

COCHRANE

WATER / WASTE WATER SERVICES



WASTEWATER TREATMENT PLANT

2023 ANNUAL REPORT

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2023 Annual Report

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ANNUAL
PERFORMANCE
REPORT

Annual Performance Report

This report is prepared to comply with Amended Environmental Compliance Approval Number 2737-BD4JYH issued June 28, 2019. The report shall contain:

- (a) A summary and interpretation of all Influent monitoring data, including sewage characteristics, flow rates and a comparison to the values used in the design of the Works;

FLOWS	
Total Flow	<i>591,313 cubic meters</i>
Average Daily Flow	<i>1,497 cubic meters</i>
Peak Hydraulic Flow	<i>3,084 cubic meters</i>

RAW SEWAGE RESULTS

RAW SEWAGE	MONTHLY AVERAGE RESULTS
BOD ₍₅₎	215.79 mg/l
TOTAL SUSPENDED SOLIDS	228.42 mg/l
TOTAL PHOSPHORUS	6.09 mg/l
TKN (as N)	108.78 mg/l
AMMONIA & AMMONIA NITROGEN	37.42 mg/l
pH	7.33 mg/L

- (b) A summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

FINAL EFFLUENT RESULTS

FINAL EFFLUENT	ANNUAL AVERAGE RESULTS
BOD ₍₅₎	12.17 mg/l
TOTAL SUSPENDED SOLIDS	12.03 mg/l
TOTAL PHOSPHORUS	0.31 mg/l
TKN (as N)	14.59 mg/l
AMMONIA	0.53 mg/l
CHLORINE RESIDUAL	0.0 mg/l
NITRITE	0.05 mg/l
NITRATE	19.15 mg/l
CBOD ₍₅₎	12.23 mg/l
E.COLI	970.24 CFU/100ml
WAS pH MAINTAINED BETWEEN 6.0-9.5 @ ALL TIMES?	Yes

The total flow in 2023 was 591,313 cubic meters which represents a 15 % decrease from 2022. The total flow in 2023 was 29.6 % of the average day flow design capacity.

The following represents removal efficiencies for the year 2023.

BOD ₅	92.18%
TOTAL SUSPENDED SOLIDS	93.43%
TOTAL PHOSPHORUS	92.55%
TKN (as N)	70.81%
AMMONIA	95.39%
AVERAGE REMOVAL EFFICIENCY	89.5%

The above represents a increase in overall operating efficiency of 0.4 % over the year 2023.

- (c) A summary of any deviations from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;

None

- (d) A summary of all operating issues encountered and corrective actions taken;

None

- (e) A summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

1. *Drained and cleaned Contact Chamber*
2. *Cleaned out Grit Chamber*
3. *Changed hose on Ferric Pump*
4. *Replaced bulbs on ultraviolet system*
5. *Replaced filters on Blower*

Other maintenance involved routine oiling, greasing, cleaning, servicing etc.

- (f) A summary of any effluent quality assurance or control measures undertaken;

The monitoring program consists of regular daily rounds ensuring all equipment is functioning and that daily temperature, pH levels, chlorine residuals, dissolved oxygen, Phosphorus and Ammonia tests are recorded, and controlled. Sludge Blanket levels are also monitored and controlled on a daily basis along with scum removal. Monthly samples are taken for BOD, Suspended Solids, TKN, Nitrite, Nitrate, Weekly Samples were taken for E.Coli and Quarterly Samples were taken for Acute Lethality.

- (g) A summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in the Approval or recommended by the manufacturer;

Attached to this report is the 2022 calibration records for the instrumentation at the Waste Water Treatment Plant. In 2023 the instruments will once again be checked for their accuracy.

- (h) A summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any required under the following situations: (i) when any of the design objectives is not achieved more than 50% of the time in a year or there is an increasing trend in deterioration of Final Effluent quality and (ii) when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

The attached Data Summary shows the Cochrane Waste Water Treatment Plant has not exceeded the effluent concentrations for the Biochemical Oxygen Demand (20 mg/l), Total Suspended Solids (20 mg/L) and Phosphorus Criteria (1.0 mg/l), as specified in Schedule C of the aforementioned certificate of approval. The pH level has been maintained.

Compliance - (Certificate of Approval) The peak hydraulic flow capacity of 11,500 cu. Meters / day was not exceeded during the year 2023.

- (i) A tabulation of the volume of sludge generated in the reporting period, an outlined of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

It is anticipated that sludge volume haulage for the year 2023 should be equal to or less than that of 2022 as the Plant is operating at or close to its maximum efficiency.

SLUDGE VOLUME HAULED

YEAR	SLUDGE AMOUNT HAULED
2019	3504 M3
2020	3161 M3
2021	4325 M3
2022	1372 M3
2023	2214 M3

The Town has retained E360 of Timmins Ontario (C of A A-920134, R-004-1111521405) to haul and handle the sludge form the Water pollution Control Plant. The Town of Cochrane has also retained C& H Hauling of Matheson Ontario (C of A 9477-5MGIMT, ECA # H11000003605) to haul and handle the sludge from the Water Pollution Control Plant. C&H Pumping advises that the sludge is dumped at the Landfill Sites (Lot 2, Con2 Fournier Township and Lot 2, Con 4 Carr Township) and not used for any other purpose.

- (j) A summary of any complaints received and any steps taken to address the complaints;

None

- (k) A summary of all Bypass, spill, Overflows within the meaning of Part X of EPA and abnormal discharge events and other abnormal operating conditions;

The bypass alarm signaled 8 overflows for the year 2023.

DATE	TYPE	DURATION (hours)	FLOW (m3)
2023-04-10	Overflow	220.5	1933
2023-04-30	Overflow	55.5	7470
2023-06-30	Overflow	15	563.9
2023-08-02	Overflow	28	312.8
2023-08-11	Overflow	12	9347
2023-09-07	Overflow	8	569.9
2023-09-13	Overflow	4	500

The Overflow events were triggered by spring runoff and heavy rains. All

bypass /overflow events have been tested for all specified parameters, as per attached Bypass Summary.

The log date, time and duration of any bypasses (overflow) or upset condition will be recorded and sampled for BOD, suspended Solids and Total Phosphorus. Further, the Spills Action Centre (SAC) will be notified, with the completed form sent to the MOE District Office, which is a requirement.

- (l) A copy of all Notice of Modifications to Sewage Works submitted to the Water Supervisor under paragraph 1.d. of Condition 10, with a summary report on status of implementation of all modifications;

None

- (m) A summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overflow Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflow with estimated budget forecast for the year following that for which the report is submitted.

None

This is the report on the Cochrane Waste Water Treatment Plant for the year 2023. I certify that the information in this document and all the attachments are correct, accurate and complete to the best of my knowledge.

Prepared by,
Melissa Hoogenhoud
Environmental Services and Compliance Supervisor

ANNUAL SUMMARY

ANNUAL SUMMARY 2023

Municipality: **Cochrane (PUC)**
 Project Name: **Cochrane Water Pollution Control Plant**
 Project Number: **120000355**
 Project Location: **Cochrane, ON**

Month	Parameter	January	February	March	April	May	June	July	August	September	October	November	December	TOTAL	AVERAGE	MAXIMUM	MINIMUM
	Total Flow	41033.64	30641.35	38629.28	95073.85	60515.09	34376.13	33882.12	49383.29	49071.81	65465.78	48356.1	44884.61	591313.05	49276.088	95073.85	30641.35
Influent	Peak Rate	2492	2231	1832	6087	5293	1935	1560.34	2935	3658	4148	2698.11	2138.24	37007.69	3083.97	6087	1560.34
Bypass	Plant-Vol.				1933.08	7470	563.93		9659.76	1069.9				20696.67	4139.33	9659.76	563.93
	Time - Hrs				220.5	55.5	15		40	12				343	68.60	220.5	12
Raw	Susp. solids	175	397	293	380	41	233	350	254	118	178	118	204	2741	228.42	397	41
	BOD	270	300	308	306	65.5	150	170	220	230	190	110	270	2589.5	215.79	308	65.5
	TKN	175	178	92	82.2	44.1	17.7	70.8	206	189	97.9	70.5	82.1	1305.3	108.78	206	17.7
	Phosphorus	12	9.36	7.82	8.89	2.34	0.558	6.77	5.43	3.55	8.33	2.33	5.76	73.138	6.09	12	0.558
	Ammonia	43.8	58.4	52.6	50	16.9	0.92	43.3	37	58.9	37.9	16.3	33	449.02	37.42	58.9	0.92
	Nitrate	0.1	0.05	0.05	0.05	0.1	37.3	0.1	0.05	0.1	0.05	0.05	0.25	38.25	3.19	37.3	0.05
	Nitrite	0.1	0.05	0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.24	0.25	1.19	0.10	0.25	0.05
	Phosphate	8.19	20.3	15.9	18.3	2.18	0.142	15.1	8.3	4.9	14.1	2.31	9.13	118.852	9.90	20.3	0.142
	pH	7.8	7.8	7.93	7.35	7.33	7.21	7.47	7.11	7.09	7.19	6.97	6.76	88.01	7.33	7.93	6.76
	CBOD	220	300	130	220	58	110	140	200	180	91	140	220	2009	167.42	300	58
Effluent	Susp. solids	5.3	10	21	9.6	11	35.7	4.7	1.3	2	34	1.7	8	144.3	12.03	35.7	1.3
	BOD	2.7	4.2	3.9	5.5	4.7	110	2.1	2.1	3.8	1	2.3	3.7	146	12.17	110	1
	Phosphorus	0.902632	0.1493158	0.13815	0.2449444	0.13	0.1587273	0.4275789	0.44025	0.3665294	0.3281579	0.2098325	0.2350714	3.7314396	0.31	0.902632	0.13025
	Ammonia	0.8938462	0.5753846	0.396	1.3283333	0.2589474	0.3682353	0.4806667	0.4977778	0.5490909	0.2084211	0.3546667	0.4177778	6.3291478	0.53	1.3283333	0.2084211
	Nitrate	1.43	31.9	27.3	3.5	11.3	37.4	0.05	19.1	21.6	31.9	19.9	24.4	229.78	19.15	37.4	0.05
	Nitrite	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.01	0.61	0.05	0.1	0.01
	TKN	16.1	19.4	14.4	33.9	11.4	19.6	11.5	17.5	15.2	1.6	4.5	10	175.1	14.59	33.9	1.6
	CBOD	2.2	2.8	2.6	3.5	1.5	120	1.8	1.8	4.1	1	2.2	3.2	146.7	12.23	11.9	0.057
	Phosphate	0.18	0.164	0.275	0.303	0.072	0.155	11.9	0.379	0.194	0.121	0.057	0.138	13.938	0.19	4380	0.057
	E.Coli	9.8	26.75	71.75	1125.75	1197.8	2836	4380	391.8	30	232.75	370.2		10672.6	970.24	4380	9.8
	Acute Lethality		0			0				0		0	163.25	163.25	32.65	163.25	0
Date	Air Used																
	Influent Temp	12.526316	12.336842	13.16	10.394444	12.619048	15.922727	17.521053	16.842857	16.207143	14.995	13.464706	13.414286	169.40442	14.12	17.521053	10.394444
	Influent pH	7.8115789	8.1457895	7.7515	7.5633333	7.5947619	7.5540909	7.4305263	7.3585714	7.442857	7.641	7.7058824	7.6864286	91.68632	7.64	8.1457895	
	Aeration Temp.	9.7105263	10.175	11.182353	10.417647	13.572222	17.405263	19.229412	18.25	17.15	14.738889	10.907143	10.728571	163.46703	13.62	19.229412	9.7105263
	30 Min. S.S.	73.611111	86.375	63.0625	31.382353	52.611111	46.588235	46.736842	50.090909	54.8666667	43.88889	34	68.035714	651.24933	54.27	86.375	31.382353
	D.O. % Level	3.9805263	5.614375	6.6441176	8.218125	5.0233333	3.8985	2.2473684	3.756	3.2593333	6.3805556	7.0107143	5.7592857	61.792235	5.15	8.218125	2.2473684
	Effluent pH	6.9552632	6.38125	6.1858824	7.1611765	7.1016667	6.9355	6.8210553	6.758	6.8307143	7.0661111	7.0257143	6.895	82.117334	6.84	7.1611765	6.1858824
	Effluent Temp	9.5473684	8.8415789	10.6335	10.555556	12.971429	17.854545	19.715789	18.56	16.764286	14.984211	12.470588	11.735714	164.63457	13.72	19.715789	8.8415789
Plant	Wasting Vol. m3	39583.37	29180.12	34122.72	126144.35	82698.97	51653.63	38366.57	50421.4	52381.94	71416.16	52919.48	50428.37	679317.08	56609.76	0	0
	Chlorine (Kg)													0			
	Cl Dosage (mg/l)													0		0	0
	Cl Residual(mg/l)	0.252263	0.0049188	0.0049118	0.0020176	0.0019	0.0005	0	0	0	0	0	0	0.2664779	0.02	0.252263	0
	Cl2 in Creek													0	#DIV/0!	0	0
Grit	Hauled (Volume)													0	0.00	0	0
Sludge Hauled	Liquid Volume	177.92	240	335.5	202.5	216.5	22.5	269.5	163.64	163.64	240.91		181.8	2214.41			
Loading mg/L	Phosphorus	0.1194783	0.1634013	0.1778878	0.7762604	0.254261	0.181881	0.536566	0.7013224	0.6423665	0.6930036	0.362366	0.3403577	4.949152	0.4124293	0.7762604	0.1194783
	BOD	3.5738977	4.5962025	5.2021806	17.430206	9.1748685	126.04581	2.635276	3.3453196	6.6597456	2.1117994	3.9721082	5.3571954	190.10461	15.842051	126.04581	2.1117994
	Suspended Solids	7.0154288	10.943339	27.040496	30.423632	21.473096	40.907595	5.8979987	2.0709122	3.5051293	71.801178	2.9359061	11.583125	235.59784	19.633153	71.801178	2.0709122

