

2020 Annual Performance

For the following system:

💧 **Komoka Wastewater Treatment Facility**



Owner: Municipality of Middlesex Centre

Operating Authority: Municipality of Middlesex Centre

January 13, 2020



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Introduction

The Komoka Wastewater Treatment Facility (WWTF) located on 22280 Komoka Road, Komoka, Ontario in the Municipality of Middlesex Centre. The treatment facility is operated by the Municipality under the guidelines and regulations established by the Ministry of the Environment, Conservation and Parks (MECP) to insure the strict effluent discharge criteria standards are met. Komoka's WWTF is operated under Certificate of Approval (C of A) 1847-87RK6Q issued on October 5, 2010.

Plant Facts

Certificate of Approval

- 1847-87RK6Q (Dated: October 5th, 2010)
- Wastewater System Number # 120002585

Rated Capacity

- Rated Plant Capacity 2,250 m³/day
- Peak Flow Capacity 9,000 m³/day

Monitoring & Compliance Data

As outlined in the C of A 1847-87RK6Q Section 10 (6) (a) thru (j), the following is a summary and interpretation of all monitoring data and a comparison to the effluent limits including an overview of the success and adequacy of the Komoka WWTF.

Effluent Limits

For the purposes of determining compliance and enforcing Final Effluent Compliance Limits below, the Monthly Average Effluent Concentrations, waste loadings, and E .Coli shall not be exceeded and pH shall be maintained within the specified range. The tables below provide the sampling frequency and outline the performance values of the Komoka WWTF demonstrating, through monthly comparisons of the analytical data and the limits that the final effluent limits were not exceeded in 2020.

Table 1 – Effluent Limits

Final Effluent Parameter	Average Concentration (mg/l)	Waste Loading (kg/d)
CBOD ₅	10.0	7.8
Total Suspended Solids	10.0	7.8
Total Phosphorus <ul style="list-style-type: none">• Nonfreezing period	0.5 (May 1 to Nov. 30)	0.39

• Freezing period	1.0 (Dec 1 to April 30)	0.78
Total Ammonia Nitrogen		
• Nonfreezing period	3.0	2.3
• Freezing period	5.0	3.9
Dissolved Oxygen	>4.0	
E-coli	200 organisms per 100mL	
pH of the effluent maintained between 6.0 to 9.0, inclusive, at all times		

Sampling Procedures

Samples are collected from the Komoka WWTF in accordance with the tables below, utilizing 24-hour composite sampling procedure when required. Analysis for these parameters is conducted at SGS Canada Inc. (SGS). SGS is a member of the Canadian Association for Laboratory Accreditation Incorporated, accreditation #A2765. There were no reported deviations from the monitoring schedule.

Table 2 – Raw Sewage

Parameters	Sample Type	Frequency
BOD ₅	24 hour composite	Quarterly
Total Suspended Solids	24 hour composite	Quarterly
Total Phosphorus	24 hour composite	Quarterly
Total Kjeldahl Nitrogen	24 hour composite	Quarterly

Table 3 – Effluent Monitoring

Parameters	Sample Type	Frequency
CBOD ₅	24 hour Composite	Weekly
Total Suspended Solids	24 hour Composite	Weekly
Total Phosphorus	24 hour Composite	Weekly
Total Ammonia Nitrogen	24 hour Composite	Weekly
E. Coli	Grab	Weekly
Dissolved Oxygen (measured in field)	Grab/Probe	Weekly
Temperature (measured in field)	Grab/Probe/ Analyzer	Weekly
pH (measured in field)	Grab/Probe/Analyzer	Weekly

Plant Performance and Interpretation of Results

Table 4, 5 and 6 summarizes the raw monthly average concentration, final effluent monthly average concentration. Limits corresponding with Table 2B – Effluent Limits of C of A #1847-87RK6Q are provided in the tables.

Table 4 – Raw Sewage Monthly Average Concentration

	BOD₅ (mg/l)	Total Suspend Solids (mg/l)	Total Phosphorus (mg/l)	Total Kjeldahl Nitrogen (mg/l)
1st Quarter	325	271	4.45	59
2nd Quarter	85	57	2.30	31
3rd Quarter	265	114	3.76	40
4th Quarter	190	144	3.69	46
Average	216	147	3.55	44

Table 5 – Final Effluent Monthly Limit Concentrations

	CBOD5 (mg/l)	TSS (mg/l)	TP (mg/l)	TAN (mg/l)	E.Coli (cfu/100ml)	pH	D.O. (mg/l)
Limit	10	10	*	**	200	6.0-9.0	<4.0
Jan	4.50	5.0	0.19	0.10		6.79	11.1
Feb	3.50	6.0	0.19	0.15		6.68	10.6
Mar	3.50	4.5	0.17	0.10		6.81	10.9
Apr	2.50	2.5	0.13	0.10		6.82	10.4
May	3.00	3.5	0.17	0.30	3	6.68	8.8
Jun	2.67	4.0	0.25	0.27	2	6.42	8.2
Jul	3.00	3.5	0.30	0.25	13	6.32	7.6
Aug	2.50	2.5	0.21	0.30	4	6.40	8.0
Sep	2.00	3.5	0.18	0.80	7	6.62	8.0
Oct	3.00	6.0	0.25	2.65	7	6.43	8.1
Nov	2.67	5.7	0.24	0.53	7	6.64	8.6
Dec	5.50	8.0	0.23	0.40		6.58	8.9
Avg.	3.20	4.6	0.21	0.50		6.60	9.10
Geomean					5		

*Total Phosphorous Limits for Non Freezing = 0.5mg/l (May 1 to Nov 30) Freezing = 1.0 mg/l (Dec 1 to April 30)

** Total Ammonia Nitrogen Limits Non Freezing 3.0 mg/l (May 1 to Nov 30) Freezing 5.0 mg/l (Dec 1 to April 30)

Table 6 – Final Effluent Monthly Average Waste Loadings

	CBOD5 (kg/d)	TSS (kg/d)	TP (kg/d)	TAN (kg/d)	E.Coli (cfu/100ml)	pH	D.O. (mg/l)
Limit	7.8	7.8	*	**	N/A	6.0-9.0	N/A
Jan	6.8	7.6	0.29	0.15		6.79	11.1
Feb	5.3	9.1	0.29	0.23		6.68	10.6
Mar	5.3	6.9	0.25	0.15		6.81	10.9
Apr	3.8	3.8	0.20	0.15		6.82	10.4
May	4.2	4.8	0.23	0.42	3	6.68	8.8
Jun	3.1	4.7	0.29	0.31	2	6.42	8.2

Jul	3.4	3.9	0.33	0.28	13	6.32	7.6
Aug	2.9	2.9	0.23	0.34	4	6.40	8.0
Sep	2.2	3.9	0.20	0.90	7	6.62	8.0
Oct	3.2	6.4	0.27	2.82	7	6.43	8.1
Nov	3.0	6.3	0.26	0.59	7	6.64	8.6
Dec	7.0	10.3	0.29	0.51		6.58	8.9
Avg.	4.2	5.9	0.26	0.57		6.60	9.10
Geomean					5		

Total Phosphorous Limits for Non Freezing = 0.39 kg/day (May 1 to Nov 30) Freezing = 0.78 kg/day (Dec 1 to April 30)

**** Total Ammonia Nitrogen Limits Non Freezing 2.3 kg/day (May 1 to Nov 30) Freezing 3.9 kg/day (Dec 1 to April 30)**

The Komoka WWTF was operated and maintained throughout 2020 such that the final effluent monthly average concentration and loading limits were adequate and did not exceed the effluent limits of CofA #1847-87RK6Q.

Operating Problems Encountered

All performance limits were achieved during the year, and there were no exceedances of the Certificate of Approval final effluent limits.

Maintenance

The operators performed routine maintenance throughout the year. The Municipality of Middlesex Centre utilizes the Computerized Maintenance Management System Job Cal to help track preventative maintenance. In addition to the routine maintenance that includes greasing, oiling and changing air filters, a list of highlights are below:

Table 7 – Maintenance

Maintenance Activity	
January	Replacement of filter #1 Backwash pump discharge piping Replacement filter #1 South filter cloth Replacement of UPS batteries Komoka Sewage Pump Station Wet Well cleaned Replacement of ferric pump #2
February	Replacement of filter#1 in North filter cell
March	Replacement of filter cloths in filter #2
April	Replacement of filter #2 sludge drain valve actuator Influent grit channels cleaned
May	Treatment Train #4 clarifier inspection Replacement of broken wear strip on flight track Replacement of filter cloths on Filter#1 Filter #2 backwash pump repair with new mechanical seal, sleeve Aeration Treatment Train #4 cleaned

	UV system bulb bank B service maintenance
June	Aeration tank #4 inspection and repairs, replacement of three blower-piping supports, cleaned, and replaced diffusers Replacement of both filter cloths on Filter #2 Biosolids tank inspection and CP test by Greatario
July	Installed new DO probe wire in Treatment Train #3
August	Installation of dehumidifier in blower room Replacement of coolant sensor on back up diesel generator
September	Replacement Filter #2 filter cloths. Replacement Filter #1 filter cloths Removal of raw sewage influent auger screen for rebuild Train #1 digester tank cleanout Train #1 aeration tank cleanout
October	Raw sewage influent flow meter for channel 1&2 calibrated and repaired
November	N/A
December	Removal of UV system for season and perform annual service Filter #2 chlorine maintenance clean

Effluent Quality

On a quarterly basis, the operator collected and submitted raw sewage influent grab samples to SGS Canada Inc. for biochemical oxygen demand, suspended solids, total Kjeldahl nitrogen (TKN) and total phosphorus. On a weekly basis, the operator collected effluent samples for analysis by SGS Canada Inc. for carbonaceous biochemical oxygen demand, total suspended solids, total phosphorus, total ammonia nitrogen, dissolved oxygen, pH and temperature.

In-house laboratory testing is also conducted which includes monitoring of MLSS, dissolved oxygen, pH, temperature and solids throughout the process.

