Township of Enniskillen
Oil City Wastewater Collection System and Lagoon

Annual Performance Report of Operations
YEAR - 2024

Managed, Operated, and Maintained by
The Township of Enniskillen

Signature, ORO

March 5 2025
Date

Overview

The Township of Enniskillen Oil City Sewer Collecion system is a Class one (1) collection system and operated under the Environmental Compliance Approval Number: 028-W601 Issued September 28, 2022.

ECA Issue Date September 28th, 2022

Application for ECA Review Due Date September 15, 2028

Certificates of Classification on file are:

- **Wastewater Treatment Facility Class 1 4951 Issued March 23, 2009**
- **Wastewater Collection Facility Class 1 4836 Issued March 23, 2009**

MECP performed an inspection of the wastewater system on August 22, 2018.

Pump Stations

System Name	Wastewater System Number	Location	ECA Number	Issue Date
Oil City Pumping Station	4836	3123 Main Street Oil City	1-0245-70-742196	Oct 1 1974

Collection System

The Oil City Wastewater Collection System consists of works for the collection and transmission of sewage, consisting of 2,496 m of trunk sewers, a sewage pumping station and 1,189 m of forcemain, with discharge into the Oil City Lagoon.

Alarm System

The Oil City pump station is equipped with an alarm system to alert the Operator of pump failures, high levels or hydro outages. The alarm system is tested on a monthly basis.

Sampling & Monitoring data

Oil City Wastewater lagoon samples are taken monthly
SGS Research Laboratory conducts sample analysis

Monthly Sample Results - Oil City Wastewater Collection

Year **2024**

Month	Sample Date	BOD5 (BOD5) [mg/l	Total Suspended Solids [mg/l]	Phosphorus (total) [mg/l]	TKN [as N mg/l]
January	January 30, 2024	148	166	4.36	35
February	February 28, 2024	213	104	5.33	51
March	March 26, 2024	154	242	4.52	31.4
April	April 30, 2024	118	116	4.77	52.7
May	May 28, 2024	155	182	4.8	45.3
June	June 12, 2024	224	116	7.17	64.7
July	July 17, 2024	97	90	3.68	35.3
August	August 22, 2024	157	396	6.34	61.6
September	September 13, 2024	194	1680	3.38	61
October	October 15, 2024	217	158	4.85	41.4
November	November 19, 2024	190	91	7.61	71.4
December	December 12, 2024	127	136	7.49	69.1

The raw sewage samples taken in 2024 appeared to be within normal, expected ranges for the Oil City Collection

Oil City Pump Station monitoring data

Readings are taken at the Oil City pump stations on a regular basis.
The last reading of each month will be reported in this annual report.
The readings will be compared to the prior year to observe any abnormal situations.

Month	2023 Reading	Toal	2024 Reading	Total
	(m3)	(m3)	(m3)	
January	34,287	681	43265	1010
February	35,243	956	43832	567
March	36,161	918	44369	537
April	37,086	925	45128	759
May	37,719	633	45751	623
June	38,450	731	46329	578
July	39,186	736	47111	782
August	39,906	720	47668	557
September	40,424	518	48167	499
October	40,946	522	48660	493
November	41662	716	49315	655
December	42255	593	50099	784
		8,649		7,844

The Oil City lagoon has approval for annual discharge.

Alum is added to the lagoon prior to dicharge to meet set parameters as outlined in Procedure F-5-1.

When levels are acceptable as per Procedure F-5-1 the lagoon is discharged and the required samples are taken. If levels are not within the acceptable parameters or abnormal circumstances occur, the Operator works with MECP for approval of lagoon discharge.

An annual report of the discharge is prepared and sent to the MECP.

In 2024 we had an abnormal amount of precipitation which led to the necessity to release the lagoon earlier than the normal fall timeline. Staff worked with the MECP to set sample requirements and timelines. The lagoon was treated with 1,000 imp gallons of alum on July 24, 2024 prior to the discharge. Results of the discharge are included in this annual report.

The regular fall discharge took place from November 25 to 29, 2024 discharging aproximently 12,800m3 of effluenet which is what is normally expected to occur during the regular fall discharge. The lagoon was treated with 1,000 imp gallons of alum on November 15 2024 prior to discharge. Results of the November 2024 discharge are included in this annual report.

