventative steps for future? HE does have a check valve in his basement, but when it is so backed up to the check valve then the sump has no where to pump water to.	Spoke with resident - advised him to maintain his backflow prevention valve - advised him that mains only surcharged during high intensity events - under normal conditions sewer should be flowing fine with no backups - he wanted to put his sump pump
24839	2024-06-27 10:21 AM	Request for sewer information	3	SEWER	BEZAIRE AREVALO, DANIEL	103 PETER AVE	CLOSED	Backyard floods everytime it rains	Went to site and spoke with resident - issue is that the cleanout has been pushed down into the lateral restricting flow from rear yard basin to STM sewer - advised resident that cleanout is homeowners responsibility to maintain - private issue
24847	2024-06-27 02:08 AM	Request for sewer information	3	SEWER	BEZAIRE AREVALO, DANIEL	403 SEACLIFF DR W	CLOSED	He is looking for his storm drain on his property. Wonder if we can tell him where its at./ Please contact him.	Called Herman back to let him know where he is assessed to and how many acres is assessed to each drain. He is happy with the response.
24864	2024-07-02 09:43 AM	Request for sewer information	3	SEWER	STASKO, SHAWN	11 Miami Ave	CLOSED	The storm drain in the driveway is collapsing into the ground because the area is washed out and now its sinking. Would like someone to come out and check it out. Across from his brown mail box.	Met with homeowner and will have Ciliska Excavating replace the CB that has rotted. Should be done in 2 - 3 weeks after locates come in.
24875	2024-07-02 01:48 AM	Sewer problem/backup	2	SEWER	BEZAIRE AREVALO, DANIEL	75 SETTERINGTON ST	CLOSED	Basement is flooding. No plumbing, everything draining to the basement. A plumber came with a camera and fixed everything but she believes we recently did work on it and it started to back the sewers up again.	Private issue with cleanout - steel cap in cleanout shut - need to get someone out there to remove steel cap
25730	2024-09-25 03:57 AM	Sewer problem/backup	2	SEWER	BEZAIRE AREVALO, DANIEL	71 WHITWAM AVE	CLOSED	Water was coming into the basement. Now the tubes are completely clogged. A plumber has inspected the situation and advised that the issue is with the drain at the road.	Went to site - all good with mains - private storm issue
25808	2024-10-07 10:45 AM	Request for sewer information	3	SEWER	STASKO, SHAWN	2337 DEER RUN RD	CLOSED	Was told that a tile would be put in under his driveway, Cliska did the work and did not install a tile. wants to speak with someone about this	Tile has been installed by Ciliska Excavating
26023	2024-10-31 11:03 AM	Request for sewer information	3	SEWER	BEZAIRE AREVALO, DANIEL	14 CEDAR DR	CLOSED	Saw someone dump a wheelbarrow full of something, and the person was doing concrete down the road,	Went to site and spoke with contractor doing work at 20 Cedar - gave him a warning as there wasn't major signs of concrete spillage in the catch basin - advised contractor is he's caught again he will be responsible for the flushing and cleaning
26297	2024-12-02 03:35 AM	Request for sewer information	3	SEWER	NAJIM, DOMINIC	ELLISON AVE & SANDY LAKE DR	CLOSED	Emptied out cement truck the other day, let it run down the edge ofthe road. run off and debris went down gutter and into sewer. west of his house, immediate neighbour home is being built and its cement truck for that build	Contacted property owner and explained that he would be liable for clean up. he understood and will talk to their contractors moving forward
26306	2024-12-03 11:12 AM	Request for sewer information	3	SEWER	NAJIM, DOMINIC	24 WIGLE ST	CLOSED	Catch basin is open as cover has been jarred open, caller is concerned for safety of pedestrians	Before i got to site the lid was placed back on the frame.

Storm Sewer Log

ID	Date	Address	Concern	Action_Taken	Comments	Responder
524	2024-08-29	50 REGATTA DR	BASEMENT FLOODING AFTER HEAVY RAINS	PRIVATE PROPERTY - SEWERS RUNNING NORMAL	Owner wanted on record that after heavy rains the water comes up her floor drain. Possible cross connection to her sanitary	DN
525	2024-08-29	16 SUMMERVILLE AVE	BASEMENT FLOODING AFTER HEAVY RAINS	PRIVATE PROPERTY - SEWERS RUNNING NORMAL	Long time issue with flat lateral line and bellys at the main line	DN
540	2024-09-25	71 WHITWAM AVE	SEWER BACKUP IN BASEMENT	PRIVATE PROPERTY - SEWERS RUNNING NORMAL	STM Issue with SUMP everytime it rains - STM main running smooth - private STM issue	DBA
541	2024-10-01	21 SEACLIFF DR E	SINKHOLE	MUNICIPAL PROPERTY - MAIN LINE BROKEN	STM CSP pipe coupler bolts broken opening joint between STMH-425-42 to STMH-425-54 approx. 100 m N of STMH-425-54 - JP ex on site for repairs - joint sealed and backfilled	DBA

Appendix F
Stormwater System Infrastructure Map



TITLE: **MUNICIPALITY OF LEAMINGTON - 2024 STORMWATER MAP (URBAN)**

SCALE: 1:4,900

0 205 410 820 1,230 1,640 Meters

Municipality of Leamington
live | play | work

Provided by the: Municipality of Leamington - GIS Services
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Date: 03/17/2025