Calibrations

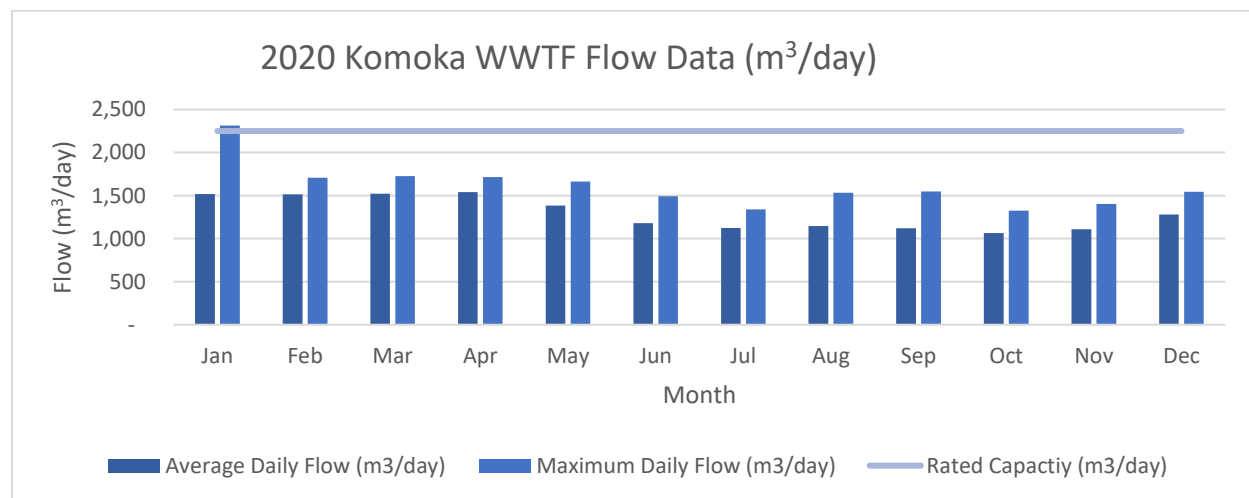
Calibrations were performed on October 15 & 19, 2020 for the flow meters. All meters are operating to within +/- 15% error as shown in the reports under *Appendix A*.

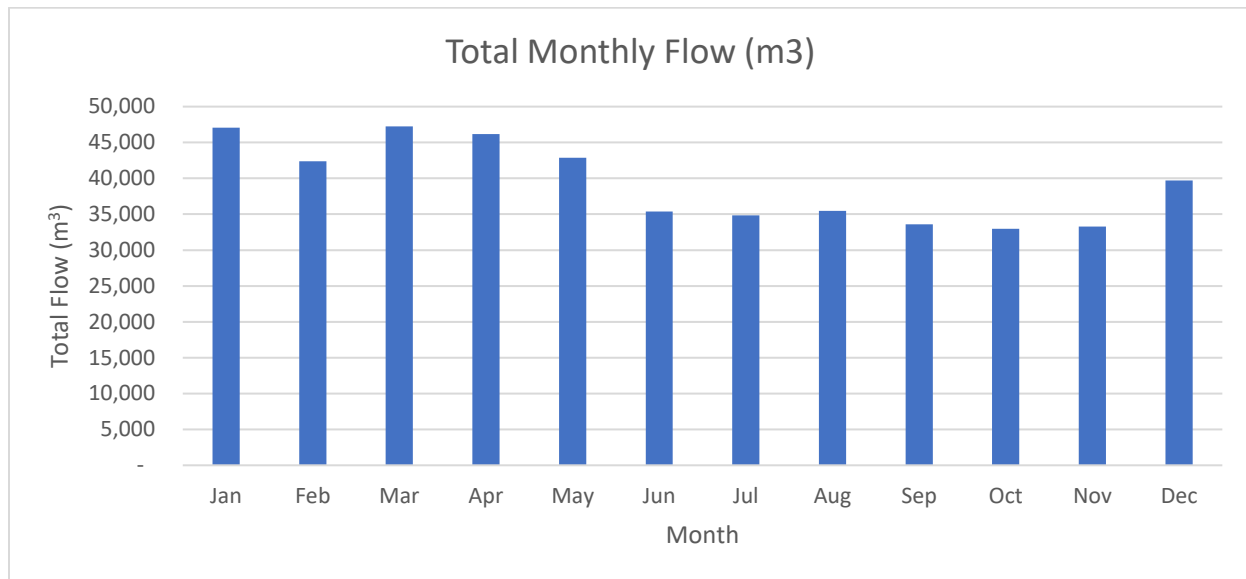
Flow Data

The Komoka WWTF provides a rated capacity of 2,250 m³/day average daily flow with a Peak Daily Flow of 9,000 m³/day. For the year of 2020, the average annual daily flow was 1,292 m³/day. The following table shows the average daily flow, the maximum daily flow and the total flow for each month of 2020.

Table 8 – 2020 Influent Flow Data

	Average Daily Flow (m ³ /day)	Maximum Daily Flow (m ³ /day)	Total Month Flow (m ³)
January	1,518	2,315	47,067
February	1,513	1,707	42,358
March	1,523	1,726	47,223
April	1,539	1,715	46,179
May	1,384	1,662	42,890
June	1,180	1,493	35,398
July	1,124	1,339	34,837
August	1,145	1,534	35,480
September	1,120	1,547	33,599
October	1,063	1,324	32,955
November	1,109	1,404	33,259
December	1,281	1,545	39,721
Total			470,966
Average	1,292		

Graph 1 – 2020 Flow (m³/day)

Graph 2 – 2020 Total Monthly Flows (m³)

Section F – Effluent Objectives

Table 9 – Final Effluent Monthly Average Concentrations & Objectives Comparison

	cBOD ₅ (mg/l)	TSS (mg/l)	TP (mg/l)	TAN (mg/l)	E.coli	pH
Objectives	5	5	0.37	1	150 cfu/100ml	6.0-9.0
January	4.50	5.0	0.19	0.10		6.79
February	3.50	6.0	0.19	0.15		6.68
March	3.50	4.5	0.17	0.10		6.81
April	2.50	2.5	0.13	0.10		6.82
May	3.00	3.5	0.17	0.30	3	6.68
June	2.67	4.0	0.25	0.27	2	6.42
July	3.00	3.5	0.30	0.25	13	6.32
August	2.50	2.5	0.21	0.30	4	6.40
September	2.00	3.5	0.18	0.80	7	6.62
October	3.00	6.0	0.25	2.65	7	6.43
November	2.67	5.7	0.24	0.53	7	6.64
December	5.50	8.0	0.23	0.40		6.58
Average	3.20	4.6	0.21	0.50		6.60
Geomean					5	

Total Phosphorous Limits for Non Freezing = 0.3 mg/l (May 1 to Nov 30) Freezing = 0.8 mg/l (Dec 1 to April 30)

**** Total Ammonia Nitrogen Limits Non Freezing 2 mg/l (May 1 to Nov 30) Freezing 4 mg/l (Dec 1 to April 30)**

Table 10 – Final Effluent Monthly Average Loading & Objectives Comparison

	cBOD ₅ (kg/d)	TSS (kg/d)	TP (kg/d)	TAN (kg/d)	E.coli	pH
Objectives	3.9	3.9	*	**	150 cfu/100ml	6.0-9.0
January	6.8	7.6	0.29	0.15	-	6.79
February	5.3	9.1	0.29	0.23	-	6.68
March	5.3	6.9	0.25	0.15	-	6.81
April	3.8	3.8	0.20	0.15	-	6.82
May	4.2	4.8	0.23	0.42	5.00	6.68
June	3.1	4.7	0.29	0.31	1.00	6.42
July	3.4	3.9	0.33	0.28	2.00	6.32
August	2.9	2.9	0.23	0.34	0.00	6.40
September	2.2	3.9	0.20	0.90	1.00	6.62
October	3.2	6.4	0.27	2.82	2.00	6.43
November	3.0	6.3	0.26	0.59	0.00	6.64
December	7.0	10.3	0.29	0.51	-	6.58
Average	4.2	5.9	0.26	0.57		6.60
Geomean					1.8	

Total Phosphorous Limits for Non Freezing = 0.23 kg/day (May 1 to Nov 30) Freezing = 0.62 kg/day (Dec 1 to April 30)

*** Total Ammonia Nitrogen Limits Non Freezing 1.6 kg/day (May 1 to Nov 30) Freezing 3.1 kg/day (Dec 1 to April 30)*

Monthly objectives concentrations exceeded in December for CBOD₅ but were well below the objective for all other months and on an annual average throughout the calendar year. Total Suspended Solids were above the objective concentration of February, October, November and December with the annual average below the objective limit as outlined in Table 9 - Final Effluent Monthly Average Concentrations & Objectives Comparison.

However, the waste loading objectives did not meet the required objectives for cBOD₅, TSS, TP or TKN in multiple months as outlined in Table 10 – Final Effluent Monthly Average Loading & Objectives Comparison. Operations staff made constant process and operational changes to meet the objective limits. Studies were completed to identify performance limiting factors and capital projects are being developed in 2021 to address some mechanical issues to address performance. These projects include the relocation of the filter reject water discharge pipe further upstream in the influent headworks to prevent short circuiting and overloading of aeration cells. Upgrade to the final effluent filter system which has a mechanical challenge and process bottle neck. The Composite Correction Mass Balance Program was also introduced as a process control program to manage the biological mass within the treatment trains.

Section G – Sludge Generation & Analytical

During the year, aerobic sludge is removed from the sludge holding tanks and applied to agriculture land for soil conditioning. The following volumes were removed from the Komoka WWTF.

Table 11 - Komoka Biosolids Haulage

Month	Volume Transported (m³)
June 30	416 m ³
August 18	420 m ³
Sept 14	1,080 m ³
Sept 15	1,348 m ³
Total Volume (m³)	3,264 m³

The volume of biosolids hauled in 2021 should be comparable in 2021.

Section H – Summary of Complaints Received

The Komoka WWTF did not receive any complaints in 2020.

Section I – Summary of By-Pass Events

The Komoka WWTF had four (4) by pass events and one (1) spill event during the 2020 calendar year. A list of the events with volumes is detailed below. The report that was submitted to the MECP is attached in *Appendix B*.