PERFORMANCE

ASSESSMENT

REPORTS

XX

SEWAGE PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY:	TOWN OF COCHRANE	YEAR:	2023
PROJECT:	Cochrane WPCP	WATER COURSE:	Lillabelle Lake / Abitibi River
PROJECT NUM.:	No. 1200355	DESIGN CAPACITY:	5,600 cu. Meters / day
DESCRIPTION:	Extended Aeration		

MONTH	FLOWS			BIOCHEMICAL O2 DEMAND				SUSPENDED SOLIDS				PHOSPHORUS				DISINFECTION		CAUSTIC	
	TOTAL FLOW 1000M3	AVG DAY FLOW 1000M3	MAX DAY FLOW 1000M3	AVG RAW BOD (mg/L)	AVG EFF BOD (mg/L)	LOADING BOD (mg/L)	PERCENT REMOVAL	AVG RAW SS (mg/L)	AVG EFF SS (mg/L)	LOADING SS (mg/L)	PERCENT REMOVAL	AVG RAW PHOS. (mg/L)	AVG EFF PHOS. (mg/L)	LOADING PHOS. (mg/L)	PERCENT REMOVAL	AVG CL2 RES (mg/L)	KG.S USED	AVG DOSE (mg/L)	KG.S USED
JAN	41.03	1.324	2.492	270.0	2.70	3.57	99.0	175.0	5.30	7.02	97.0	12.0	0.90	1.20	92.5	0.2523			
FEB	30.64	1.094	2.331	300.0	4.20	4.59	98.6	397.0	10.00	10.94	97.5	9.4	0.15	0.16	98.4	0.0049			
MAR	38.63	1.288	1.839	308.0	3.90	5.02	98.7	293.0	21.00	27.05	92.8	7.8	0.14	0.18	98.2	0.0049			
APR	95.07	3.169	6.087	306.0	5.50	17.43	98.2	380.0	9.60	30.42	97.5	8.9	0.24	0.78	97.2	0.0020			
MAY	60.52	1.952	5.292	65.5	4.70	9.17	92.8	41.0	11.00	21.47	73.2	2.3	0.13	0.25	94.4	0.0019			
JUN	34.38	1.146	1.935	150.0	110.00	126.06	26.7	233.0	35.70	40.91	84.7	0.6	0.16	0.18	71.6	0.0050			
JUL	33.88	1.255	1.560	170.0	2.10	2.64	98.8	350.0	4.70	5.90	98.7	6.8	0.43	0.54	93.7	0.0000			
AUG	49.38	1.593	2.935	220.0	2.10	3.35	99.0	254.0	1.30	2.07	99.5	5.4	0.44	0.70	91.9	0.0000			
SEP	49.07	1.753	3.688	230.0	3.80	6.66	98.3	118.0	2.00	3.51	98.3	3.6	0.37	0.64	89.7	0.0000			
OCT	65.46	2.112	4.148	190.0	1.00	2.11	99.5	178.0	34.00	71.81	80.9	8.3	0.33	0.69	96.1	0.0000			
NOV	48.36	1.727	2.698	110.0	2.30	3.97	97.9	118.0	1.70	2.94	98.6	2.3	0.21	0.36	91.0	0.0000			
DEC	44.88	1.448	2.138	270.0	3.70	5.36	98.6	204.0	8.00	11.58	96.1	5.8	0.24	0.34	95.9	0.0000			

TOTAL	591.303							67.7			100.0								
AVG		1.655		215.8	12.17		92.18	145.0	12.03		93.43	6.1	0.31		92.55	0.0226	#DIV/0!	#DIV/0!	#DIV/0!
MAX			6.087	100.0	110.00			6.0	35.70			12.0	0.90			0.2523	0.00	0.0	0.00
CRITERIA		5.600	11.500		20.00	230.00		4.0	20.00	230.00			1.00						

COMPLIANCE	YES			YES								YES							
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COMMENTS:

BYPASS SUMMARY

NOTIFICATION AND LAB RESULTS

1

FACILITY NAME: Cochrane Waste Water Treatment Plant YEAR: 2023

DATE: Sample Results

Date (yy/mm/dd)	Location	Type (PB/SB/STPO /CSO/SSO/STWO)	Start Time	Duration (hours)	Volume (m3)	M/E	Disinfection (Y/N)	Treatment (Y/N)	Reason Code*	BOD5 (mg/L)	SS (mg/L)	TP (mg/L)	E.Coli (/100ml)
2023-04-10	STP	STOP	12:30	220.5	1933	E	N	N	2	26.88	65.068	0.86904	4375600
2023-04-30	STP	STOP	23:20	55.5	7,470	E	N	N	2	23.1125	63.25	0.88225	1970525
2023-06-30	STP	STOP	18:30	15	563.9	E	N	N	2	85	801.5	3.77	1975000
2023-08-02	STP	STOP	17:55	28	312.8	E	N	N	1	59.95	120	1.577	1275000
2023-08-11	STP	STOP	7:20	12	9,347	E	N	N	1	97	313	4.25	200
2023-09-07	STP	STOP	2:06	8	569.9	E	N	N	1	180	708	2.525	2300000
2023-09-13	STP	STOP	11:37	4	500	E	N	N	1	8.3	39	0.567	3000

Legend

PB = Primary Bypass	M = Measured	Y = Yes	*Reason Codes:
SB = Secondary Bypass	E = Estimated	N = No	1 = Heavy Precipitation
STPO = Sewage Treatment Plant Overflow			2 = Spring Runoff
CSO = Combined Sewer Overflow			3 = Infiltration
SSO = Sanitary Sewer Overflow			4 = Mechanical/Equipment Failure
STWO = Satellite Treatment Works Overflow			5 = Pipe Failures(break/leak/plugged)
			6 = Process Upsets
			7 = Power Outages
			8 = Unknown
			9 = Other, please comment below.

Comments:

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

Spills Action Center Phone No. 1-800-268-6060
MOH Phone No. 1-800-461-1818

Date: April 10 2023 Time of Call: 12:30 a.m./(p.m.)
Reference #: 1-39943F Person Who Called: Miles Nelson
Office Called: Sec Reported By: Brian
Bypass: _____ Spill: _____ Leak: _____ Overflow:
Location of Incident: Hotteridge waste water plant
Time of Incident: 12:15 a.m./(p.m.) Receiver: L. Lable creek
Details of Incident: Overflow

Downstream Users: None
Possible Effects on Receiver, Environment or Downstream Users: None

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

Town Hall: Phone No. 272-4361 Fax No. 272-6068 Time of Call: _____

Details of Call: _____

Termination of Incident

Date: 04-18-23 Time of Call: 10:00 Person Contacted: Brenda

Time of Termination: 05:00 Approximate Volume: 1833.08 Cu. Meters

Current Status: Chlorinating? Yes: _____ No: Explain: _____

Further Action Required: None

Reported By: Miles Nelson



TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS - REVISED
Supersedes report printed: 04/17/2023 15:28

Client: Michael Nelson
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0
(705) 272-9093
Phone: michael.nelson@cochraneontario.com
Email:

Work Order Number: 495233
PO #: 11885
Regulation: Information not provided
Project #: Overflow
DWS #:
Sampled By: Michael Nelson

Date Order Received: 4/11/2023
Arrival Temperature: 21 °C

Analysis Started: 4/12/2023
Analysis Completed: 4/18/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1866507	Wastewater	Grab		4/10/2023	12:20 PM
Sewage Plant Overflow	1866508	Wastewater	Grab		4/10/2023	5:10 PM
Sewage Plant Overflow	1866509	Wastewater	Grab		4/10/2023	11:00 PM
Sewage Plant Overflow	1866510	Wastewater	Grab		4/11/2023	7:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E. coli by MF on mFC-B/CIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-B/CIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H + B
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NOR-G-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2.