July 2024 Lagoon discharge					
First 12 Hour Event					
Date	Time	Samples to be taken after treatment/prior to discharge	Fox Creek (results)	Lagoon Content (results)	
July 24 2024	Fox Creek 13:00	PH	7.69	6.87	
	Lag Content 12:55	Temperature	22.6	24.7	
		Total Suspended Solids (TSS)	48	79	
		Alkalinity	181	78	
		Total Phophorus	0.14	0.23	
		Nitrate	0.42	<0.06	
		Nitrite	0.03	<0.03	
		Total kjeldahl nitrogen	1	3.7	
		Total Ammonia Nitrogen	0.2	1	
		Start of discharge (1 hour after discharging starts)	Effluent (results)	Upstream (results)	Downstream (results)
July 31 2024					
	Eff 11:05	PH	7.48	7.83	7.58
	DS 11:10	Temperature	24.5	23.9	24.3
	US 11:15	Total Suspended Solids (TSS)	38	47	62
		Alkalinity	94	159	136
		Total phosphorus	0.15	0.1	0.12
		Nitrate	<0.06	0.18	0.14
		Nitrite	<0.03	<0.03	<0.03
		Total Kjeldahl Nitrogren	4.3	1.5	2
		Total Ammonia Nitrogen	1.4	0.3	0.6
July 31 2024	11 hours 45 minutes	Near end of discharge	Effluent (results)	Upstream (results)	Downstream (results)
	Eff 21:40				
	US 21:45	PH	7.79	7.89	7.87
	DS 21:50	Temperature	24.1	24.1	24.3
		Total Suspended Solids (TSS)	49	44	37
		Alkalinity	108	153	153
		Total phosphorus	0.14	0.08	0.09
		Nitrate	<0.06	0.17	0.15
		Nitrite	<0.03	<0.03	<0.03
		Total Kjeldahl Nitrogren	3.2	1.9	1.6
		Total Ammonia Nitrogen	0.8	0.2	0.4

Second 12 Hour Event					
Date	Time	**Start of discharge (1 hour after discharging starts)**	**Effluent** (results)	**Upstream** (results)	**Downstream** (results)
August 1 2024					
	Eff 11:30	PH	7.69	7.77	7.87
	US 11:35	Temperature	25.2	25.5	25.1
	DS 11:40	Total Suspended Solids (TSS)	33	32	37
		Alkalinity	99	156	143
		Total phosphorus	0.14	0.09	0.09
		Nitrate	<0.06	0.09	0.07
		Nitrite	<0.03	<0.03	<0.03
		Total Kjeldahl Nitrogren	3.6	1.8	2
		Total Ammonia Nitrogen	1.1	0.05	0.6
		Near end of discharge	**Effluent** (results)	**Upstream** (results)	**Downstream** (results)
Aug 1 2024	10 hours 10 minutes				
	Eff 20:20	PH	7.93	8.07	7.97
	US 20:25	Temperature	25.8	25.7	26.4
	DS 20:30	Total Suspended Solids (TSS)	42	51	50
		Alkalinity	106	102	101
		Total phosphorus	0.14	0.11	0.12
		Nitrate	<0.06	<0.06	<0.06
		Nitrite	<0.03	<0.03	<0.03
		Total Kjeldahl Nitrogren	4.3	2.2	2.5
		Total Ammonia Nitrogen	1	0.4	0.4
Date	Time	**Day Following Third discharge**	Downstream (results)		
Aug 2 2024					
	Fox Creek DS	PH	7.93		
		Temperature	24.7		
		Total Suspended Solids (TSS)	40		
		Alkalinity	146		
		Total phosphorus	0.09		
		Nitrate	0.07		
		Nitrite	<0.03		
		Total Kjeldahl Nitrogren	1.4		
		Total Ammonia Nitrogen	<0.1		

Oil City Lagoon - WW#110001738
Lagoon Discharge - Annual Reporting
File: SI-LA-EN-400

Reporting Period Ending (Select One)	**March**	**April**	**May**	**June**	**September**	**October**	**November**	**December**
							x	