Table 12 – Bypass Events

Date	Cause of Bypass	Volume of Spill (m3)
March 24, 2020	Filter maintenance	3.0 m ³
March 30, 2020	Wet weather	420 m ³
July 11, 2020	Wet weather	7 m ³
August 17, 2020	Biosolids spill	10 m ³
September 14, 2020	Filter equipment failure	8m ³

Section J – Other Information

No additional requests for information were made by the District Manager.

APPENDIX A – CALIBRATION REPORTS



AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL		EQUIPMENT DETAIL	
CUSTOMER	Middlesex Centre	[MUT] MANUFACTURER	ENDRESS & HAUSER
CONTACT	Brian Watson	MODEL	PROMAG 53W
	Operations Supervisor	CONVERTER S/N:	E8050316000
	Cell: 519-854-7618	FUSE	Pull Plug on Unit
VER. BY - FM <i>Paris Machuk</i> Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC- QMS document at the time this test was		PLANT ID	Komoka WWTP
		METER ID	"SCP2" - Filter Effluent Water
		FIT ID	FIT-1560
		CLIENT TAG	"FIT-1560" "SCP2"
		OTHER	N/A
		GPS COORDINATES	N/A
			22280 Komoka Rd., Komoka, Ontario
		VERIFICATION DATE	October 14, 2020
		CAL. FREQUENCY	Annual
		CAL. DUE DATE	October, 2021

VER. BY - FM *Paris Machuk*

Quality Management Standards Information -
Reference equipment and instrumentation used
to conduct this verification test is found in our AC-
QMS document at the time this test was

PROGRAMMING PARAMETERS			FORWARD TOTALIZER INFORMATION		
DIAMETER (DN)	mm	300	AS FOUND	2053986	M3
F.S. FLOW - MAG	LPS	706.838	AS LEFT	2054021	M3
F.S. RANGE - O/P	LPS	130.000	DIFFERENCE	35	M3
TUBE k-FACTOR		1.07090	TEST CRITERIA		
TUBE zero		5	AS FOUND CERTIFICATION TEST		Yes
			FORWARD FLOW DIRECTION		Yes
			ALLOWABLE [%] ERROR		5
			COMPONENTS TESTED		
			CONVERTER DISPLAY		Yes
			mA OUTPUT		Yes
			TOTALIZER		Yes
			ACCURACY BASED ON [% o.r.]		Yes
			ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.		

FLOW TUBE SIMULATION

				0.0	32.5	65.0	97.5	130.0	LPS
				0.0	4.6	9.2	13.8	18.4	% F.S. Flow
				0.0	25.0	50.0	75.0	100.0	% F.S. Range
REF. FLOW RATE				0.000	32.500	65.000	97.500	130.000	LPS
MUT [Reading]				0.000	32.455	64.977	97.492	129.910	LPS
MUT [Difference]				0.000	-0.045	-0.023	-0.008	-0.090	LPS
MUT [% Error]				n/a	-0.14	-0.04	-0.01	-0.07	%
mA OUTPUT				4.000	8.000	12.000	16.000	20.000	mA
MUT [Reading]				3.998	7.991	11.995	15.982	19.982	mA
MUT [Difference]				-0.002	-0.009	-0.005	-0.018	-0.018	mA
MUT [% Error]				-0.05	-0.11	-0.04	-0.11	-0.09	%
TOTALIZER						REF. FLOW RATE		130.000	LPS
						TOTALIZER [MUT]		10.0	M3
						TEST TIME		76.51	SECONDS
						TOTALIZER [REF]		9.946	M3
						ERROR		0.54	%

COMMENTS				QUALITY MANAGEMENT STANDARDS INFO.			RESULTS		
				[QMS] INFORMATION	IDENT.	ID #	TEST	AVG % o.r.	PASS FAIL
				[REFERENCE] FTS	E&H-FC	1			
				PROCESS METER	DMM	11	DISPLAY	-0.06	PASS
				ANALOG METER	AM	N/A	mA OUTPUT	-0.08	PASS
				STOP WATCH	SW	Yes	TOTALIZER	0.54	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

APPENDIX B – BYPASS EVENT REPORTS



March 25, 2020

Ministry of the Environment, Conservation and Parks
Southwest Region
733 Exeter Road
London ON, N6E 1L3
Meghan.Morgan@ontario.ca

RE: Komoka WWTF Bypass Event

Dear Meghan,

This letter is to serve as written notice for a tertiary bypass in the filters at Komoka WWTF yesterday due to maintenance activities. During routine cleaning of the filter cloths one filter was not able to keep up with a sudden influx of flow. The duration of the bypass was 3 minutes with an estimated volume of 3.0 m3. The Operator onsite was not able to collect a sample. The Certificate of Approval number for the Komoka WWTF is #1847-87RK6Q.

This incident was reported to SAC, receiving a reference # 4467-BMZPJ9.

Should you have any questions please feel free to contact me.

Sincerely,



Brian Watson

Water/Wastewater Operations Supervisor

<http://middlesexcentre.on.ca> | watson@middlesexcentre.on.ca

22280 Komoka Road, RR#3 | Komoka, Ontario, N0L 1R0

C: 519.854.7618

Cc: Eric Joudrey, Operations Manager - Municipality of Middlesex Centre

Wastewater Bypass/Overflow Log

Municipality of Middlesex Centre

Facility: Komoka WWTF (120002585)

SAC 1-800-268-6060

Bypass Start: <u>24/03/2020, 13:52</u> <small>Date (DD/MM/YYYY), Time</small>		Bypass End: <u>24/03/2020, 13:55</u> <small>Date (DD/MM/YYYY), Time</small>	
Total Volume Bypassed: <u>3</u> cubic metres		<input checked="" type="checkbox"/> Check if estimated or unknown	
Duration (Hrs:Min) <u>3 minutes</u>			
Spill Action Centre Notified of Bypass:		<u>24/03/2020, 14:20</u> <small>Date (DD/MM/YYYY), Time</small>	<u>Brian Watson</u> <small>Operator Name</small>
Contact at the Spills Action Centre:		<u>4467-BMZPJ9</u> <small>Reference #</small>	<u>Neil St-Denis</u> <small>Name</small>
Spills Action Centre Notified of finish Time/Volume/Duration:		<input checked="" type="checkbox"/> Check if N/A	
Spill Action Centre Notified of Bypass Ending:		 <small>Date (DD/MM/YYYY), Time</small>	 <small>Operator Name</small>
Contact at the Spills Action Centre:		 <small>Name</small>	
Bypass Cause: <u>Filter Cleaning, 4</u> (Multiple causes are possible)			
<div style="display: flex; justify-content: space-between;"> <div>1= Heavy Precipitation 4= Equipment Maintenance 7= Exceed Design Capacity</div> <div>2= Snow Melt 5= Sewer Problem</div> <div>3= Equipment Failure 6= Power Failure</div> </div>			
Reason for Bypass: <u>One filter could not keep up with flow, 3</u> (Multiple reasons are possible)			
<div style="display: flex; flex-direction: column;"> <div>1) Avoid personal injury</div> <div>2) Avoid danger to public health</div> <div><u>3) Avoid severe property damage</u></div> <div>4) Prior written acknowledgement by the District Manager that is necessary to carry out essential maintenance</div> </div>			

Bypass sample taken: Yes: _____ No: ☒ If No please provide reason below

Reason for no sample:

Stopped bypass before sample could be taken

Note: Full event details must be logged in Facility Log Book. If no sample is taken a reason must be logged in the Facility Log Book

Revised Jan 10, 2017



April 1, 2020

Ministry of the Environment, Conservation and Parks
Southwest Region
733 Exeter Road
London ON, N6E 1L3
Meghan.Morgan@ontario.ca

RE: Komoka WWTF Bypass Event

Dear Meghan,

This letter is to serve as written notice for a tertiary bypass in the filters at Komoka WWTF which occurred on March 30-31, 2020 due to wet weather and high incoming flows to the plant. The duration of the bypass was 18 hours with an estimated volume of 420 m³. During this bypass event one of the filters was taken offline on March 31st for maintenance to replace the filter cloth media to resolve the issue. Samples were collected and the results will be provide once received. The Certificate of Approval number for the Komoka WWTF is #1847-87RK6Q.

This incident was reported to SAC, receiving a reference # 904268.

Should you have any questions please feel free to contact me.

Sincerely,



Brian Watson

Water/Wastewater Operations Supervisor

<http://middlesexcentre.on.ca> | watson@middlesexcentre.on.ca

22280 Komoka Road, RR#3 | Komoka, Ontario, N0L 1R0

C: 519.854.7618

Cc: Eric Joudrey, Operations Manager - Municipality of Middlesex Centre



April 14, 2020

Ministry of the Environment, Conservation and Parks
Southwest Region
733 Exeter Road
London ON, N6E 1L3
Meghan.Morgan@ontario.ca

RE: Komoka WWTF Bypass Event

Dear Meghan,

As a follow up to our letter for the Komoka WWTF bypass event on March 30-31, 2020 and reported to SAC (reference #904268), please see attached lab results.

Should you have any questions please feel free to contact me.