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CERTIFICATE OF ANALYSIS - REVISED

Supersedes report printed: 04/17/2023 15:28

Work Order Number: 495233

Town of Cochrane - Wastewater

Method	Lab	Description	Reference
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540

REPORT COMMENTS

Report Revised to correct BOD/CBOD Results to a dilution/data entry error on sample Sewage Plant Overflow (1866508) - 041923 TP REF NC20641

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS - REVISED

Supersedes report printed: 04/17/2023 15:28

Work Order Number: 495233

Town of Cochrane - Wastewater

WORK ORDER RESULTS

Sample Description	Sample Date	Lab ID	Result	MDL	Sample Description	Sample Date	Lab ID	Result	MDL	Sample Description	Sample Date	Lab ID	Result	MDL	Sample Description	Sample Date	Lab ID	Result	MDL	Units			
Sewage Plant Overflow	4/10/2023 12:20 PM	1866507	<0.05	0.05	Sewage Plant Overflow	4/10/2023 5:10 PM	1866508	1.21	0.05	Sewage Plant Overflow	4/10/2023 11:00 PM	1866509	2.21	0.05	Sewage Plant Overflow	4/11/2023 7:00 AM	1866510	2.62	0.05	mg/L			
Sewage Plant Overflow	4/10/2023 12:20 PM	1866507	<0.05	0.05	Sewage Plant Overflow	4/10/2023 5:10 PM	1866508	0.30	0.05	Sewage Plant Overflow	4/10/2023 11:00 PM	1866509	0.26	0.05	Sewage Plant Overflow	4/11/2023 7:00 AM	1866510	0.26	0.05	mg/L			
Sewage Plant Overflow	4/10/2023 12:20 PM	1866507	1.80 [1.74]	0.01	Sewage Plant Overflow	4/10/2023 5:10 PM	1866508	0.548	0.002	Sewage Plant Overflow	4/10/2023 11:00 PM	1866509	0.450	0.005	Sewage Plant Overflow	4/11/2023 7:00 AM	1866510	4.83	0.02	mg/L			
Ammonia (as N)			6.96	0.03	Ammonia (as N)			1.42	0.01	Ammonia (as N)			1.54	0.01	Ammonia (as N)			2.18	0.01	mg/L			
PH			6.82	N/A	PH			6.91	N/A	PH			6.98	N/A	PH			7.08	N/A	PH			
Total Kjeldahl Nitrogen			38.6	0.4	Total Kjeldahl Nitrogen			7.1	0.4	Total Kjeldahl Nitrogen			6.7	0.4	Total Kjeldahl Nitrogen			9.9	0.4	mg/L			
Total Phosphorus (as P)			1.80 [1.74]	0.01	Total Phosphorus (as P)			0.548	0.002	Total Phosphorus (as P)			0.450	0.005	Total Phosphorus (as P)			4.83	0.02	mg/L			
Sample Description	Sewage Plant Overflow	Sample Date	4/10/2023 12:20 PM	Lab ID	1866507	Sample Description	Sewage Plant Overflow	Sample Date	4/10/2023 5:10 PM	Lab ID	1866508	Sample Description	Sewage Plant Overflow	Sample Date	4/10/2023 11:00 PM	Lab ID	1866509	Sample Description	Sewage Plant Overflow	Sample Date	4/11/2023 7:00 AM	Lab ID	1866510
Microbiology	Result: 4500000	MDL	100000	Result: 5500000	MDL	100000	Result: 7200000	MDL	100000	Result: 100000	MDL	100000	Result: 100000	MDL	100000	Result: 100000	MDL	100000	Result: 100000	MDL	100000	Units	CFU/100mL



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Supersedes report printed: 04/17/2023 15:28

Work Order Number: 495233

Town of Cochrane - Wastewater

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Units
Sample Date	4/10/2023 12:20 PM	4/10/2023 5:10 PM	4/10/2023 11:00 PM	4/11/2023 7:00 AM			
Lab ID	1866507	1866508	1866509	1866510			
Oxygen Demand	Result	MDL	Result	MDL	Result	MDL	Units
BOD (5 day)	99 [80]	30	41	30	14	6	16 mg/L
Carbonaceous BOD	66 [88]	30	9.2	6	15	6	14 mg/L
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	4/10/2023 12:20 PM	4/10/2023 5:10 PM	4/10/2023 11:00 PM	4/11/2023 7:00 AM			
Lab ID	1866507	1866508	1866509	1866510			
Solids	Result	MDL	Result	MDL	Result	MDL	Units
Total Suspended Solids	432	4	158	2	67	1	45.30 0.67 mg/L

LEGEND

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 Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.



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CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	495480
Company:	Town of Cochrane - Wastewater	PO #:	11885
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0 (705) 272-9093	Regulation:	Information not provided
Phone:		Project #:	Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Benoit Parent

Date Order Received:	4/12/2023	Analysis Started:	4/13/2023
Arrival Temperature:	18 °C	Analysis Completed:	4/18/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1867402	Wastewater	Grab		4/11/2023	3:00 PM
Sewage Plant Overflow	1867403	Wastewater	Grab		4/11/2023	11:00 PM
Sewage Plant Overflow	1867404	Wastewater	Grab		4/12/2023	7:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210-B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NOR-G-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540



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Town of Cochrane - Wastewater

CERTIFICATE OF ANALYSIS

Work Order Number: 495480

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495480

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Units
Sample Date	4/11/2023 3:00 PM	4/11/2023 11:00 PM	4/12/2023 7:00 AM			
Lab ID	1867402	1867403	1867404			
Anions	Result	MDL	Result	MDL	Result	MDL
Nitrate (as N)	1.86	0.05	3.35	0.05	3.04	0.05
Nitrite (as N)	0.34	0.05	<0.05	0.05	<0.05	0.05
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	4/11/2023 3:00 PM	4/11/2023 11:00 PM	4/12/2023 7:00 AM			
Lab ID	1867402	1867403	1867404			
General Chemistry	Result	MDL	Result	MDL	Result	MDL
Ammonia (as N)	1.60	0.01	1.06	0.01	2.12	0.01
pH	7.04	N/A	7.02	N/A	7.2	N/A
Total Kjeldahl Nitrogen	7.1	0.4	6.5	0.4	17.4	0.4
Total Phosphorus (as P)	0.419	0.002	0.372	0.002	0.707	0.002
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	4/11/2023 3:00 PM	4/11/2023 11:00 PM	4/12/2023 7:00 AM			
Lab ID	1867402	1867403	1867404			
Microbiology	Result	MDL	Result	MDL	Result	MDL
Escherichia coli	2530000	10000	5100000	100000	5400000 [520000]	10000
						CFU/100mL



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495480

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Units
Sample Date	4/11/2023 3:00 PM	4/11/2023 11:00 PM	4/12/2023 7:00 AM			
Lab ID	1867402	1867403	1867404			
Oxygen Demand	Result	MDL	Result	MDL	Result	MDL
BOD (5 day)	16	6	16	6	18	6
Carbonaceous BOD	19	6	15	6	16	6
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	4/11/2023 3:00 PM	4/11/2023 11:00 PM	4/12/2023 7:00 AM			
Lab ID	1867402	1867403	1867404			
Solids	Result	MDL	Result	MDL	Result	MDL
Total Suspended Solids	96.5	1	36.00	0.67	25.5	1
						mg/L

LEGEND

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 Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.



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CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0
(705) 272-9093
Phone: Melissa.Hoogenhoud@cochraneontario.com
Email:

Work Order Number: 495663
PO #: 11885
Regulation: Information not provided
Project #: Overflow
DWS #:
Sampled By: Benoit Parent

Date Order Received: 4/13/2023
Arrival Temperature: 18 °C

Analysis Started: 4/13/2023
Analysis Completed: 4/20/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1867908	Wastewater	Grab		4/12/2023	3:00 PM
Sewage Plant Overflow	1867909	Wastewater	Grab		4/12/2023	11:00 PM
Sewage Plant Overflow	1867910	Wastewater	Grab		4/13/2023	7:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E. coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2.
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540



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Town of Cochrane - Wastewater

CERTIFICATE OF ANALYSIS

Work Order Number: 495663

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495663

WORK ORDER RESULTS

Sample Description	Sample Date	Lab ID	Sample Description	Sample Date	Lab ID	Sample Description	Sample Date	Lab ID	Units
Sewage Plant Overflow	4/12/2023 3:00 PM	1867908	Sewage Plant Overflow	4/12/2023 11:00 PM	1867909	Sewage Plant Overflow	4/13/2023 7:00 AM	1867910	mg/L
Result	<0.05	MDL	Result	3.01	MDL	Result	2.79	MDL	mg/L
Nitrate (as N)	0.28	0.05	Nitrite (as N)	0.30	0.05	Nitrate (as N)	0.27	0.05	mg/L
Sewage Plant Overflow	4/12/2023 3:00 PM	1867908	Sewage Plant Overflow	4/12/2023 11:00 PM	1867909	Sewage Plant Overflow	4/13/2023 7:00 AM	1867910	mg/L
Ammonia (as N)	4.35	0.01	pH	7.12	N/A	Total Kjeldahl Nitrogen	23.5	0.4	mg/L
Total Phosphorus (as P)	0.616 [0.606]	0.002	Ammonia (as N)	0.84	0.01	pH	6.82	N/A	mg/L
Sewage Plant Overflow	4/12/2023 3:00 PM	1867908	Sewage Plant Overflow	4/12/2023 11:00 PM	1867909	Sewage Plant Overflow	4/13/2023 7:00 AM	1867910	mg/L
Sample Description	Sample Date	Lab ID	Sample Description	Sample Date	Lab ID	Sample Description	Sample Date	Lab ID	Units
Sewage Plant Overflow	4/12/2023 3:00 PM	1867908	Sewage Plant Overflow	4/12/2023 11:00 PM	1867909	Sewage Plant Overflow	4/13/2023 7:00 AM	1867910	CFU/100mL
Result	26200000	MDL	Result	6600000	MDL	Result	290000 [310000]	MDL	CFU/100mL
Escherichia coli	100000	6600000	100000	100000	290000 [310000]	10000	10000	CFU/100mL	



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495663

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Units
Sample Date	4/12/2023 3:00 PM	4/12/2023 11:00 PM	4/13/2023 7:00 AM			
Lab ID	1867908	1867909	1867910			
Oxygen Demand	Result	MDL	Result	MDL	Result	MDL
BOD (5 day)	32	6	23	6	19	6
Carbonaceous BOD	29 [27]	6	19	6	22	6
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	4/12/2023 3:00 PM	4/12/2023 11:00 PM	4/13/2023 7:00 AM			
Lab ID	1867908	1867909	1867910			
Solids	Result	MDL	Result	MDL	Result	MDL
Total Suspended Solids	56.7	1.3	38.5	1	33.00	0.67
						mg/L

LEGEND

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CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0
(705) 272-9093
Phone: Melissa.Hoogenhoud@cochraneontario.com
Email:

Work Order Number: 495783
PO #: 11885
Regulation: Information not provided
Project #: Overflow
DWS #:
Sampled By: Benoit Parent

Date Order Received: 4/14/2023
Arrival Temperature: 22 °C

Analysis Started: 4/14/2023
Analysis Completed: 4/25/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1868313	Wastewater	Grab		4/13/2023	3:00 PM
Sewage Plant Overflow	1868314	Wastewater	Grab		4/13/2023	11:00 PM
Sewage Plant Overflow	1868315	Wastewater	Grab		4/14/2023	7:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-BClG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BClG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2.
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540



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Town of Cochrane - Wastewater

CERTIFICATE OF ANALYSIS

Work Order Number: 495783

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495783

WORK ORDER RESULTS

Sample Description	Sample Date	Lab ID	Sample Description	Sample Date	Lab ID	Sample Description	Sample Date	Lab ID	Units
Sewage Plant Overflow	4/13/2023 3:00 PM	1868313	Sewage Plant Overflow	4/13/2023 11:00 PM	1868314	Sewage Plant Overflow	4/14/2023 7:00 AM	1868315	
Amions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Nitrate (as N)	0.62	0.05	3.12	0.05	3.37	0.05	3.37	0.05	mg/L
Nitrite (as N)	1.60	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L
Sample Description	Sewage Plant Overflow								
Sample Date	4/13/2023 3:00 PM								
Lab ID	1868313								
Sample Description	Sewage Plant Overflow								
Sample Date	4/13/2023 11:00 PM								
Lab ID	1868314								
Sample Description	Sewage Plant Overflow								
Sample Date	4/13/2023 3:00 PM								
Lab ID	1868313								
Sample Description	Sewage Plant Overflow								
Sample Date	4/13/2023 11:00 PM								
Lab ID	1868314								
Sample Description	Sewage Plant Overflow								
Sample Date	4/14/2023 7:00 AM								
Lab ID	1868315								
Sample Description	Sewage Plant Overflow								
Sample Date	4/13/2023 3:00 PM								
Lab ID	1868313								
Sample Description	Sewage Plant Overflow								
Sample Date	4/13/2023 3:00 PM								
Lab ID	1868313								
Microbiology	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Escherichia coli	7200000	100000	2400000	100000	1000000	1000000	1000000	100000	CFU/100mL