Proposed Lagoon Discharge Date _____

Proposed Treatment Option Treated with alum November 15 2024

Lagoon Discharge Date (start and end dates) Start November 26 2024 @ 07:40 End Friday November 29 2024 @ 14:00

Total Effluent volume to watercourse 12870m^3

Treatment Date November 15 2024

Treatment Option/Details Alum 1000 imp gallons

Sample Results	**Guideline Criteria for parameter**	**Contents of Lagoon Prior to Discharge**	**Contents of Lagoon Prior to Discharge**	**Effluent Sample 1 During discharge**	**Effluent Sample 2 During Discharge**	**Effluent *Additional Sample During Discharge**	**(use additional columns if necessary) *(if applicable)**
Carbonaceous Biochemical Oxygen Demand (BOD5) [mg/L]	25			5	5		
Biochemical Oxygen Demand (BOD5) [mg/L]	25	20		5	<4		
Total Suspended Solids [mg/L]	25	7		12	5		
pH [no unit]		7.93		8.15	8.11		
Total Phosphorus (total) [mg/L]	1	0.14		0.12	0.12		
Total Kjeldahl Nitrogen [as N mg/L]				12.4	13.1		
Ammonia+Ammonium (N) [mg/L]				10.9	11.3		
Date of Sample		Nov 19 2024		Nov 25 2024	Nov 28 2024		

Notes/Observations/Comments Fall lagoon discharge taking place

No Actions to report this period (check here if applicable) Lagoon discharge

In 2024 the system operated without issue

Problem/Concern/Issue	Solution
N/A	N/A

The Oil City Pump station is equipped with two (2) submersible pumps
The pumps are alternately running. There is one (1) pump in storage to serve as back up if necessary.

There is a 100 mm diameter Electromagnetic Flow meter installed on the forcemain downstream of the sewage pumping station. The Electromagmetic flow meter is read on a weekly basis and recorded in the Oil City sewer log book.
This measuring device is to be calibrated at least once every three (3) years. A copy of the verification report is filed in the Operating Manual.

Last calibration date: February 22, 2022
Note: The flow meter is scheduled to be tested in February of 2025.

There is an ultrasonic transmitter to monitor the levels in the pump station.
If the levels go above 1.8 m the alarm is set to alarm out to the operator.
The transmitter is calibrated upon installation and does not need calibration on a regular basis.

The following are list of complaints received for the sewage collection system for the year

N/A - No complaints received for the Oil City Sewer System in 2024.

Alterations to the Authorized System within the reporting period that are authorized by ECA Number 028-W601

N/A - No alterations were made in the system in 2024.

Staff are currently working with the MECP to amend the existing ECA to allow for fall and spring discharges annually.
Part of the application process is to complete flow monitoring of Fox Creek in the fall of 2024 and the spring of 2025.
The flow monitoring was completed in late 2024.
Staff will continue to work with the MECP on submission of the application to amend the ECA.
After the application is submitted, it is estimated to be approximately one year after submission prior to an amended ECA being in place.

In 2024 the following overflow or spill situations occurred
(State N/A if no events during the year)

Date	Event	Description of Events	Solution
N/A	N/A	N/A	N/A

Procedure F-5-1 Determination Of Treatment Requirements For Municipal And Private Sewage Treatment Works

Parameters from the following chart (F-5-1) are guidelines for seasonal discharge of the single cell lagoon.

Treatment Level and Processes	Effluent Design Objectives 1 (mg/L) - BOD5	Effluent Design Objectives 1 (mg/L) - SS	Effluent Design Objectives 1 (mg/L) - TP	Effluent Design Objectives 1 (mg/L) - (NH3+NH4+)-N	Effluent Guidelines 2 (mg/L) - BOD5	Effluent Guidelines 2 (mg/L) - SS
Seasonal Lagoon with TP removal by batch chemical dosage	15	20	0.5 to 1.0	n/a	25	25

The following practices occur to strive to meet guideline paramers:

10 L/month of Shactivate is added to the lagoon as per approvals on file in the Operating Manual.

Alum is added prior to discharging the lagoon.
Jar samples are taken to determine the amount of alum required prior to treatment.