Sincerely,



Brian Watson

Water/Wastewater Operations Supervisor

<http://middlesexcentre.on.ca> | watson@middlesexcentre.on.ca

22280 Komoka Road, RR#3 | Komoka, Ontario, N0L 1R0

C: 519.854.7618

Cc: Eric Joudrey, Operations Manager - Municipality of Middlesex Centre

Wastewater Bypass/Overflow Log

Municipality of Middlesex Centre

Facility: Komoka WWTF (120002585)

SAC 1-800-268-6060

Bypass Start: <u>30-03-20, 16:29</u> <small>Date (DD/MM/YYYY), Time</small>		Bypass End: <u>31-03-20, 3:37</u> <small>Date (DD/MM/YYYY), Time</small>	
Total Volume Bypassed: <u>200</u> cubic metres		<input checked="" type="checkbox"/> Check if estimated or unknown	
Duration (Hrs:Min) <u>11:08</u>			
Spill Action Centre Notified of Bypass:		<u>30-03-20, 16:54</u> <small>Date (DD/MM/YYYY), Time</small>	<u>Brian Watson</u> <small>Operator Name</small>
Contact at the Spills Action Centre:		<u>904268</u> <small>Reference #</small>	<u>Fatima Jabeen</u> <small>Name</small>
Spills Action Centre Notified of finish Time/Volume/Duration:		<input type="checkbox"/> Check if N/A	
Spill Action Centre Notified of Bypass Ending:		<u>31-Mar-20, 17:53</u> <small>Date (DD/MM/YYYY), Time</small>	<u>Brian Watson</u> <small>Operator Name</small>
Contact at the Spills Action Centre:		<u>Aaron</u> <small>Name</small>	
Bypass Cause: <u>1</u> (Multiple causes are possible) <div style="display: flex; justify-content: space-between; margin-top: 5px;"><div>1= Heavy Precipitation 4= Equipment Maintenance 7= Exceed Design Capacity</div><div>2= Snow Melt 5= Sewer Problem</div><div>3= Equipment Failure 6= Power Failure</div></div>			
Reason for Bypass: <u>3</u> (Multiple reasons are possible) <div style="margin-top: 5px;">1) Avoid personal injury 2) Avoid danger to public health 3) Avoid severe property damage 4) Prior written acknowledgement by the District Manager that is necessary to carry out essential maintenance</div>			

Bypass sample taken: Yes: X No: _____ If No please provide reason below

Reason for no sample: _____

Note: Full event details must be logged in Facility Log Book. If no sample is taken a reason must be logged in the Facility Log Book

Revised Jan 10, 2017

Wastewater Bypass/Overflow Log

Municipality of Middlesex Centre

Facility: Komoka WWTF (120002585)

SAC 1-800-268-6060

Bypass Start: <u>31-03-20, 8:30</u> <small>Date (DD/MM/YYYY), Time</small>		Bypass End: <u>31-03-20, 15:22</u> <small>Date (DD/MM/YYYY), Time</small>	
Total Volume Bypassed: <u>220</u> cubic metres		<input checked="checked" type="checkbox"/> Check if estimated or unknown	
Duration (Hrs:Min) <u>6:52</u>			
Spill Action Centre Notified of Bypass:		<u>30-03-20, 16:54</u> <small>Date (DD/MM/YYYY), Time</small>	<u>Brian Watson</u> <small>Operator Name</small>
Contact at the Spills Action Centre:		<u>904268</u> <small>Reference #</small>	<u>Fatima Jabeen</u> <small>Name</small>
Spills Action Centre Notified of finish Time/Volume/Duration:		<input type="checkbox"/> Check if N/A	
Spill Action Centre Notified of Bypass Ending:		<u>31-Mar-20, 17:53</u> <small>Date (DD/MM/YYYY), Time</small>	<u>Brian Watson</u> <small>Operator Name</small>
Contact at the Spills Action Centre:		<u>Aaron</u> <small>Name</small>	
Bypass Cause: <u>1,4</u> (Multiple causes are possible)			
<div style="display: flex; justify-content: space-between;"><div>1= Heavy Precipitation 4= Equipment Maintenance 7= Exceed Design Capacity</div><div>2= Snow Melt 5= Sewer Problem</div><div>3= Equipment Failure 6= Power Failure</div></div>			
Reason for Bypass: <u>3</u> (Multiple reasons are possible)			
<div style="display: flex; justify-content: space-between;"><div>1) Avoid personal injury 2) Avoid danger to public health 3) Avoid severe property damage 4) Prior written acknowledgement by the District Manager that is necessary to carry out essential maintenance</div></div>			

Bypass sample taken: Yes: X No: _____ If No please provide reason below

Reason for no sample: _____

Note: Full event details must be logged in Facility Log Book. If no sample is taken a reason must be logged in the Facility Log Book

Revised Jan 10, 2017

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
 Lakefield - Ontario - K0L 2H0
 Phone: 705-652-2000 FAX: 705-652-6365

14-April-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 07 April 2020

LR Report: CA30101-APR20

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
 Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Temperature Upon Receipt at London Lab	Temperature Upon Receipt at Lakefield Lab	Carbonaceous Biochemical Oxygen Demand (CBOD5) mg/L	Total Suspended Solids mg/L	Phosphorus (total) mg/L	Ammonia+Ammonium (N) as N mg/L
1: Analysis Start Date		---	---	07-Apr-20	08-Apr-20	09-Apr-20	09-Apr-20
2: Analysis Start Time		---	---	21:50	22:01	18:52	19:30
3: Analysis Completed Date		---	---	13-Apr-20	14-Apr-20	13-Apr-20	13-Apr-20
4: Analysis Completed Time		---	---	12:32	09:24	11:41	10:15
5: Bypass - Final Effluent 1	31-Mar-20 09:10	10.1	15.0	< 4	5	0.17	0.1
6: Bypass - Final Effluent 2	31-Mar-20 10:10	10.1	15.0	< 4	10	0.22	< 0.1
7: Bypass - Final Effluent 3	31-Mar-20 11:10	10.1	15.0	< 4	8	0.20	0.1
8: Bypass - Final Effluent 4	31-Mar-20 12:10	10.1	15.0	< 4	8	0.20	0.2
9: Bypass - Final Effluent 5	31-Mar-20 13:10	10.1	15.0	< 4	7	0.20	0.3
10: Bypass - Final Effluent 6	31-Mar-20 14:10	10.1	15.0	< 4	7	0.22	0.5
11: Bypass - Final Effluent 7	31-Mar-20 15:10	10.1	15.0	< 4	7	0.20	0.7

Total Suspended Solids (TSS) was processed after the recommended holding time of 7 days.


 Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

07-April-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Date Rec. : 31 March 2020
LR Report: CA30329-MAR20

Copy: #1

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Temperature Upon Receipt at London Lab °C	Temperature Upon Receipt at Lakefield Lab °C	Carbonaceous Biochemical Oxygen Demand (CBOD5) mg/L	Total Suspended Solids mg/L	Phosphorus (total) mg/L	Ammonia+Ammonium (N) as N mg/L
1: Analysis Start Date		---	---	01-Apr-20	03-Apr-20	01-Apr-20	01-Apr-20
2: Analysis Start Time		---	---	21:49	06:20	18:50	18:25
3: Analysis Completed Date		---	---	06-Apr-20	06-Apr-20	02-Apr-20	06-Apr-20
4: Analysis Completed Time		---	---	20:00	10:17	15:57	17:46
5: Bypass-Final Effluent 00:30	31-Mar-20 00:30	6.3	6.0	3	5	0.18	0.1
6: Bypass-Final Effluent 01:30	31-Mar-20 01:30	6.3	6.0	3	6	0.18	0.1
7: Bypass-Final Effluent 02:30	31-Mar-20 02:30	6.3	6.0	< 2	5	0.16	0.1
8: Bypass-Final Effluent 22:30	30-Mar-20 22:30	6.3	6.0	3	9	0.19	0.1
9: Bypass-Final Effluent 23:30	30-Mar-20 23:30	6.3	6.0	2	8	0.19	0.1
10: Bypass-Final Effluent 16:34	30-Mar-20 16:34	6.3	6.0	2	5	0.17	0.2
11: Bypass-Final Effluent 17:38	30-Mar-20 17:38	6.3	6.0	3	2	0.16	0.2
12: Bypass-Final Effluent 18:37	30-Mar-20 18:37	6.3	6.0	3	6	0.16	0.2
13: Bypass-Final Effluent 20:34	30-Mar-20 20:34	6.3	6.0	4	5	0.18	0.1
14: Bypass-Final Effluent 21:33	30-Mar-20 21:33	6.3	6.0	4	13	0.19	0.1



Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



July 15, 2020

Ministry of the Environment, Conservation and Parks
Southwest Region
733 Exeter Road
London ON, N6E 1L3
Meghan.Morgan@ontario.ca

RE: Komoka WWTF Bypass Event

Dear Meghan,

This letter is to serve as written notice for a tertiary bypass in the filters at Komoka WWTF which occurred on July 11, 2020 due to wet weather and high incoming flows to the plant. The duration of the bypass was 16 minutes with an estimated volume of 7 m³. During the time of the bypass the wastewater continued to also be processed through the plant. Samples were collected and the results will be provide once received. The Certificate of Approval number for the Komoka WWTF is #1847-87RK6Q.

This incident was reported to SAC, receiving a reference #904551.

Should you have any questions please feel free to contact me.

Sincerely,



Brian Watson

Water/Wastewater Operations Supervisor

<http://middlesexcentre.on.ca> | watson@middlesexcentre.on.ca

22280 Komoka Road, RR#3 | Komoka, Ontario, N0L 1R0

C: 519.854.7618

Cc: Eric Joudrey, Operations Manager - Municipality of Middlesex Centre



July 22, 2020

Ministry of the Environment, Conservation and Parks
Southwest Region
733 Exeter Road
London ON, N6E 1L3
Meghan.Morgan@ontario.ca

RE: Komoka WWTF Bypass Event

Dear Meghan,

As a follow up to our letter for the Komoka WWTF bypass event on and reported to SAC (reference #904551), please see attached lab results.

Should you have any questions please feel free to contact me.

Sincerely,



Brian Watson

Water/Wastewater Operations Supervisor

<http://middlesexcentre.on.ca> | watson@middlesexcentre.on.ca

22280 Komoka Road, RR#3 | Komoka, Ontario, N0L 1R0

C: 519.854.7618

Cc: Eric Joudrey, Operations Manager - Municipality of Middlesex Centre

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

21-July-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Date Rec. : 14 July 2020
LR Report: CA30241-JUL20

Copy: #1

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Bypass - Final Effluent
Sample Date & Time					11-Jul-20 17:17
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	11.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	16-Jul-20	17:10	21-Jul-20	13:45	10
Total Suspended Solids [mg/L]	17-Jul-20	13:23	20-Jul-20	09:06	15
Phosphorus (total) [mg/L]	16-Jul-20	16:57	20-Jul-20	15:39	1.02
Ammonia+Ammonium (N) [as N mg/L]	16-Jul-20	16:35	17-Jul-20	20:44	1.2



Carrie Greenlaw
Project Specialist,
Environment, Health & Safety



August 18, 2020

Ministry of the Environment, Conservation and Parks
Southwest Region
733 Exeter Road
London ON, N6E 1L3
Meghan.Morgan@ontario.ca

RE: Komoka WWTF Biosolids Spill

Dear Meghan,

This letter is to serve as written notice of the biosolids spill from the biosolids hold tank at the Komoka WWTF which occurred on Monday August 17, 2020 due to mixing action in a full storage tank. The spill was reported to the Spill Action Centre (SAC) at 09:57 to Renee Belanger and issued an Incident Number 1508-BSKJE2 and was closed at 15:32 Monday August 17, 2020. The spill was identified at 09:00 and resulted in approximately 10 cubic meters (m3) of biosolids spilling to the ground from the top. The mixers were shut off and sludge was transferred to the treatment plant to prevent further spill. The spill was contained on site and no material escaped to the natural environment. The spilled material was cleaned from the driveway and disposed of back into the treatment facility. The Certificate of Approval number for the Komoka WWTF is #1847-87RK6Q.