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495783

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Units
Sample Date	4/13/2023 3:00 PM	4/13/2023 11:00 PM	4/14/2023 7:00 AM			
Lab ID	1868313	1868314	1868315			
Oxygen Demand	Result	MDL	Result	MDL	Result	MDL
BOD (5 day)	26	6	11.6	1	13.1	1
Carbonaceous BOD	12.9	1	9.6	1	12.6	1
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	4/13/2023 3:00 PM	4/13/2023 11:00 PM	4/14/2023 7:00 AM			
Lab ID	1868313	1868314	1868315			
Solids	Result	MDL	Result	MDL	Result	MDL
Total Suspended Solids	60.00	0.67	29.30	0.67	31.70	0.67
						mg/L

LEGEND

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 ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.
 Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	495828
Company:	Town of Cochrane - Wastewater	PO #:	11885
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0 (705) 272-9093	Regulation:	Information not provided
Phone:	(705) 272-9093	Project #:	Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Benoit Parent

Date Order Received:	4/16/2023	Analysis Started:	4/17/2023
Arrival Temperature:	20 °C	Analysis Completed:	4/24/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1868432	Wastewater	Grab		4/14/2023	3:00 PM
Sewage Plant Overflow	1868433	Wastewater	Grab		4/14/2023	11:00 PM
Sewage Plant Overflow	1868434	Wastewater	Grab		4/15/2023	7:00 AM
Sewage Plant Overflow	1868435	Wastewater	Grab		4/15/2023	3:00 PM
Sewage Plant Overflow	1868436	Wastewater	Grab		4/15/2023	11:00 PM
Sewage Plant Overflow	1868437	Wastewater	Grab		4/16/2023	7:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-B/CIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-B/CIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495828

Method	Lab	Description	Reference
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORQ-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2.
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



TESTMARK Laboratories Ltd.
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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495828

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Units
Sample Date	4/14/2023 3:00 PM	4/14/2023 11:00 PM	4/15/2023 7:00 AM	4/15/2023 3:00 PM		
Lab ID	1868432	1868433	1868434	1868435		
Anions	Result	MDL	Result	MDL	Result	MDL
Nitrate (as N)	<0.05	0.05	1.45	0.05	2.87	0.05
Nitrite (as N)	<0.05	0.05	0.83	0.05	0.37	0.05
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow		
Sample Date	4/15/2023 11:00 PM	4/15/2023 11:00 AM				
Lab ID	1868436	1868437				
Anions	Result	MDL	Result	MDL	Units	
Nitrate (as N)	2.51	0.05	2.80	0.05	mg/L	
Nitrite (as N)	<0.05	0.05	<0.05	0.05	mg/L	
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow		
Sample Date	4/14/2023 3:00 PM	4/14/2023 11:00 PM	4/15/2023 7:00 AM	4/15/2023 3:00 PM		
Lab ID	1868432	1868433	1868434	1868435		
General Chemistry	Result	MDL	Result	MDL	Result	MDL
Ammonia (as N)	4.23	0.01	2.25	0.01	4.16	0.01
pH	7.07	N/A	7.07	N/A	7.23	7.04
Total Kjeldahl Nitrogen	11.6	0.4	5.8	0.4	13.1	9.3
Total Phosphorus (as P)	0.883	0.002	0.408	0.002	0.627	0.702
						0.002
						mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495828

Sample Description	Lab ID	Result	MDL	Result	MDL	Units
Sewage Plant Overflow						
Sample Date	4/15/2023 11:00 PM			4/16/2023 7:00 AM		
Lab ID	1868436			1868437		
General Chemistry		Result	MDL	Result	MDL	Units
Ammonia (as N)		2.25	0.01	1.29	0.01	mg/L
pH		7.15	N/A	7.37	N/A	pH
Total Kjeldahl Nitrogen		6.6	0.4	6.0	0.4	mg/L
Total Phosphorus (as P)		0.418	0.002	0.288	0.002	mg/L
Sample Description						
Sewage Plant Overflow						
Sample Date	4/14/2023 3:00 PM			4/14/2023 11:00 PM		4/15/2023 7:00 AM
Lab ID	1868432			1868433		1868434
Microbiology		Result	MDL	Result	MDL	Result
Escherichia coli		2100000	100000	800000	100000	900000
Sample Description						
Sewage Plant Overflow						
Sample Date	4/15/2023 11:00 PM			4/16/2023 7:00 AM		8000000 [7700000]
Lab ID	1868436			1868437		100000
Microbiology		Result	MDL	Result	MDL	Units
Escherichia coli		760000	10000	380000 [360000]	10000	CFU/100mL



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495828

Sample Description	Sample Date	Lab ID	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Sewage Plant Overflow	4/14/2023 3:00 PM	1868432									
Sewage Plant Overflow	4/14/2023 11:00 PM	1868433									
Sewage Plant Overflow	4/15/2023 7:00 AM	1868434									
Sewage Plant Overflow	4/15/2023 3:00 PM	1868435									
Oxygen Demand			Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
BOD (5 day)			33	6	12.3	1	7.4	1	35	6	mg/L
Carbonaceous BOD			21	6	10.7	1	9.6	1	33	6	mg/L
Sewage Plant Overflow	4/15/2023 11:00 PM	1868436									
Sewage Plant Overflow	4/16/2023 7:00 AM	1868437									
Oxygen Demand			Result	MDL	Result	MDL	Units				
BOD (5 day)			12.7	1	6.9	1	mg/L				
Carbonaceous BOD			11.2	1	5	1	mg/L				
Sewage Plant Overflow	4/14/2023 3:00 PM	1868432									
Sewage Plant Overflow	4/14/2023 11:00 PM	1868433									
Sewage Plant Overflow	4/15/2023 7:00 AM	1868434									
Sewage Plant Overflow	4/15/2023 3:00 PM	1868435									
Solids			Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Suspended Solids			56	1	29.70	0.67	37.5 [38.5]	1	96	1	mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 495828

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow		
Sample Date	4/15/2023 11:00 PM	4/16/2023 7:00 AM		
Lab ID	1868436	1868437		
Solids	Result	MDL	Result	MDL
Total Suspended Solids	42.5	1	14.30	0.67
				mg/L

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.
 MDL: Method detection limit or minimum reporting limit.
 []: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.
 Quality Control: All associated Quality Control data is available on request.
 Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.
 Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.
 Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.
 ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.
 Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.



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CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0
(705) 272-9093
Phone: Melissa.Hoogenhoud@cochraneontario.com
Email:

Work Order Number: 496122
PO #: 11885
Regulation: Information not provided
Project #: Overflow
DWS #:
Sampled By: Benoit Parent

Date Order Received: 4/18/2023
Arrival Temperature: 19 °C

Analysis Started: 4/18/2023
Analysis Completed: 4/25/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1869485	Wastewater	Grab		4/16/2023	3:00 PM
Sewage Plant Overflow	1869486	Wastewater	Grab		4/16/2023	11:00 PM
Sewage Plant Overflow	1869487	Wastewater	Grab		4/17/2023	7:00 AM
Sewage Plant Overflow	1869488	Wastewater	Grab		4/17/2023	3:00 PM
Sewage Plant Overflow	1869489	Wastewater	Grab		4/17/2023	11:00 PM
Sewage Plant Overflow	1869490	Wastewater	Grab		4/18/2023	7:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-B-CIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-B-CIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 496122

Method	Lab	Description	Reference
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NOR-G-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2.
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 496122

WORK ORDER RESULTS

Sample Description	Sample Date	Lab ID	Result	MDL	Sample Description	Sample Date	Lab ID	Result	MDL	Sample Description	Sample Date	Lab ID	Result	MDL	Sample Description	Sample Date	Lab ID	Result	MDL	Units
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	<0.05	0.05	Sewage Plant Overflow	4/16/2023 11:00 PM	1869486	<0.05	0.05	Sewage Plant Overflow	4/17/2023 7:00 AM	1869487	<0.05	0.05	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	<0.05	0.05	mg/L
Sewage Plant Overflow	4/17/2023 11:00 PM	1869489	<0.05	0.05	Sewage Plant Overflow	4/18/2023 7:00 AM	1869490	<0.05	0.05	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	0.45	0.05	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	0.45	0.05	mg/L
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	1.28	0.05	Sewage Plant Overflow	4/16/2023 11:00 PM	1869486	0.36	0.05	Sewage Plant Overflow	4/17/2023 7:00 AM	1869487	2.35	0.05	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	2.35	0.05	mg/L
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	0.82	0.05	Sewage Plant Overflow	4/16/2023 11:00 PM	1869486	0.55	0.05	Sewage Plant Overflow	4/17/2023 7:00 AM	1869487	0.27	0.05	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	0.27	0.05	mg/L
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	3.23	0.01	Sewage Plant Overflow	4/16/2023 11:00 PM	1869486	3.30	0.01	Sewage Plant Overflow	4/17/2023 7:00 AM	1869487	4.48	0.01	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	4.17	0.01	mg/L
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	7.13	N/A	Sewage Plant Overflow	4/16/2023 11:00 PM	1869486	7.32	N/A	Sewage Plant Overflow	4/17/2023 7:00 AM	1869487	7.48	N/A	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	7.23	N/A	pH
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	9.4	0.4	Sewage Plant Overflow	4/16/2023 11:00 PM	1869486	9.8	0.4	Sewage Plant Overflow	4/17/2023 7:00 AM	1869487	9.9	0.4	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	12.0	0.4	mg/L
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	0.735	0.002	Sewage Plant Overflow	4/16/2023 11:00 PM	1869486	0.681	0.002	Sewage Plant Overflow	4/17/2023 7:00 AM	1869487	0.605	0.002	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	0.715	0.002	mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 496122

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow							
Sample Date	4/17/2023 11:00 PM	4/18/2023 7:00 AM							
Lab ID	1869489	1869490							
General Chemistry	Result	MDL	Result	MDL	Units				
Ammonia (as N)	2.19	0.01	3.63	0.01	mg/L				
pH	7.22	N/A	7.39	N/A	pH				
Total Kjeldahl Nitrogen	7.9	0.4	20.5	0.4	mg/L				
Total Phosphorus (as P)	0.562	0.002	2.11	0.02	mg/L				
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow				
Sample Date	4/16/2023 3:00 PM	4/16/2023 11:00 PM	4/17/2023 7:00 AM	4/17/2023 3:00 PM					
Lab ID	1869485	1869486	1869487	1869488					
Microbiology	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Escherichia coli	1500000	100000	1050000	100000	300000	10000	6800000	100000	CFU/100mL
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow					
Sample Date	4/17/2023 11:00 PM	4/18/2023 7:00 AM							
Lab ID	1869489	1869490							
Microbiology	Result	MDL	Result	MDL	Units				
Escherichia coli	1800000	100000	360000 [250000]	10000	CFU/100mL				



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 496122

Sample Description	Sample Date	Lab ID	Result	MDL	Sample Description	Sample Date	Lab ID	Result	MDL	Sample Description	Sample Date	Lab ID	Result	MDL	Units
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	44	6	Sewage Plant Overflow	4/16/2023 11:00 PM	1869486	41	6	Sewage Plant Overflow	4/17/2023 7:00 AM	1869487	35	6	mg/L
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	48	6	Sewage Plant Overflow	4/18/2023 7:00 AM	1869490	27	6	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	34	6	mg/L
Oxygen Demand			27	6	Oxygen Demand			57	6	Oxygen Demand			63.9	6	mg/L
BOD (5 day)			15	1	BOD (5 day)			63.9	6	BOD (5 day)			63.9	6	mg/L
Carbonaceous BOD					Carbonaceous BOD					Carbonaceous BOD					mg/L
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	54.5	1	Sewage Plant Overflow	4/17/2023 11:00 PM	1869489	47	1	Sewage Plant Overflow	4/18/2023 7:00 AM	1869490	40	1	mg/L
Sewage Plant Overflow	4/16/2023 3:00 PM	1869485	54.5	1	Sewage Plant Overflow	4/18/2023 7:00 AM	1869490	47	1	Sewage Plant Overflow	4/17/2023 3:00 PM	1869488	40	1	mg/L
Total Suspended Solids			24.00	0.67	Total Suspended Solids			57.4	1.1	Total Suspended Solids			57.4	1.1	mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 496122

LEGEND

Dates: Dates are formatted as mm/dd/yyyy throughout this report.