Please contact me if you have any questions.

Sincerely,

Eric Joudrey
Manager of Water & Wastewater Operations
Municipality of Middlesex Centre
519-666-0190 x 255

Cc:
Rob Cascaden, Director of Public Works & Engineering - Municipality of Middlesex Centre
Brian Watson, Operations Supervisor – Municipality of Middlesex Centre

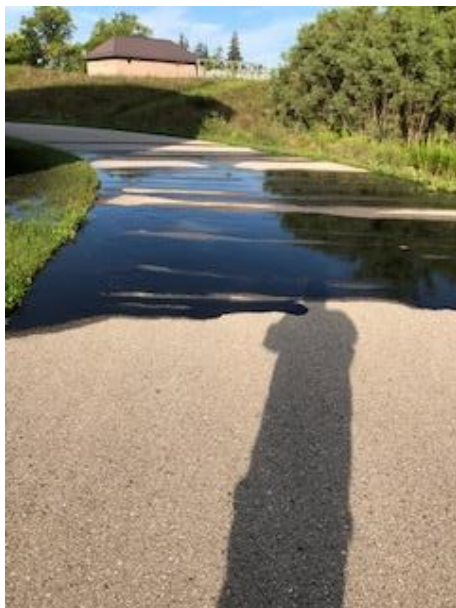
Photos of Spill





middlesex
centre

in the centre of it all





September 18, 2020

Ministry of the Environment, Conservation and Parks
Southwest Region
733 Exeter Road
London ON, N6E 1L3
Meghan.Morgan@ontario.ca

RE: Komoka WWTF Bypass Event

Dear Meghan,

This letter is to serve as written notice for a tertiary bypass in the filters at Komoka WWTF which occurred on September 14, 2020 due to equipment failure. The duration of the bypass was 10 minutes with an estimated volume of 8 m3. During the time of the bypass the wastewater continued to also be processed through the plant. Samples were collected and the analytical results are attached. The Certificate of Approval number for the Komoka WWTF is #1847-87RK6Q.

This incident was reported to SAC, receiving a reference # 3136-BTFHSD.

Should you have any questions please feel free to contact me.

Sincerely,



Eric Joudrey

Water/Wastewater Operations Manager

<http://middlesexcentre.on.ca> | watson@middlesexcentre.on.ca

22280 Komoka Road, RR#3 | Komoka, Ontario, N0L 1R0

C: 519.854.7618

Cc: Brian Watson, Operations Supervisor - Municipality of Middlesex Centre

Municipality of Middlesex Centre
Facility: Komoka WWTP (120002585)

Revised Jan 10, 2017

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

24-September-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 15 September 2020
LR Report: CA30219-SEP20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Bypass - Final Effluent
Sample Date & Time					14-Sep-20 08:09
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
E.Coli [cfu/100mL]	15-Sep-20	15:45	17-Sep-20	11:10	< 1000
E.Coli [cfu/100mL]	16-Sep-20	16:25	18-Sep-20	14:47	490 UAL
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	17-Sep-20	18:10	22-Sep-20	16:52	5
Total Suspended Solids [mg/L]	17-Sep-20	07:36	18-Sep-20	11:52	8
Phosphorus (total) [mg/L]	19-Sep-20	11:34	21-Sep-20	12:44	0.24
Ammonia+Ammonium (N) [as N mg/L]	18-Sep-20	18:19	21-Sep-20	14:00	2.4

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

E. coli was re-assayed after the recommended holding time of 48 hours.

UAL - Unreliable: Sample Age Exceeds Normal Limit


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

APPENDIX C – ANALYTICAL REPORTS

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

14-January-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 07 January 2020
LR Report: CA30040-JAN20

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C2 Raw Sewage
Sample Date & Time					06-Jan-20 10:55
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	10.0
Biochemical Oxygen Demand (BOD5) [mg/L]	08-Jan-20	17:29	13-Jan-20	16:02	325
Total Suspended Solids [mg/L]	08-Jan-20	09:39	09-Jan-20	13:49	271
Total Kjeldahl Nitrogen [as N mg/L]	08-Jan-20	16:42	09-Jan-20	10:58	58.6
Phosphorus (total) [mg/L]	09-Jan-20	15:48	09-Jan-20	14:08	4.45


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

20-January-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 14 January 2020
LR Report: CA30177-JAN20

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					13-Jan-20 09:45
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	15-Jan-20	17:15	20-Jan-20	15:16	5
Total Suspended Solids [mg/L]	15-Jan-20	10:36	17-Jan-20	11:52	6
Phosphorus (total) [mg/L]	15-Jan-20	16:49	17-Jan-20	16:18	0.20
Ammonia+Ammonium (N) [as N mg/L]	16-Jan-20	17:00	16-Jan-20	11:52	< 0.1
Unionized Ammonia @temp15 [mg/L as N]	15-Jan-20	13:35	17-Jan-20	08:48	< 0.001
pH@temp15 [pH Units]	15-Jan-20	13:35	17-Jan-20	08:48	7.56

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

03-February-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 28 January 2020
LR Report: CA30315-JAN20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					27-Jan-20 09:45
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	29-Jan-20	16:11	03-Feb-20	15:25	4
Total Suspended Solids [mg/L]	29-Jan-20	10:05	31-Jan-20	09:04	4
Phosphorus (total) [mg/L]	30-Jan-20	15:00	30-Jan-20	13:24	0.18
Ammonia+Ammonium (N) [as N mg/L]	29-Jan-20	15:00	30-Jan-20	18:47	< 0.1

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

18-February-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Date Rec. : 11 February 2020
LR Report: CA30119-FEB20

Copy: #1

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					10-Feb-20 10:00
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	11.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	12-Feb-20	16:33	18-Feb-20	11:54	4
Total Suspended Solids [mg/L]	13-Feb-20	15:18	14-Feb-20	14:54	6
pH@temp15 [pH Units]	12-Feb-20	11:37	13-Feb-20	10:06	7.58
Phosphorus (total) [mg/L]	12-Feb-20	17:59	13-Feb-20	12:16	0.19
Ammonia+Ammonium (N) [as N mg/L]	13-Feb-20	11:00	14-Feb-20	08:58	< 0.1
Unionized Ammonia @temp15 [mg/L as N]	12-Feb-20	11:37	14-Feb-20	08:58	< 0.001

Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

02-March-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 25 February 2020
LR Report: CA30231-FEB20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					24-Feb-20 10:55
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	3.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	26-Feb-20	17:03	02-Mar-20	15:44	3
Total Suspended Solids [mg/L]	26-Feb-20	13:04	02-Mar-20	08:13	6
Phosphorus (total) [mg/L]	26-Feb-20	16:53	27-Feb-20	12:59	0.19
Ammonia+Ammonium (N) [as N mg/L]	27-Feb-20	07:00	28-Feb-20	09:12	0.2

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

**SGS Canada Inc.**

P.O. Box 4300 - 185 Concession St.
 Lakefield - Ontario - K0L 2H0
 Phone: 705-652-2000 FAX: 705-652-6365

14-April-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 07 April 2020

LR Report: CA30101-APR20

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
 Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Temperature Upon Receipt at London Lab	Temperature Upon Receipt at Lakefield Lab	Carbonaceous Biochemical Oxygen Demand (CBOD5) mg/L	Total Suspended Solids mg/L	Phosphorus (total) mg/L	Ammonia+Ammonium (N) as N mg/L
1: Analysis Start Date		---	---	07-Apr-20	08-Apr-20	09-Apr-20	09-Apr-20
2: Analysis Start Time		---	---	21:50	22:01	18:52	19:30
3: Analysis Completed Date		---	---	13-Apr-20	14-Apr-20	13-Apr-20	13-Apr-20
4: Analysis Completed Time		---	---	12:32	09:24	11:41	10:15
5: Bypass - Final Effluent 1	31-Mar-20 09:10	10.1	15.0	< 4	5	0.17	0.1
6: Bypass - Final Effluent 2	31-Mar-20 10:10	10.1	15.0	< 4	10	0.22	< 0.1
7: Bypass - Final Effluent 3	31-Mar-20 11:10	10.1	15.0	< 4	8	0.20	0.1
8: Bypass - Final Effluent 4	31-Mar-20 12:10	10.1	15.0	< 4	8	0.20	0.2
9: Bypass - Final Effluent 5	31-Mar-20 13:10	10.1	15.0	< 4	7	0.20	0.3
10: Bypass - Final Effluent 6	31-Mar-20 14:10	10.1	15.0	< 4	7	0.22	0.5
11: Bypass - Final Effluent 7	31-Mar-20 15:10	10.1	15.0	< 4	7	0.20	0.7

Total Suspended Solids (TSS) was processed after the recommended holding time of 7 days.


 Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety

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16-March-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 10 March 2020
LR Report: CA30115-MAR20

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Copy: #1

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					09-Mar-20 10:10
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	11-Mar-20	17:35	16-Mar-20	15:21	4
Total Suspended Solids [mg/L]	12-Mar-20	10:49	16-Mar-20	11:49	3
Phosphorus (total) [mg/L]	11-Mar-20	17:04	12-Mar-20	13:03	0.18
Ammonia+Ammonium (N) [as N mg/L]	11-Mar-20	16:38	12-Mar-20	11:10	0.1
Unionized Ammonia @temp15 [mg/L as N]	13-Mar-20	10:29	13-Mar-20	15:32	< 0.001
pH@temp15 [pH Units]	13-Mar-20	10:29	13-Mar-20	15:32	7.48

Note: Federal unionized ammonia at 15 °C calculated using lab pH results performed at this temperature.