MDL: Method detection limit or minimum reporting limit.

[]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

Spills Action Center Phone No. 1-800-268-6060
MOH Phone No. 1-800-461-1818

Date: 04-30-23 Time of Call: 23:20 a.m./p.m.
Reference #: 1-3 F@3 W@ Person Who Called: John
Office Called: SAC Reported By: Mike Nelson
Bypass: _____ Spill: _____ Leak: _____ Overflow:

Location of Incident: _____

Time of Incident: 2300 a.m./p.m. Receiver: L. Labelle

Details of Incident: overflow due to Rain

Downstream Users: None

Possible Effects on Receiver, Environment or Downstream Users: none

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

Town Hall: Phone No. 272- 4361 Fax No. 272-6068 Time of Call: _____

Details of Call: _____

Termination of Incident

Date: May 2/23 Time of Call: _____ Person Contacted: _____

Time of Termination: 0700 Approximate Volume: 7470 Cu. Meters

Current Status: Chlorinating? Yes: _____ No: Explain: _____

Further Action Required: none

Reported By: Mike Nelson



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CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0

Work Order Number: 497512
PO #: 11885
Regulation: Information not provided
Project #: Overflow
DWS #:

Phone:
Email: Melissa.Hoogenhoud@cochraneontario.com

Sampled By:

Date Order Received: 5/2/2023
Arrival Temperature: 20 °C

Analysis Started: 5/2/2023
Analysis Completed: 5/9/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1874810	Wastewater	Grab		4/30/2023	11:00 PM
Sewage Plant Overflow	1874811	Wastewater	Grab		5/1/2023	7:00 AM
Sewage Plant Overflow	1874812	Wastewater	Grab		5/1/2023	3:00 PM
Sewage Plant Overflow	1874813	Wastewater	Grab		5/1/2023	11:00 PM
Sewage Plant Overflow	1874814	Wastewater	Grab		5/2/2023	7:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 497512

Method	Lab	Description	Reference
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 497512

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	Result	MDL	Result	MDL	Result	MDL
Lab ID	1874810		1874811		1874812	
Anions	Result	MDL	Result	MDL	Result	MDL
Nitrate (as N)	<0.05	0.05	0.57	0.05	0.41	0.05
Nitrite (as N)	<0.05	0.05	0.35	0.05	0.63	0.05
Sample Description	Sewage Plant Overflow		Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	5/2/2023 7:00 AM		5/1/2023 7:00 AM		5/1/2023 3:00 PM	
Lab ID	1874814		1874811		1874813	
Anions	Result	MDL	Result	MDL	Result	MDL
Nitrate (as N)	2.17	0.05			1.71	0.05
Nitrite (as N)	0.14	0.05			0.26	0.05
Sample Description	Sewage Plant Overflow		Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	4/30/2023 11:00 PM		5/1/2023 7:00 AM		5/1/2023 11:00 PM	
Lab ID	1874810		1874811		1874813	
General Chemistry	Result	MDL	Result	MDL	Result	MDL
Ammonia (as N)	4.15	0.01	3.57	0.01	1.60	0.01
pH	6.83	N/A	7.26	N/A	7.29	N/A
Total Kjeldahl Nitrogen	22.9	0.4	12.3	0.4	9.5 [9.4]	0.4
Total Phosphorus (as P)	1.38	0.02	1.20	0.02	0.552	0.002



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 497512

Sample Description		Sewage Plant Overflow		
Sample Date		5/2/2023 7:00 AM		
Lab ID		1874814		
General Chemistry		Result	MDL	Units
Ammonia (as N)		1.01	0.01	mg/L
pH		7.48	N/A	pH
Total Kjeldahl Nitrogen		6.4	0.4	mg/L
Total Phosphorus (as P)		0.522	0.002	mg/L
Sample Description		Sewage Plant Overflow		
Sample Date		4/30/2023 11:00 PM		
Lab ID		1874810		
Microbiology		Result	MDL	Units
Escherichia coli		2720000 [2530000]	10000	CFU/100mL
Sample Description		Sewage Plant Overflow		
Sample Date		5/2/2023 7:00 AM		
Lab ID		1874814		
Microbiology		Result	MDL	Units
Escherichia coli		68200	200	CFU/100mL
Sample Description		Sewage Plant Overflow		
Sample Date		5/1/2023 3:00 PM		
Lab ID		1874812		
Microbiology		Result	MDL	Units
Escherichia coli		830000	10000	CFU/100mL
Sample Description		Sewage Plant Overflow		
Sample Date		5/1/2023 11:00 PM		
Lab ID		1874813		
Microbiology		Result	MDL	Units
Escherichia coli		1160000	10000	CFU/100mL



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 497512

Sample Description	Result	MDL	Sewage Plant Overflow	Result	MDL	Sewage Plant Overflow	Result	MDL	Sewage Plant Overflow
Sample Date	4/30/2023 11:00 PM		1874810	5/1/2023 7:00 AM		1874811	5/1/2023 3:00 PM		1874812
Lab ID	1874810		1874811	1874812		1874813	1874813		1874813
Oxygen Demand	46	6	20	22	6	14	9.2	6	6
BOD (5 day)	77.7	6	22	14	6	14.9	1	1	1
Carbonaceous BOD									

Sewage Plant Overflow

Sample Description	Result	MDL	Units
Sample Date	5/2/2023 7:00 AM		
Lab ID	1874814		
Oxygen Demand	6.7	6	mg/L
BOD (5 day)	<6	6	mg/L
Carbonaceous BOD			

Sewage Plant Overflow

Sample Description	Result	MDL	Units
Sample Date	4/30/2023 11:00 PM		
Lab ID	1874810		
Solids	145	2	73.3
Total Suspended Solids			1.3

Sewage Plant Overflow

Sample Description	Result	MDL	Units
Sample Date	5/2/2023 7:00 AM		
Lab ID	1874814		
Solids	42.30	0.67	mg/L
Total Suspended Solids			0.67

Sewage Plant Overflow

Sample Description	Result	MDL	Units
Sample Date	5/1/2023 11:00 PM		
Lab ID	1874813		
Solids	44.70	0.67	mg/L
Total Suspended Solids			0.67



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 497512

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

MDL: Method detection limit or minimum reporting limit.

[]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.



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CERTIFICATE OF ANALYSIS

Client: Michael Nelson
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0
(705) 272-9093
Phone: (705) 272-9093
Email: michael.nelson@cochraneontario.com

Work Order Number: 497707
PO #: 11885
Regulation: Information not provided
Project #: Overflow
DWS #:
Sampled By: Andy Crickard

Date Order Received: 5/3/2023
Arrival Temperature: 17 °C

Analysis Started: 5/3/2023
Analysis Completed: 5/10/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1875482	Wastewater	Grab		5/2/2023	3:00 PM
Sewage Plant Overflow	1875483	Wastewater	Grab		5/2/2023	11:00 PM
Sewage Plant Overflow	1875484	Wastewater	Grab		5/3/2023	7:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
TKN Water Dlg. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540



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Town of Cochrane - Wastewater

CERTIFICATE OF ANALYSIS

Work Order Number: 497707

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director



TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 497707

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow				
Sample Date	5/2/2023 3:00 PM	5/2/2023 11:00 PM	5/3/2023 7:00 AM				
Lab ID	1875482	1875483	1875484				
Anions	Result	MDL	Result	MDL	Result	MDL	Units
Nitrate (as N)	1.72	0.05	0.07	0.05	1.84	0.05	mg/L
Nitrite (as N)	0.74	0.05	0.59	0.05	0.31	0.05	mg/L
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow				
Sample Date	5/2/2023 3:00 PM	5/2/2023 11:00 PM	5/3/2023 7:00 AM				
Lab ID	1875482	1875483	1875484				
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units
Ammonia (as N)	2.78	0.01	1.98	0.01	2.82	0.01	mg/L
pH	7.35	N/A	7.17	N/A	7.55	N/A	pH
Total Kjeldahl Nitrogen	6.2	0.4	8.4	0.4	11.7	0.4	mg/L
Total Phosphorus (as P)	0.658	0.002	0.847	0.002	1.150	0.006	mg/L
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow				
Sample Date	5/2/2023 3:00 PM	5/2/2023 11:00 PM	5/3/2023 7:00 AM				
Lab ID	1875482	1875483	1875484				
Microbiology	Result	MDL	Result	MDL	Result	MDL	Units
Escherichia coli	2940000	10000	2610000	10000	5030000	10000	CFU/100mL



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 497707

Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Units
Sample Date	5/2/2023 3:00 PM	5/2/2023 11:00 PM	5/3/2023 7:00 AM		
Lab ID	1875482	1875483	1875484		
Oxygen Demand	Result	MDL	Result	MDL	Units
BOD (5 day)	22	6	39	6	mg/L
Carbonaceous BOD	14	6	38	6	mg/L
Sample Description	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	Sewage Plant Overflow	
Sample Date	5/2/2023 3:00 PM	5/2/2023 11:00 PM	5/3/2023 7:00 AM		
Lab ID	1875482	1875483	1875484		
Solids	Result	MDL	Result	MDL	Units
Total Suspended Solids	36.0	1.3	54.0	1.3	40
					1
					mg/L

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.
 MDL: Method detection limit or minimum reporting limit.
 Quality Control: All associated Quality Control data is available on request.
 Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.
 Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.
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 ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.
 Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #

501 WATER PLANT ROAD

120000355

Spills Action Center Phone No. 1-800-268-6060

MOH Phone No. 1-800-461-1818

Date: AUGUST 2/23 Time of Call: 5:55 a.m./p.m. (a.m.)
Reference #: 1-3P96QH Person Who Called: JARED ALCOCK

Office Called: SAC / MOH@5:56 Reported By: DILLON

Bypass: _____ Spill: _____ Leak: _____ Overflow:

Location of Incident: WASTEWATER PLANT

Time of Incident: 5:30 a.m./p.m. (p.m.) Receiver: LILLABELLE CREEK

Details of Incident: OVERFLOW

Downstream Users: NONE

Possible Effects on Receiver, Environment or Downstream Users: NONE

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

- 1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

Town Hall: Phone No. 272-4361 Fax No. 272-6068 Time of Call: _____

Details of Call: LEFT VOICEMAIL WITH MOH

Termination of Incident

Date: AUG 3/23 Time of Call: 0955 Person Contacted: NEIL

Time of Termination: 9:36 PM Approximate Volume: 312.76 Cu. Meters

Current Status: Chlorinating? Yes: _____ No: Explain: _____

Further Action Required: NONE

Reported By: JARED ALCOCK



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CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	508247
Company:	Town of Cochrane - Wastewater	PO #:	11959
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0	Regulation:	Information not provided
Phone:		Project #:	Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Jared Alcock

Date Order Received:	8/3/2023	Analysis Started:	8/4/2023
Arrival Temperature:	9 °C	Analysis Completed:	8/11/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow Sample #1	1912587	Wastewater	Grab		8/2/2023	6:07 PM
Sewage Plant Overflow Sample #2	1912588	Wastewater	Grab		8/2/2023	9:58 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210-B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day	Modified from SM-5210-B
E.coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion	Modified from EPA 365.3 and ESS 310.2.
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 508247

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow Sample #1	Sewage Plant Overflow Sample #2			
Sample Date	8/2/2023 6:07 PM	8/2/2023 9:58 PM			
Lab ID	1912587	1912588			
Anions	Result	MDL	Result	MDL	Units
Nitrate (as N)	0.53	0.05	<0.05	0.05	mg/L
Nitrite (as N)	<0.05	0.05	<0.05	0.05	mg/L
Sewage Plant Overflow Sample #1 Sewage Plant Overflow Sample #2					
Sample Description	Sewage Plant Overflow Sample #1		Sewage Plant Overflow Sample #2		
Sample Date	8/2/2023 6:07 PM		8/2/2023 9:58 PM		
Lab ID	1912587		1912588		
General Chemistry	Result	MDL	Result	MDL	Units
Ammonia (as N)	2.67	0.01	16.1	0.1	mg/L
pH	7.14	N/A	7.41	N/A	pH
Total Kjeldahl Nitrogen	15.1	0.4	33.8	0.4	mg/L
Total Phosphorus (as P)	0.934	0.002	2.22	0.02	mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 508247

Sample Description	Sample Date	Lab ID	Microbiology	Result	MDL	Result	MDL	Units
Sewage Plant Overflow Sample #1	Sewage Plant Overflow Sample #2							
	8/2/2023 6:07 PM	1912587		610000	10000	1940000 (1690000)	10000	CFU/100mL
Sample Description	Sewage Plant Overflow Sample #1							
Sample Date	8/2/2023 6:07 PM							
Lab ID	1912587							
Oxygen Demand	Result	MDL	Result	MDL	Units			
BOD (5 day)	39	6	80.9 (79)	6	mg/L			
Carbonaceous BOD	24	6	71.2 (77.3)	6	mg/L			
Sample Description	Sewage Plant Overflow Sample #1							
Sample Date	8/2/2023 6:07 PM							
Lab ID	1912587							
Solids	Result	MDL	Result	MDL	Units			
Total Suspended Solids	110	4	130	4	mg/L			
Sample Description	Sewage Plant Overflow Sample #2							
Sample Date	8/2/2023 9:58 PM							
Lab ID	1912588							



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 508247

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

MDL: Method detection limit or minimum reporting limit.

[]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

Spills Action Center Phone No. 1-800-268-6060
MOH Phone No. 1-800-461-1818

Date: 11 Aug 2023 Time of Call: 7:20 (a.m./p.m.)
Reference #: 1-3Q4YE3 Person Who Called: Jim Phipps
Office Called: SAC/MOH Reported By: Jim Phipps Anastazia
Bypass: _____ Spill: _____ Leak: _____ Overflow:
Location of Incident: Waste Water Plant 278⁵⁰¹ Water Plant Rd
Time of Incident: 7:10 a.m./p.m. Receiver: Lillabelle Creek
Details of Incident: Overflow
120000355 Facility #
Downstream Users: None
Possible Effects on Receiver, Environment or Downstream Users: None

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

Town Hall: Phone No. 272-4361 Fax No. 272-6068 Time of Call: _____

Details of Call: _____

Termination of Incident

Date: 11/Aug/23 Time of Call: 7:20 Person Contacted: Kaitlin McCreaw/moh
Time of Termination: 7:10 Approximate Volume: 9,347 Cu. Meters
Current Status: Chlorinating? Yes: _____ No: Explain: _____

Further Action Required: _____

Reported By: Jim Phipps



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CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	508984
Company:	Town of Cochrane - Wastewater	PO #:	11959
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0 (705) 272-9093	Regulation:	Information not provided
Phone:	(705) 272-9093	Project #:	Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Sean McGhee

Date Order Received:	8/11/2023	Analysis Started:	8/11/2023
Arrival Temperature:	13 °C	Analysis Completed:	8/28/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1915509	Wastewater	Grab		8/11/2023	11:10 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
TKN Water Digt. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2.
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 508984

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow		
Sample Date	8/11/2023 11:10 AM		
Lab ID	1915509		
Anions	Result	MDL	Units
Nitrate (as N)	<0.05	0.05	mg/L
Nitrite (as N)	<0.05	0.05	mg/L
Sample Description	Sewage Plant Overflow		
Sample Date	8/11/2023 11:10 AM		
Lab ID	1915509		
General Chemistry	Result	MDL	Units
Ammonia (as N)	19.8	0.1	mg/L
pH	7.48	N/A	pH
Total Kjeldahl Nitrogen	36.7	0.4	mg/L
Total Phosphorus (as P)	4.25	0.02	mg/L



TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 508984

Sample Description	Sewage Plant Overflow		
Sample Date	8/11/2023 11:10 AM		
Lab ID	1915509		
Microbiology	Result	MDL	Units
Escherichia coli	>200 [>200]	1	CFU/100mL
Sample Description	Sewage Plant Overflow		
Sample Date	8/11/2023 11:10 AM		
Lab ID	1915509		
Oxygen Demand	Result	MDL	Units
BOD (5 day)	97 [120]	30	mg/L
Carbonaceous BOD	42	6	mg/L
Sample Description	Sewage Plant Overflow		
Sample Date	8/11/2023 11:10 AM		
Lab ID	1915509		
Solids	Result	MDL	Units
Total Suspended Solids	313.0	6.7	mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 508984

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

MDL: Method detection limit or minimum reporting limit.

[]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #
120000355

Spills Action Center Phone No. 1-800-268-6060
MOH Phone No. 1-800-461-1818

Date: June 30 / 23 Time of Call: 6:30 a.m. p.m.
Reference #: 1-3LCKWH Person Who Called: Andy
Office Called: SAC Reported By: Andy Crickard
Bypass: _____ Spill: _____ Leak: _____ Overflow:
Location of Incident: Waste water Treatment Plant
Time of Incident: 6:15 a.m. p.m. Receiver: Lillable creek
Details of Incident: Overflow
Downstream Users: none
Possible Effects on Receiver, Environment or Downstream Users: none

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

Town Hall: Phone No. 272- 4361 Fax No. 272-6068 Time of Call: _____

Details of Call: _____

Termination of Incident

Date: July 1 2023 Time of Call: 0928 Person Contacted: _____

Time of Termination: 2400 Approximate Volume: 563.93 Cu. Meters

Current Status: Chlorinating? Yes: _____ No: Explain: _____

Further Action Required: none

Reported By: Michael Nelson



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Client:	Melissa Hoogenhoud	Work Order Number:	504492
Company:	Town of Cochrane - Wastewater	PO #:	
Address:	171 Fourth Ave, Box 490 Cochrane, ON, P0L 1C0	Regulation:	Information not provided
Phone:	(705) 272-5067	Project #:	Overflow
Email:	Melissa.Hoogenhoud@cochraneontario.com	DWS #:	
		Sampled By:	Andy Crickard
Date Order Received:	7/1/2023	Analysis Started:	7/1/2023
Arrival Temperature:	24 °C	Analysis Completed:	7/10/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1899306	Wastewater	Grab		6/30/2023	6:30 PM
Sewage Plant Overflow	1899307	Wastewater	Grab		6/30/2023	12:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Antions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
TKN Water Dig. (A58)	Kirkland Lake	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NORG-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540

Town of Cochrane - Wastewater

CERTIFICATE OF ANALYSIS

Work Order Number: 504492

This report has been approved by:



Adam Tam, M.Sc.
Laboratory Director

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 504492

WORK ORDER RESULTS

		Sewage Plant Overflow		Sewage Plant Overflow	
Sample Description		Result	MDL	Result	MDL
Sample Date	6/30/2023 6:30 PM			6/30/2023 12:00 AM	
Lab ID	1899306			1899307	
Anions		Result	MDL	Result	MDL
Nitrate (as N)		<0.05	0.05	<0.05	0.05
Nitrite (as N)		<0.05	0.05	<0.05	0.05
Units					
					mg/L
					mg/L
		Sewage Plant Overflow		Sewage Plant Overflow	
Sample Description		Result	MDL	Result	MDL
Sample Date	6/30/2023 6:30 PM			6/30/2023 12:00 AM	
Lab ID	1899306			1899307	
General Chemistry		Result	MDL	Result	MDL
Ammonia (as N)		9.47	0.05	22.2	0.1
pH		6.97	N/A	7.41	N/A
Total Kjeldahl Nitrogen		85.3	0.8	38.7	0.4
Total Phosphorus (as P)		4.33	0.04	3.21	0.02
Units					
					mg/L
					pH
					mg/L
					mg/L
		Sewage Plant Overflow		Sewage Plant Overflow	
Sample Description		Result	MDL	Result	MDL
Sample Date	6/30/2023 6:30 PM			6/30/2023 12:00 AM	
Lab ID	1899306			1899307	
Microbiology		Result	MDL	Result	MDL
Escherichia coli		1950000	10000	>2000000 >20000000	10000
Units					
					CFU/100mL

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 504492

Sample Description	Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	6/30/2023 6:30 PM	6/30/2023 12:00 AM		
Lab ID	1899306	1899307		
Oxygen Demand	Result	MDL	Result	MDL
BOD (5 day)	110	30	60	6
Carbonaceous BOD	140	30	62.4	6
				mg/L
Sample Description	Sewage Plant Overflow		Sewage Plant Overflow	
Sample Date	6/30/2023 6:30 PM	6/30/2023 12:00 AM		
Lab ID	1899306	1899307		
Solids	Result	MDL	Result	MDL
Total Suspended Solids	1200	10	403.0	6.7
				mg/L

LEGEND

Dates are formatted as mm/dd/year throughout this report.
 MDL: Method detection limit or minimum reporting limit.
 []: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.
 Quality Control: All associated Quality Control data is available on request.
 Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.
 Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.
 Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.
 ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.
 Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #

503 WATER PLANT ROAD 120000355

Spills Action Center Phone No. 1-800-268-6060
MOH Phone No. 1-800-461-1818

Date: SEPT 7/23 Time of Call: 2:06 a.m./p.m.
Reference #: 1-3T9KJ6 Person Who Called: JARED ALCOCK

Office Called: SAC / MOH Reported By: PETER

Bypass: _____ Spill: _____ Leak: _____ Overflow: ✓

Location of Incident: WASTEWATER PLANT

Time of Incident: 1:42 a.m./p.m. Receiver: LILLABELLE CREEK.

Details of Incident: OVERFLOW DUE TO RAIN EVENT.