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01-April-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 24 March 2020
LR Report: CA30280-MAR20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					23-Mar-20 09:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	2.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	26-Mar-20	20:27	31-Mar-20	18:14	3
Total Suspended Solids [mg/L]	26-Mar-20	21:33	27-Mar-20	14:24	6
Phosphorus (total) [mg/L]	27-Mar-20	10:49	30-Mar-20	17:51	0.15
Ammonia+Ammonium (N) [as N mg/L]	26-Mar-20	18:06	27-Mar-20	16:15	0.1

Carrie Greenlaw
Project Specialist,
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07-April-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Date Rec. : 31 March 2020
LR Report: CA30329-MAR20

Copy: #1

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Sample ID	Sample Date & Time	Temperature Upon Receipt at London Lab °C	Temperature Upon Receipt at Lakefield Lab °C	Carbonaceous Biochemical Oxygen Demand (CBOD5) mg/L	Total Suspended Solids mg/L	Phosphorus (total) mg/L	Ammonia+Ammonium (N) as N mg/L
1: Analysis Start Date		---	---	01-Apr-20	03-Apr-20	01-Apr-20	01-Apr-20
2: Analysis Start Time		---	---	21:49	06:20	18:50	18:25
3: Analysis Completed Date		---	---	06-Apr-20	06-Apr-20	02-Apr-20	06-Apr-20
4: Analysis Completed Time		---	---	20:00	10:17	15:57	17:46
5: Bypass-Final Effluent 00:30	31-Mar-20 00:30	6.3	6.0	3	5	0.18	0.1
6: Bypass-Final Effluent 01:30	31-Mar-20 01:30	6.3	6.0	3	6	0.18	0.1
7: Bypass-Final Effluent 02:30	31-Mar-20 02:30	6.3	6.0	< 2	5	0.16	0.1
8: Bypass-Final Effluent 22:30	30-Mar-20 22:30	6.3	6.0	3	9	0.19	0.1
9: Bypass-Final Effluent 23:30	30-Mar-20 23:30	6.3	6.0	2	8	0.19	0.1
10: Bypass-Final Effluent 16:34	30-Mar-20 16:34	6.3	6.0	2	5	0.17	0.2
11: Bypass-Final Effluent 17:38	30-Mar-20 17:38	6.3	6.0	3	2	0.16	0.2
12: Bypass-Final Effluent 18:37	30-Mar-20 18:37	6.3	6.0	3	6	0.16	0.2
13: Bypass-Final Effluent 20:34	30-Mar-20 20:34	6.3	6.0	4	5	0.18	0.1
14: Bypass-Final Effluent 21:33	30-Mar-20 21:33	6.3	6.0	4	13	0.19	0.1


Carrie Greenlaw
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20-April-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 07 April 2020

LR Report: CA30091-APR20

10227 Ilderton Rd.
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 N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C2 Raw Sewage	6: 1A0C6 Final Effluent
Sample Date & Time					06-Apr-20 13:00	06-Apr-20 13:20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	10.1	10.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	15.0	15.0
Biochemical Oxygen Demand (BOD5) [mg/L]	08-Apr-20	19:59	13-Apr-20	14:19	85	---
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	08-Apr-20	22:44	13-Apr-20	15:27	---	3
Total Suspended Solids [mg/L]	09-Apr-20	14:45	13-Apr-20	08:17	57	3
Total Kjeldahl Nitrogen [as N mg/L]	16-Apr-20	17:45	17-Apr-20	10:46	30.9	---
Phosphorus (total) [mg/L]	08-Apr-20	19:34	09-Apr-20	19:31	---	0.14
Phosphorus (total) [mg/L]	16-Apr-20	17:08	17-Apr-20	21:06	2.30	---
Ammonia+Ammonium (N) [as N mg/L]	08-Apr-20	20:19	09-Apr-20	18:13	---	0.1
Unionized Ammonia @temp15 [mg/L as N]	09-Apr-20	19:25	14-Apr-20	09:15	---	< 0.001
pH@temp15 [pH Units]	09-Apr-20	19:25	14-Apr-20	09:15	---	7.46



Carrie Greenlaw
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28-April-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
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Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 21 April 2020
LR Report: CA30263-APR20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					20-Apr-20 12:26
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	22-Apr-20	21:59	27-Apr-20	15:30	< 2
Total Suspended Solids [mg/L]	22-Apr-20	09:39	23-Apr-20	11:40	< 2
Phosphorus (total) [mg/L]	22-Apr-20	16:51	24-Apr-20	00:23	0.12
Ammonia+Ammonium (N) [as N mg/L]	27-Apr-20	10:00	27-Apr-20	16:03	0.1

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

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12-May-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
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N0M 2A0, Canada

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 05 May 2020
LR Report: CA30027-MAY20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					04-May-20 14:09
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
E.Coli [cfu/100mL]	05-May-20	17:30	08-May-20	08:56	1
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	06-May-20	21:05	11-May-20	19:12	< 2
Total Suspended Solids [mg/L]	06-May-20	08:33	07-May-20	07:41	3
Phosphorus (total) [mg/L]	07-May-20	11:00	08-May-20	10:03	0.16
Ammonia+Ammonium (N) [as N mg/L]	06-May-20	18:00	07-May-20	12:35	0.1
Unionized Ammonia @temp15 [mg/L as N]	06-May-20	10:43	07-May-20	12:35	< 0.001
pH@temp15 [pH Units]	06-May-20	10:43	07-May-20	10:47	7.39

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.



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25-May-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Date Rec. : 19 May 2020
LR Report: CA30233-MAY20

Copy: #1

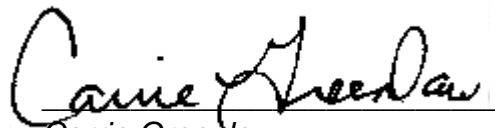
Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					18-May-20 10:38
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	3
E.Coli [cfu/100mL]	19-May-20	16:15	21-May-20	10:28	11
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	20-May-20	22:00	25-May-20	14:52	4
Total Suspended Solids [mg/L]	21-May-20	14:40	24-May-20	22:06	4
Phosphorus (total) [mg/L]	20-May-20	22:19	21-May-20	20:13	0.17
Ammonia+Ammonium (N) [as N mg/L]	20-May-20	17:00	21-May-20	21:12	0.5

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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10-June-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 02 June 2020
LR Report: CA30046-JUN20

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
 Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 36D07 Sludge 1	6: 36D07 Sludge 2
Sample Date & Time					01-Jun-20 11:30	01-Jun-20 16:24
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	9.8	9.9
Temperature Upon Receipt [°C]					7.0	7.0
E. Coli [cfu/1g dried wgt]	02-Jun-20	17:10	05-Jun-20	07:49	2652	3930
E.Coli [cfu/100mL]	02-Jun-20	17:10	05-Jun-20	07:49	7000	9000
Total Solids [mg/L]	05-Jun-20	19:54	09-Jun-20	12:06	26400	22900
Volatile Solids [mg/L]	05-Jun-20	19:54	09-Jun-20	12:06	15200	13700
Total Kjeldahl Nitrogen [as N mg/L]	05-Jun-20	06:41	10-Jun-20	08:42	1450	1370
Ammonia+Ammonium (N) [as N mg/L]	05-Jun-20	15:56	08-Jun-20	16:26	292	364
Nitrite (as N) [mg/L]	05-Jun-20	13:02	08-Jun-20	14:56	< 0.2	< 0.2
Nitrate (as N) [mg/L]	05-Jun-20	13:02	08-Jun-20	14:56	< 0.3	0.4
Nitrate + Nitrite (as N) [mg/L]	05-Jun-20	13:02	08-Jun-20	14:56	< 0.3	0.4
Arsenic [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	< 0.1	< 0.1
Cadmium [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	0.032	0.023
Cobalt [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	0.12	0.12
Chromium [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	2.9	2.6
Copper [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	14	11
Mercury [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	0.036	0.030
Potassium [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	60	73
Molybdenum [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	0.28	0.24
Nickel [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	2.1	0.69
Phosphorus (Total) [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	880	790
Lead [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	1.0	0.4
Selenium [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	0.1	0.1
Sulfur [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	270	270
Zinc [mg/L]	08-Jun-20	14:00	09-Jun-20	16:53	1800	510

E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

Note: Metals and mercury were analyzed on the as-received sample.

The E. coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.



SGS Canada Inc.

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LR Report : CA30046-JUN20

Carrie Greenlaw

Project Specialist,

Environment, Health & Safety

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09-June-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
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Date Rec. : 02 June 2020
LR Report: CA30047-JUN20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					01-Jun-20 10:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	9.0
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
E.Coli [cfu/100mL]	02-Jun-20	16:40	05-Jun-20	07:42	0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	04-Jun-20	17:11	09-Jun-20	15:11	4
Total Suspended Solids [mg/L]	05-Jun-20	07:53	05-Jun-20	15:43	8
Phosphorus (total) [mg/L]	05-Jun-20	11:24	08-Jun-20	14:14	0.21
Ammonia+Ammonium (N) [as N mg/L]	04-Jun-20	15:35	05-Jun-20	11:30	0.2

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

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23-June-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
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N0M 2A0, Canada

Date Rec. : 16 June 2020
LR Report: CA30228-JUN20

Copy: #1

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					15-Jun-20 13:50
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	4.0
E.Coli [cfu/100mL]	16-Jun-20	17:00	19-Jun-20	10:45	3
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	18-Jun-20	18:07	23-Jun-20	15:32	< 2
Total Suspended Solids [mg/L]	18-Jun-20	16:14	23-Jun-20	09:42	2
Phosphorus (total) [mg/L]	18-Jun-20	19:50	22-Jun-20	14:29	0.23
Ammonia+Ammonium (N) [as N mg/L]	19-Jun-20	17:07	19-Jun-20	15:08	0.4
Unionized Ammonia @temp15 [mg/L as N]	18-Jun-20	14:22	19-Jun-20	15:08	< 0.001
pH@temp15 [pH Units]	18-Jun-20	14:22	19-Jun-20	14:28	6.77

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.