Downstream Users: NONE

Possible Effects on Receiver, Environment or Downstream Users: NONE

NOTE: Take 2 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

- 1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

Town Hall: Phone No. 272-4361 Fax No. 272-6068 Time of Call: _____

Details of Call: LEFT VOICEMAIL WITH PHU @ 2:06^{JA} 2:13 AM.

Termination of Incident

Date: SEPT 7/23 Time of Call: 0955 Person Contacted: AARON

Time of Termination: 0933 Approximate Volume: 569.87 Cu. Meters

Current Status: Chlorinating? Yes: _____ No: ✓ Explain: _____

Further Action Required: _____

Reported By: JARED ALCOCK

REPORTED TO PHU



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CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
Company: Town of Cochrane - Wastewater
Address: 171 Fourth Ave, Box 490
Cochrane, ON, P0L 1C0
Phone: (705) 272-9093
Email: Melissa.Hoogenhoud@cochraneontario.com

Date Order Received: 9/7/2023
Arrival Temperature: 11 °C

Work Order Number: 511797
PO #: 11959
Regulation: Information not provided
Project #: Overflow
DWS #:
Sampled By: Jared Alcock
Analysis Started: 9/7/2023
Analysis Completed: 9/18/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow 1st Sample	1925264	Wastewater	Grab		9/7/2023	1:52 AM
Sewage Plant Overflow 2nd Sample	1925265	Wastewater	Grab		9/7/2023	9:33 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day.	Modified from SM-5210-B
E.coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H + B
TKN Water Dig. (A58)	Garrison	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from SM-4500 NOR-G-D
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water	Modified from EPA 365.3 and ESS 310.2.
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 511797

This report has been approved by:

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow 1st Sample	Sewage Plant Overflow 2nd Sample			
Sample Date	9/7/2023 1:52 AM	9/7/2023 9:33 AM			
Lab ID	1925264	1925265			
Anions	Result	MDL	Result	MDL	Units
Nitrate (as N)	<0.05	0.05	<0.05	0.05	mg/L
Nitrite (as N)	<0.05	0.05	<0.05	0.05	mg/L
Sample Description	Sewage Plant Overflow 1st Sample	Sewage Plant Overflow 2nd Sample			
Sample Date	9/7/2023 1:52 AM	9/7/2023 9:33 AM			
Lab ID	1925264	1925265			
General Chemistry	Result	MDL	Result	MDL	Units
Ammonia (as N)	7.80	0.02	18.6	0.1	mg/L
pH	6.9	N/A	7.36	N/A	pH
Total Kjeldahl Nitrogen	37.6	0.4	41.8	0.2	mg/L
Total Phosphorus (as P)	2.81	0.02	2.24	0.02	mg/L



TESTMARK Laboratories Ltd.
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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 511797

Sample Description	Sewage Plant Overflow 1st Sample	Sewage Plant Overflow 2nd Sample	Result	MDL	Result	MDL	Units
Sample Date	9/7/2023 1:52 AM	9/7/2023 9:33 AM					
Lab ID	1925264	1925265					
Microbiology	Result	MDL	Result	MDL	Result	MDL	Units
Escherchia coli	2200000 [2000000]	10000	2400000	10000	10000		CFU/100mL
Sample Description	Sewage Plant Overflow 1st Sample	Sewage Plant Overflow 2nd Sample					
Sample Date	9/7/2023 1:52 AM	9/7/2023 9:33 AM					
Lab ID	1925264	1925265					
Oxygen Demand	Result	MDL	Result	MDL	Result	MDL	Units
BOD (5 day)	220	30	140	30	30		mg/L
Carbonaceous BOD	240	30	97	30	30		mg/L
Sample Description	Sewage Plant Overflow 1st Sample	Sewage Plant Overflow 2nd Sample					
Sample Date	9/7/2023 1:52 AM	9/7/2023 9:33 AM					
Lab ID	1925264	1925265					
Solids	Result	MDL	Result	MDL	Result	MDL	Units
Total Suspended Solids	1210	10	206	4	4		mg/L



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CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 511797

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

MDL: Method detection limit or minimum reporting limit.

[]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

ICP/MS Dustfall Insoluble: The ICP/MS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

SEWAGE PLANT/LIFT STATION(S)
OVERFLOW BYPASS, SPILL, OR LEAK REPORTING ID #

503 WATER PLANT & 120000355

Spills Action Center Phone No. 1-800-268-6060
MOH Phone No. 1-800-461-1818

Date: SEPT 13/23 Time of Call: 11:37 (a.m./p.m.)

SAC Reference #: 1-302631 Person Who Called: JARED ALCOCK

Called SAC at: 11:37 AM Reported By: AKIKO
~~JARED ALCOCK~~

Called MOH at: 11:42 Reported By: AKIKO

Bypass: Spill: _____ Leak: _____ Overflow: _____

Location of Incident: WWTP EFFLUENT

Time of Incident: EST. 7:00 (a.m./p.m.) Receiver: LILLABELLE CREEK

Details of Incident: SHUT OFF RETURN PUMP TO SETTLE

TO BUILD UP SLUDGE BLANKET (NORMAL PRACTICE)
DUE TO RAIN EVENT, DISRUPTED FLOWS CAUSING BLANKET TO OVERFLOW

Downstream Users: NONE

Possible Effects on Receiver, Environment or Downstream Users: NONE

NOTE: Take 3 Raw Sewage Samples Per Incident & Have them Tested For every 8 hours during the overflow:

- 1. 5-day BOD and CBOD, Suspended Solids, pH, TKN and Total phosphorus

Addition Calls

Town Hall: Phone No. 272-4361 Fax No. 272-6068 Time of Call: _____

Details of Call: _____

Termination of Incident

Date: SEPT 13/23 Time of Call: 11:37 AM Person Contacted: AKIKO

Time of Termination: 11:00 AM Approximate Volume: 500 Cu. Meters

Duration of Bypass: 4 HOURS

Current Status: Chlorinating? Yes: _____ No: Explain: _____

Further Action Required: NONE CALLED MOH? LEFT VOICEMAIL

Reported By: JARED ALCOCK



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Client: Melissa Hoogenhoud
 Company: Town of Cochrane - Wastewater
 Address: 171 Fourth Ave, Box 490
 Cochrane, ON, P0L 1C0
 Phone: (705) 272-9093
 Email: Melissa.Hoogenhoud@cochraneontario.com

Work Order Number: 512511
 PO #: 11959
 Regulation: Information not provided
 Project #: Overflow
 DWS #:
 Sampled By:

Date Order Received: 9/13/2023
 Arrival Temperature: 12 °C

Analysis Started: 9/13/2023
 Analysis Completed: 9/22/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
Sewage Plant Overflow	1927808	Wastewater	Grab		9/13/2023	10:44 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Ammonia Water (A42)	Timmins	Determination of Ammonia/Ammonium in Water	Modified from EPA 350.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
BOD (A3)	Kirkland Lake	Determination of Biochemical Oxygen Demand (BOD) 5-Day	Modified from SM-5210 B
CBOD (A3)	Kirkland Lake	Determination of Carbonaceous Biochemical Oxygen Demand (CBOD) 5-Day	Modified from SM-5210-B
E coli by MF on mFC-BCIG (A10)	Timmins	Determination of E. coli in water by Membrane Filtration on mFC-BCIG media	Modified from MOE E3371
pH of Water (A2 0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H + B
TKN Water Dig. (A58)	Garson	Determination of Total Kjeldahl Nitrogen in Waters with Block Digestion.	Modified from EPA 4500 NORGD
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2.
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540

This report has been approved by:



TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 512511

WORK ORDER RESULTS

Sample Description	Sewage Plant Overflow		
Sample Date	9/13/2023 10:44 AM		
Lab ID	1927808		
Anions	Result	MDL	Units
Nitrate (as N)	17.30	0.05	mg/L
Nitrite (as N)	<0.05	0.05	mg/L
Sample Description	Sewage Plant Overflow		
Sample Date	9/13/2023 10:44 AM		
Lab ID	1927808		
General Chemistry	Result	MDL	Units
Ammonia (as N)	1.95	0.01	mg/L
pH	6.91	N/A	pH
Total Kjeldahl Nitrogen	16.4	0.2	mg/L
Total Phosphorus (as P)	0.567	0.002	mg/L
Sample Description	Sewage Plant Overflow		
Sample Date	9/13/2023 10:44 AM		
Lab ID	1927808		
Microbiology	Result	MDL	Units
Escherichia coli	3000 (4000]	1000	CFU/100mL



TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Town of Cochrane - Wastewater

Work Order Number: 512511

Sample Description	Sewage Plant Overflow		
Sample Date	9/13/2023 10:44 AM		
Lab ID	1927808		
Oxygen Demand	Result	MDL	Units
BOD (5 day)	8.3	1	mg/L
Carbonaceous BOD	4.9	1	mg/L
Sample Description	Sewage Plant Overflow		
Sample Date	9/13/2023 10:44 AM		
Lab ID	1927808		
Solids	Result	MDL	Units
Total Suspended Solids	39.00	0.67	mg/L

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.
 MDL: Method detection limit or minimum reporting limit.
 []: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.
 Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.
 Quality Control: All associated Quality Control data is available on request.
 Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.
 Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.
 Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.
 ICPMs Dustfall Insoluble: The ICPMs Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.
 Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

Calibration Reports



Instrumentation Calibration/Maintenance Report

Location: Cochrane WWTP

ORG # _____ Work Order #: _____

Instrument: Portable Dissolved Oxygen Meter

OCWA ID: _____ Serial #: 160900003927

Start Day/Time: 15 / 03 / 23 @ 14 : 00 End Day/Time: 15 / 03 / 23 @ 14 : 15
DD MM YY 24hour clock DD MM YY 24hour clock

of Workers: 1 Total Man Hours: 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: DO

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy

$\% \text{ Accuracy Calculation} \Rightarrow \text{ABS}([(Actual Value/Standard) - 1] \times 100\%)$

Material Used:

Quantity	Part #	Description
1		6mm of Distilled water as per calibration instructions

Comments:

Shake 6mm (1/4") of water in a beaker for 30 seconds. Insert probe in beaker above water. Allow for probe to stabilize. Begin calibration.

Instrument Passed Calibration.

In good working order.

Name: Brendon Jacksic Signature: Brendon Jacksic



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ Spectrophotometer DR2800 _____

OCWA ID: _____ **Serial #:** _____ 1230881 _____

Start Day/Time: 15 / 03 / 23 @ 13 : 45 **End Day/Time:** 15 / 03 / 23 @ 14 : 00
DD/MM/YY 24hour clock DD MM YY 24hour clock

of Workers: _____ 1 _____ **Total Man Hours:** _____ 1/4 _____

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: Spectrophotometer

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
See back of page				

$\% \text{ Accuracy Calculation} \Rightarrow \text{ABS}((\text{Actual Value Standard}) - 1) \times 100\%$

Material Used:

Quantity	Part #	Description
1	2635300	Low Range DPD secondary standards
1	27639-00	DR check absorbency standards

Comments:

Name: _____ Brendon Jacksic _____

Signature: _____ *Brendon Jacksic* _____



Instrumentation Calibration/Maintenance Report

Location: Cochrane STP

ORG # _____ Work Order #: _____

Instrument: Spectrophotometer DR3900

OCWA ID: _____ Serial #: 1415128

Start Day/Time: 15 / 03 / 23 @ 13 : 30 End Day/Time: 15 / 03 / 23 @ 13 : 45
DD MM YY 24hour clock DD MM YY 24hour clock

of Workers: 1 Total Man Hours: 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: Spectrophotometer

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy
See back of page				

% Accuracy Calculation => ABS((Actual Value Standard) - 1) x 100%

Material Used:

Quantity	Part #	Description
1	2635300	Low Range DPD secondary standards
1	27639-00	DR check absorbency standards

Comments:

Name: Brendon Jacksic Signature: Brendon Jacksic



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ Portable Dissolved Oxygen Meter _____

OCWA ID: _____ **Serial #:** _____ 160900003927 _____

Start Day/Time: 20 / 06 / 23 @ 13 : 30 **End Day/Time:** 20 / 06 / 23 @ 13 : 45
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: 1 **Total Man Hours:** 1/4

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: DO

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy

% Accuracy Calculation => **ABS**([(Actual Value/Standard) - 1] x 100%)

Material Used:

Quantity	Part #	Description
1		6mm of Distilled water as per calibration instructions

Comments:

Shake 6mm (1/4") of water in a beaker for 30 seconds. Insert probe in beaker above water. Allow for probe to stabilize. Begin calibration.

Instrument Passed Calibration.

Warning present, new LDO cap required as per warning message and unit manual.

Name: _____ Brendon Jacksic _____

Signature: _____ *Brendon Jacksic* _____



Instrument Information		Client Information		Quality Management Information	
Instrument Type	Open Channel Flowmeter	Location	Cochrane STP	Allowable Error (%)	15
Manufacturer	Siemens	ORG #	1109	Calibration Frequency	Annually
Model	LUT-440	Work Order #	3290339	Reference Meter Used	
Serial Number	P81D E4170039	Type of Work Order	Scheduled	Manufacturer	n/a
OCWA ID	n/a	Calibration Date (DD MM YY)	28 09 23	Model	n/a
Instrument Tag	n/a	Start Time (24hr Clock)	10:30	Serial	n/a
Process Location	East Flow	End Time (24hr Clock)	10:45	OCWA ID	n/a

Level Meter Verification	Overall Calibration Result	PASS
---------------------------------	-----------------------------------	-------------

As Found

Test #	Reference Meter m	Meter Reading m	Error %	PASS FAIL
1	0.042	0.045	7.14	PASS
2	0.042	0.045	7.14	PASS
3	0.042	0.045	7.14	PASS
Overall Result				PASS

Verification Information

Level Units	m
Reference Method	Measuring Tape (Visual)
Adjustments Made?	No
Empty Distance	n/a m
Full Scale	n/a m

As Left

Test #	Reference Meter m	Meter Reading m	Error %	PASS FAIL
			N/A	N/A
			N/A	N/A
			N/A	N/A
Overall Result				N/A

Verification Notes

Head level at weir plate measured and compared to flowmeter head level reading

Technician Name - Brendon Jacksic

Technician Signature - *Brendon Jacksic*



Instrument Information		Client Information		Quality Management Information	
Instrument Type	Open Channel Flowmeter	Location	Cochrane STP	Allowable Error (%)	15
Manufacturer	Hach	ORG #	1109	Calibration Frequency	Annually
Model	OCM	Work Order #	3290339	Reference Meter Used	
Serial Number	120859005177	Type of Work Order	Scheduled	Manufacturer	n/a
OCWA ID	n/a	Calibration Date (DD MM YY)	28-09-23	Model	n/a
Instrument Tag	n/a	Start Time (24hr Clock)	10:30	Serial	n/a
Process Location	West Flow	End Time (24hr Clock)	10:45	OCWA ID	n/a

Level Meter Verification	Overall Calibration Result	PASS
---------------------------------	-----------------------------------	-------------

As Found

Test #	Reference Meter m	Meter Reading m	Error %	PASS FAIL
1	0.041	0.040	2.44	PASS
2	0.041	0.040	2.44	PASS
3	0.041	0.040	2.44	PASS
Overall Result				PASS

Verification Information

Level Units	m
Reference Method	Measuring Tape (Visual)
Adjustments Made?	No
Empty Distance	n/a m
Full Scale	n/a m

As Left

Test #	Reference Meter m	Meter Reading m	Error %	PASS FAIL
			N/A	N/A
			N/A	N/A
			N/A	N/A
Overall Result				N/A

Verification Notes

Head level at weir plate measured and compared to flowmeter head level reading
 Sensor replace warning. Recommend replacing sensor or upgrading unit.

Technician Name - Brendon Jacksic

Technician Signature - *Brendon Jacksic*



Instrument Information		Client Information		Quality Management Information	
Instrument Type	Open Channel Flowmeter	Location	Cochrane STP	Allowable Error (%)	15
Manufacturer	Hach	ORG #	1109	Calibration Frequency	Annually
Model	OCM	Work Order #	3290339	Reference Meter Used	
Serial Number	120859005176	Type of Work Order	Scheduled	Manufacturer	n/a
OCWA ID	n/a	Calibration Date (DD MM YY)	28-09-23	Model	n/a
Instrument Tag	n/a	Start Time (24hr Clock)	11:00	Serial	n/a
Process Location	Contact Flow	End Time (24hr Clock)	11:15	OCWA ID	n/a

Level Meter Verification

Overall Calibration Result	PASS
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As Found

Test #	Reference Meter m	Meter Reading m	Error %	PASS FAIL
1	0.164	0.160	2.44	PASS
2	0.164	0.160	2.44	PASS
3	0.164	0.160	2.44	PASS
Overall Result				PASS

Verification Information

Level Units	m
Reference Method	Measuring Tape (Visual)
Adjustments Made?	No
Empty Distance	n/a m
Full Scale	n/a m

As Left

Test #	Reference Meter m	Meter Reading m	Error %	PASS FAIL
			N/A	N/A
			N/A	N/A
			N/A	N/A
Overall Result				N/A

Verification Notes

Head level at weir plate measured and compared to flowmeter head level reading
 Sensor replace warning. Recommend replacing sensor or upgrading unit

Technician Name - Brendon Jacksic

Technician Signature - *Brendon Jacksic*



Instrument Information		Client Information		Quality Management Information	
Instrument Type	Open Channel Flowmeter	Location	Cochrane STP	Allowable Error (%)	15
Manufacturer	Hach	ORG #	1109	Calibration Frequency	Annually
Model	OCM	Work Order #	3290339	Reference Meter Used	
Serial Number	120859005176	Type of Work Order	Scheduled	Manufacturer	n/a
OCWA ID	n/a	Calibration Date (DD MM YY)	28-09-23	Model	n/a
Instrument Tag	n/a	Start Time (24hr Clock)	11:15	Serial	n/a
Process Location	Bypass Flow	End Time (24hr Clock)	11:30	OCWA ID	n/a

Level Meter Verification	Overall Calibration Result	PASS
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As Found

Test #	Reference Meter m	Meter Reading m	Error %	PASS FAIL
1	0.620	0.072	88.39	FAIL
2	0.620	0.072	88.39	FAIL
3	0.620	0.072	88.39	FAIL
Overall Result				FAIL

Verification Information

Level Units	m
Reference Method	Measuring Tape (Visual)
Adjustments Made?	Yes
Empty Distance	n/a m
Full Scale	n/a m

As Left

Test #	Reference Meter m	Meter Reading m	Error %	PASS FAIL
1	0.620	0.620	0.00	PASS
2	0.620	0.620	0.00	PASS
3	0.620	0.620	0.00	PASS
Overall Result				PASS

Verification Notes

Head level at weir plate measured and compared to flowmeter head level reading
 Sensor replace warning. Recommend replacing sensor or upgrading unit

Technician Name - Brendon Jacksic

Technician Signature - *Brendon Jacksic*



Instrumentation Calibration/Maintenance Report

Location: _____ Cochrane WWTP _____

ORG # _____ **Work Order #:** _____

Instrument: _____ Portable Dissolved Oxygen Meter _____

OCWA ID: _____ **Serial #:** _____ 160900003927 _____

Start Day/Time: 28 / 09 / 23 @ 11 : 30 **End Day/Time:** 28 / 09 / 23 @ 11 : 45
DD/MM/YY 24hour clock DD/MM/YY 24hour clock

of Workers: _____ 1 _____ **Total Man Hours:** _____ 1/4 _____

Type of Work Order:

Scheduled Maintenance Corrective Work Order Other: _____

Instrument Type:

Recorder Transmitter pH Chlorine Turbidity Flow Other: DO

Calibration: See Reverse page for calibration data

Input/Standard	As Found		As Left	
	Actual Value	% Accuracy	Actual Value	% Accuracy

% Accuracy Calculation => **ABS**([(Actual Value/Standard) -1] x 100%)

Material Used:

Quantity	Part #	Description
1		6mm of Distilled water as per calibration instructions

Comments:

Shake 6mm (1/4") of water in a beaker for 30 seconds. Insert probe in beaker above water. Allow for probe to stabilize. Begin calibration.

Instrument Passed Calibration.

In good working order.

Name: _____ Brendon Jacksic _____

Signature: _____ *Brendon Jacksic* _____



Instrument Information		Client Information		Quality Management Information	
Instrument Type	pH Analyzer	Location	Cochrane STP	pH Buffer Stock	
Manufacturer	Hach	ORG #	1109	Buffer Lot#	A2151
Model	SenSION 3+	Work Order #	3290339	Buffer Expiry	Aug. 25
Serial Number	615107	Type of Work Order	Scheduled	Allowable Error (%)	5
OCWA ID	n/a	Calibration Date (DDMMYY)	21/12/23	Calibration Frequency	Quarterly
Instrument Tag	n/a	Start Time (24hr Clock)	11:00		
		End Time (24hr Clock)	11:15		

pH Calibration

Overall Calibration Result	PASS
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As Found

Buffer	As Found pH	As Found Temp °C	Error %	PASS FAIL
4.00	4.070	n/a	1.75	PASS
7.00	7.220	n/a	3.14	PASS
10.00	10.220	n/a	2.20	PASS
Overall Result				PASS

As Left

Buffer	As Found pH	As Found Temp °C	Error %	PASS FAIL
4.00	4.000	n/a	0.00	PASS
7.00	7.090	n/a	1.29	PASS
10.00	10.040	n/a	0.40	PASS
Overall Result				PASS

Calibration Information

Calibration Performed?	Yes
Slope Value	n/a mV/pH
Offset	n/a mV

Calibration Notes

Technician Name - Brendon Jacksic

Technician Signature - *Brendon Jacksic*



Instrument Information		Client Information		Quality Management Information	
Instrument Type	pH Analyzer	Location	Cochrane STP	Calibration Frequency	Quarterly
Manufacturer	Hach	ORG #	1109		
Model	SenSION 3+	Work Order #	3290339		
Serial Number	615107	Type of Work Order	Scheduled		
OCWA ID	n/a	Calibration Date (DD-MM-YY)	21/12/23		
Instrument Tag	n/a	Start Time (24hr Clock)	11:15		
		End Time (24hr Clock)	11:30		

Portable DO Calibration

Overall Calibration Result	PASS
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Procedure (As per unit manual):

- 1 - Fill a BOD bottle 1/4 with water, stopper and shake for 30s
- 2 - Rinse probe with DI water and dry
- 3 - Put probe into bottle (ensuring it's not directly in the water) and wait at least 10mins
- 4 - Enter calibration menu and press read, allow to stabilize
- 5 - Record and store values, display should show 100% when reading is stable

Calibration Results:

100 %
 24.6 °C
 8.18 mg/L
 92.6 %Slope
 0 mg/L Offset

Calibration Notes

Unit shows replace probe warning, recommend probe be replaced

Technician Name - Brendon Jacksic

Technician Signature - *Brendon Jacksic*