Carrie Greenlaw
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26-June-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 19 June 2020
LR Report: CA30288-JUN20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 36D07 Sludge
Sample Date & Time					19-Jun-20 10:06
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	11.6
Temperature Upon Receipt [°C]	---	---	---	---	7.0
E. Coli [cfu/1g dried wgt]	19-Jun-20	15:00	22-Jun-20	10:37	4667
E. Coli [cfu/100mL]	19-Jun-20	15:00	22-Jun-20	10:37	7000
Total Solids [mg/L]	22-Jun-20	21:01	24-Jun-20	09:00	15000
Volatile Solids [mg/L]	22-Jun-20	21:01	24-Jun-20	09:00	9400
Total Kjeldahl Nitrogen [as N mg/L]	22-Jun-20	14:22	25-Jun-20	11:30	1070
Ammonia+Ammonium (N) [as N mg/L]	22-Jun-20	15:40	23-Jun-20	15:49	438
Nitrite (as N) [mg/L]	23-Jun-20	18:19	24-Jun-20	16:21	0.5
Nitrate (as N) [mg/L]	23-Jun-20	18:19	24-Jun-20	16:21	< 0.3
Nitrate + Nitrite (as N) [mg/L]	23-Jun-20	18:19	24-Jun-20	16:21	0.5
Arsenic [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	< 0.1
Cadmium [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	0.008
Cobalt [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	0.07
Chromium [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	1.5
Copper [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	5.8
Mercury [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	0.014
Potassium [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	58
Molybdenum [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	0.13
Nickel [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	0.37
Phosphorus (Total) [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	430
Lead [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	0.2
Sulfur [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	260
Selenium [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	< 0.1
Zinc [mg/L]	25-Jun-20	15:00	25-Jun-20	22:26	5

Note: Metals and mercury were analyzed on the as-received sample.
 The E. coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.



SGS Canada Inc.

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LR Report : CA30288-JUN20

Carrie Greenlaw
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**SGS Canada Inc.**

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07-July-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
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Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 30 June 2020
LR Report: CA30414-JUN20

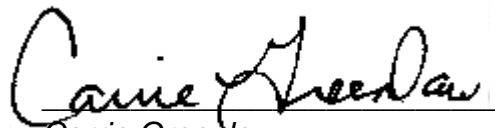
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					29-Jun-20 11:40
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	10.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
E.Coli [cfu/100mL]	30-Jun-20	16:50	02-Jul-20	15:05	3
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	02-Jul-20	16:40	07-Jul-20	13:45	2
Total Suspended Solids [mg/L]	03-Jul-20	09:13	06-Jul-20	16:18	2
Phosphorus (total) [mg/L]	02-Jul-20	18:39	03-Jul-20	16:16	0.31
Ammonia+Ammonium (N) [as N mg/L]	02-Jul-20	18:34	03-Jul-20	14:09	0.2

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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14-July-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 07 July 2020
LR Report: CA30084-JUL20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C2 Raw Sewage
Sample Date & Time					06-Jul-20 09:05
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	10.1
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	5.0
Biochemical Oxygen Demand (BOD5) [mg/L]	08-Jul-20	17:22	13-Jul-20	15:44	265
Total Suspended Solids [mg/L]	09-Jul-20	08:13	10-Jul-20	08:48	114
Total Kjeldahl Nitrogen [as N mg/L]	14-Jul-20	13:44	14-Jul-20	16:10	40.0
Phosphorus (total) [mg/L]	08-Jul-20	17:23	09-Jul-20	13:00	3.76



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21-July-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Date Rec. : 14 July 2020
LR Report: CA30240-JUL20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					13-Jul-20 11:20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	11.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
E.Coli [cfu/100mL]	14-Jul-20	17:10	16-Jul-20	12:06	20
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	16-Jul-20	17:10	21-Jul-20	13:45	4
Total Suspended Solids [mg/L]	17-Jul-20	13:23	20-Jul-20	09:06	3
Phosphorus (total) [mg/L]	16-Jul-20	16:57	17-Jul-20	19:58	0.30
Ammonia+Ammonium (N) [as N mg/L]	16-Jul-20	16:35	17-Jul-20	20:44	0.2

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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21-July-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
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Date Rec. : 14 July 2020
LR Report: CA30241-JUL20

Copy: #1

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Bypass - Final Effluent
Sample Date & Time					11-Jul-20 17:17
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	11.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	16-Jul-20	17:10	21-Jul-20	13:45	10
Total Suspended Solids [mg/L]	17-Jul-20	13:23	20-Jul-20	09:06	15
Phosphorus (total) [mg/L]	16-Jul-20	16:57	20-Jul-20	15:39	1.02
Ammonia+Ammonium (N) [as N mg/L]	16-Jul-20	16:35	17-Jul-20	20:44	1.2

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04-August-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Phone: 519-666-0190 ext 255
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Date Rec. : 28 July 2020
LR Report: CA30424-JUL20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					27-Jul-20 12:15
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	6.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	10.0
E.Coli [cfu/100mL]	28-Jul-20	16:10	31-Jul-20	07:46	8
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	29-Jul-20	17:43	04-Aug-20	15:01	2
Total Suspended Solids [mg/L]	29-Jul-20	11:52	04-Aug-20	10:07	4
Phosphorus (total) [mg/L]	29-Jul-20	18:46	31-Jul-20	16:18	0.29
Ammonia+Ammonium (N) [as N mg/L]	29-Jul-20	18:45	30-Jul-20	13:44	0.3

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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Environment, Health & Safety

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18-August-2020**Mun of Middlesex Centre (Komoka WWTP)****Attn : Brian Watson**

10227 Ilderton Rd.
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Date Rec. : 11 August 2020
LR Report: CA30145-AUG20

Copy: #1

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					10-Aug-20 13:20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.9
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	3.0
E.Coli [cfu/100mL]	11-Aug-20	16:25	13-Aug-20	17:39	4
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	12-Aug-20	17:24	17-Aug-20	17:19	2
Total Suspended Solids [mg/L]	13-Aug-20	14:11	14-Aug-20	13:40	3
Ammonia+Ammonium (N) [as N mg/L]	12-Aug-20	17:15	14-Aug-20	12:05	0.2
Phosphorus (total) [mg/L]	12-Aug-20	17:53	13-Aug-20	16:30	0.26

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



Carrie Greenlaw
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01-September-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
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Date Rec. : 25 August 2020
LR Report: CA30360-AUG20

Copy: #1

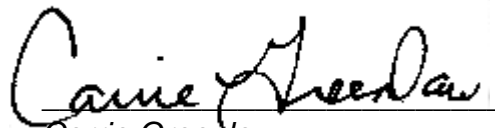
Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					24-Aug-20 11:40
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.5
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	6.0
E.Coli [cfu/100mL]	25-Aug-20	15:35	28-Aug-20	12:54	4
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	26-Aug-20	17:22	31-Aug-20	15:44	3
Total Suspended Solids [mg/L]	26-Aug-20	13:37	28-Aug-20	08:34	< 2
Phosphorus (total) [mg/L]	26-Aug-20	17:48	27-Aug-20	15:58	0.15
Ammonia+Ammonium (N) [as N mg/L]	26-Aug-20	18:24	27-Aug-20	17:41	0.4

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.


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15-September-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Phone: 519-666-0190 ext 255
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Date Rec. : 08 September 2020
LR Report: CA30099-SEP20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					07-Sep-20 14:43
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	11.0
E.Coli [cfu/100mL]	08-Sep-20	17:30	11-Sep-20	08:47	8
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	09-Sep-20	17:32	14-Sep-20	19:41	< 2
Total Suspended Solids [mg/L]	10-Sep-20	15:05	14-Sep-20	11:28	2
Phosphorus (total) [mg/L]	10-Sep-20	22:00	11-Sep-20	19:19	0.10
Ammonia+Ammonium (N) [as N mg/L]	10-Sep-20	21:20	11-Sep-20	15:43	0.2
Unionized Ammonia @temp15 [mg/L as N]	10-Sep-20	14:34	11-Sep-20	15:43	< 0.001
pH@temp15 [pH Units]	10-Sep-20	14:34	14-Sep-20	12:25	7.23

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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24-September-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 15 September 2020
LR Report: CA30218-SEP20

10227 Ilderton Rd.
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D07 Sludge #1
Sample Date & Time					14-Sep-20 17:25
Temperature Upon Receipt [°C]					7.0
Total Solids [%]	16-Sep-20	19:43	18-Sep-20	15:12	1.24
Volatile Solids [%]	16-Sep-20	19:43	22-Sep-20	17:21	0.67
Specific Gravity	16-Sep-20	19:43	18-Sep-20	15:12	1.0
Nitrite (as N) [mg/kg]	17-Sep-20	23:41	21-Sep-20	09:44	20
Nitrate (as N) [mg/kg]	17-Sep-20	23:41	21-Sep-20	09:44	<30
Nitrate + Nitrite (a) [mg/kg]	17-Sep-20	23:41	21-Sep-20	09:44	<30
Total Kjeldahl Nitrogen [as N mg/kg]	18-Sep-20	12:17	22-Sep-20	15:25	76000
Ammonia+Ammonium (N) [as N mg/kg]	16-Sep-20	13:28	17-Sep-20	12:28	36000
Mercury [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	1.1
Mercury [mg/L]	18-Sep-20	12:00	18-Sep-20	13:45	0.014
Arsenic [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	<8
Arsenic [mg/L]	18-Sep-20	12:00	18-Sep-20	13:45	< 0.1
Cadmium [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	0.7
Cadmium [mg/L]	18-Sep-20	12:00	18-Sep-20	13:45	0.008
Cobalt [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	6
Cobalt [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	0.08
Chromium [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	120
Chromium [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	1.6
Copper [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	500
Copper [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	6.1
Molybdenum [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	13
Molybdenum [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	0.16
Nickel [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	35
Nickel [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	0.44
Lead [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	13
Lead [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	0.2
Selenium [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	<8
Selenium [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	< 0.1

SGS Canada Inc.

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LR Report : CA30218-SEP20

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	6: 36D07 Sludge #1
Zinc [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	560
Zinc [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	7
Phosphorus [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	45000
Phosphorus (Total) [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	560
Potassium [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	5200
Potassium [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	65
Sulphur [mg/kg]	18-Sep-20	12:00	18-Sep-20	13:45	12000
Sulfur [mg/L]	18-Sep-20	12:00	18-Sep-20	13:46	150
E. Coli [cfu/1g dried wgt]	15-Sep-20	15:50	17-Sep-20	11:11	32258
E.Coli [cfu/100mL]	15-Sep-20	15:50	17-Sep-20	11:11	40000

Sample matrix = Sludge/Biosolids Solution

Metals, TKN, Ammonia + Ammonium, Nitrite, Nitrate and Nitrates calculated and reported in mg/kg on a dried weight basis. Detection Limits reflect this calculation

Note: E. Coli analysis (cfu/100ml) was completed at the SGS London Laboratory.

The E. coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

**SGS Canada Inc.**

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24-September-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Date Rec. : 15 September 2020
LR Report: CA30219-SEP20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Bypass - Final Effluent
Sample Date & Time					14-Sep-20 08:09
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	8.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	7.0
E.Coli [cfu/100mL]	15-Sep-20	15:45	17-Sep-20	11:10	< 1000
E.Coli [cfu/100mL]	16-Sep-20	16:25	18-Sep-20	14:47	490 UAL
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	17-Sep-20	18:10	22-Sep-20	16:52	5
Total Suspended Solids [mg/L]	17-Sep-20	07:36	18-Sep-20	11:52	8
Phosphorus (total) [mg/L]	19-Sep-20	11:34	21-Sep-20	12:44	0.24
Ammonia+Ammonium (N) [as N mg/L]	18-Sep-20	18:19	21-Sep-20	14:00	2.4

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

E. coli was re-assayed after the recommended holding time of 48 hours.

UAL - Unreliable: Sample Age Exceeds Normal Limit


Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

**SGS Canada Inc.**

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29-September-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Date Rec. : 22 September 2020
LR Report: CA30333-SEP20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					21-Sep-20 08:25
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.2
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
E.Coli [cfu/100mL]	22-Sep-20	12:40	24-Sep-20	11:51	6
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	23-Sep-20	19:02	28-Sep-20	17:57	< 2
Total Suspended Solids [mg/L]	23-Sep-20	18:10	25-Sep-20	17:57	5
Phosphorus (total) [mg/L]	26-Sep-20	12:00	28-Sep-20	16:48	0.25
Ammonia+Ammonium (N) [as N mg/L]	24-Sep-20	21:15	25-Sep-20	16:29	1.4

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.

Kimberley Didsbury
Project Specialist,
Environment, Health & Safety

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10-November-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Date Rec. : 03 November 2020
LR Report: CA30025-NOV20

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					02-Nov-20 10:24
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.4
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	10.0
E.Coli [cfu/100mL]	03-Nov-20	16:20	05-Nov-20	13:45	33
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	05-Nov-20	17:21	10-Nov-20	14:22	3
Total Suspended Solids [mg/L]	06-Nov-20	07:35	09-Nov-20	12:29	5
Phosphorus (total) [mg/L]	06-Nov-20	20:00	10-Nov-20	13:30	0.29
Ammonia+Ammonium (N) [as N mg/L]	05-Nov-20	17:00	06-Nov-20	12:04	1.3
Unionized Ammonia @temp15 [mg/L as N]	05-Nov-20	17:00	10-Nov-20	14:01	0.004
pH@temp15 [pH Units]	06-Nov-20	15:26	09-Nov-20	19:13	7.05

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.


Carrie Greenlaw
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Environment, Health & Safety

**SGS Canada Inc.**

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 Phone: 705-652-2000 FAX: 705-652-6365

15-October-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 07 October 2020
LR Report: CA30136-OCT20

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
 Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C2 Raw Sewage	6: 1A0C6 Final Effluent
Sample Date & Time					07-Oct-20	07-Oct-20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	17.6	17.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0	8.0
E.Coli [cfu/100mL]	08-Oct-20	16:45	09-Oct-20	15:44	---	7
Biochemical Oxygen Demand (BOD5) [mg/L]	08-Oct-20	18:46	13-Oct-20	17:31	130	---
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	08-Oct-20	17:55	13-Oct-20	18:57	---	2
Total Suspended Solids [mg/L]	10-Oct-20	10:19	14-Oct-20	15:25	229	4
pH@temp15 [pH Units]	09-Oct-20	16:41	13-Oct-20	15:54	---	6.94
Total Kjeldahl Nitrogen [as N mg/L]	13-Oct-20	07:11	14-Oct-20	14:56	42.3	---
Phosphorus (total) [mg/L]	09-Oct-20	16:28	13-Oct-20	13:59	3.86	0.32
Ammonia+Ammonium (N) [as N mg/L]	08-Oct-20	18:00	10-Oct-20	20:47	---	5.0
Unionized Ammonia @temp15 [mg/L as N]	09-Oct-20	16:41	13-Oct-20	15:54	---	0.012

*E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.
 Note: Federal unionized ammonia at 15 °C calculated using Lab pH results performed at this temperature.


 Carrie Greenlaw
 Project Specialist,
 Environment, Health & Safety

**SGS Canada Inc.**

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 Lakefield - Ontario - K0L 2H0
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27-October-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 20 October 2020
LR Report: CA30297-OCT20

10227 Ilderton Rd.
 Ilderton, ON
 N0M 2A0, Canada

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Phone: 519-666-0190 ext 255
 Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C2 Raw Sewage	6: 1A0C6 Final Effluent
Sample Date & Time					19-Oct-20 10:30	19-Oct-20 10:30
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	4.3	4.3
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0	8.0
E.Coli [cfu/100mL]	20-Oct-20	15:00	22-Oct-20	12:04	---	8
Biochemical Oxygen Demand (BOD5) [mg/L]	22-Oct-20	17:29	27-Oct-20	11:16	81	---
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	21-Oct-20	17:19	26-Oct-20	16:03	---	4
Total Suspended Solids [mg/L]	21-Oct-20	15:33	27-Oct-20	09:13	58	8
Alkalinity [mg/L as CaCO ₃]	23-Oct-20	14:49	26-Oct-20	15:12	299	---
pH@temp15 [pH Units]	23-Oct-20	13:47	26-Oct-20	12:19	7.38	---
Phosphorus (total) [mg/L]	21-Oct-20	17:25	22-Oct-20	22:15	3.51	0.18
Total Kjeldahl Nitrogen [as N mg/L]	22-Oct-20	17:56	26-Oct-20	10:45	50.3	---
Ammonia+Ammonium (N) [as N mg/L]	21-Oct-20	15:52	22-Oct-20	14:18	---	0.3

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.


 Carrie Greenlaw
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08-December-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

Date Rec. : 01 December 2020
LR Report: CA30022-DEC20

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

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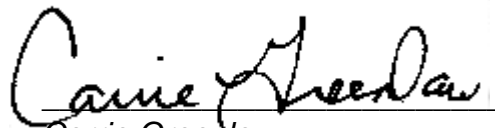
Phone: 519-666-0190 ext 255
Fax: 519-666-0271

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					30-Nov-20 09:04
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.6
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	9.0
E.Coli [cfu/100mL]	01-Dec-20	15:05	03-Dec-20	10:12	5
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	02-Dec-20	17:17	07-Dec-20	15:53	3
Total Suspended Solids [mg/L]	02-Dec-20	10:41	03-Dec-20	11:28	8
Phosphorus (total) [mg/L]	02-Dec-20	15:00	03-Dec-20	15:20	0.22
Ammonia+Ammonium (N) [as N mg/L]	02-Dec-20	15:41	03-Dec-20	14:37	0.1

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



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**SGS Canada Inc.**

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23-November-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

10227 Ilderton Rd.
Ilderton, ON
N0M 2A0, Canada

Phone: 519-666-0190 ext 255
Fax: 519-666-0271

Date Rec. : 17 November 2020
LR Report: CA30216-NOV20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					16-Nov-20 12:00
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	3.0
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
E.Coli [cfu/100mL]	17-Nov-20	15:45	19-Nov-20	09:27	2
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	18-Nov-20	17:03	23-Nov-20	15:26	< 2
Total Suspended Solids [mg/L]	19-Nov-20	10:42	20-Nov-20	13:04	4
Phosphorus (total) [mg/L]	19-Nov-20	09:02	20-Nov-20	10:35	0.20
Ammonia+Ammonium (N) [as N mg/L]	18-Nov-20	14:44	19-Nov-20	10:27	0.2

Note: E. Coli analysis was completed at the SGS Environmental Services - London Laboratory.



Carrie Greenlaw
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Environment, Health & Safety

**SGS Canada Inc.**

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22-December-2020

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Date Rec. : 15 December 2020
LR Report: CA30225-DEC20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					14-Dec-20 12:06
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	5.5
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	16-Dec-20	17:15	21-Dec-20	17:39	6
Total Suspended Solids [mg/L]	16-Dec-20	15:14	17-Dec-20	12:20	6
Phosphorus (total) [mg/L]	16-Dec-20	19:46	17-Dec-20	14:48	0.18
Ammonia+Ammonium (N) [as N mg/L]	16-Dec-20	15:15	17-Dec-20	13:43	0.1

Carrie Greenlaw
Project Specialist,
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06-January-2021

Mun of Middlesex Centre (Komoka WWTP)

Attn : Brian Watson

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Phone: 519-666-0190 ext 255
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Date Rec. : 29 December 2020
LR Report: CA30414-DEC20

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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: 1A0C6 Final Effluent
Sample Date & Time					28-Dec-20 09:20
Temperature Upon Receipt [at London Lab °C]	---	---	---	---	7.8
Temperature Upon Receipt [at Lakefield Lab °C]	---	---	---	---	8.0
Carbonaceous Biochemical Oxygen Demand [(CBOD5) mg/L]	31-Dec-20	12:51	05-Jan-21	11:40	5
Total Suspended Solids [mg/L]	04-Jan-21	09:34	05-Jan-21	13:18	10
Phosphorus (total) [mg/L]	05-Jan-21	15:40	06-Jan-21	14:23	0.28
Ammonia+Ammonium (N) [as N mg/L]	05-Jan-21	15:33	06-Jan-21	11:51	0.7

Carrie Greenlaw
Project Specialist,
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