

March 31, 2022

Ministry of the Environment
Sault Ste. Marie Regional Office
70 Foster Drive
Sault Ste. Marie ON
P6A 6V4

Attention: Mr. Stephen Rouleau
Senior Environmental Officer

Re: 2021 Performance Report for Hornepayne Wastewater Treatment Plant

Dear Mr. Rouleau:

Attached is the 2021 Performance Report for the **Hornepayne Wastewater Treatment Plant** located in The Corporation of the Township of Hornepayne. This report has been completed in accordance with Condition No. 10(6) cited in *Certificate of Approval Number 4306-A8ANUC* dated March 23 2016 and issued to the Township of Hornepayne.

This report was prepared by the Ontario Clean Water Agency on behalf of the Township of Hornepayne based on information kept on record at the Hornepayne Wastewater plant, and, the report covers the period from January 1, 2021 to December 31, 2021.

Should you have any questions or comments in regards to this annual report, please do not hesitate to contact David Hoffman at 807-854-7142.

Yours truly,

Patrick Couture

Patrick Couture
Senior Operations Manager
Ontario Clean Water Agency
Northwestern Ontario Hub

Copy to: Gail Jaremy – CAO/Clerk
Hornepayne Wastewater Operators

2021 Annual Report

Hornepayne Wastewater Treatment Plant

Prepared by the Ontario Clean Water Agency



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

**The Corporation of the Township of Hornepayne
Sewage Treatment Plant
2021 Annual Report**

INTRODUCTION

In accordance with the *Certificate of Approval Number 4306-A8ANUC* dated March 23 2016, section 10 (6), the Corporation of the Township of Hornepayne - Hornepayne Sewage Treatment Plant is required to prepare an annual summary. The 2021 annual facility performance report summarizes important information regarding the treatment quality of the effluent wastewater, analytical test results, relevant activities and maintenance operations of the Works. Some of this information was submitted via the quarterly upload of information, but is being presented again as part of the new Annual Report based on the calendar year.

DESCRIPTION OF WORKS

Rated Capacity of Works	1364 m ³ /day
Service Area	Township of Hornepayne
Service Population	980
Effluent Receiver	Little Jackfish River
Major Process	Extended Aeration Plant – Carrousel-type treatment system

EFFLUENT MONITORING AND RECORDING

Analytical tests to monitor the influent and effluent water quality on a monthly basis are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods. Weekly analysis is performed in-house in order to maintain the process. When these samples are split with the accredited laboratories, it confirms the procedure accuracy of the in-house testing.

SAMPLING REQUIREMENTS

Samples of raw sewage and final effluent from the WWTP shall be collected and analyzed for the following parameters at the indicated frequencies.

Raw Sewage Monitoring – Samples to be collected at the end of the grit channel

Parameters	Sample Type	Frequency
<i>BOD</i> ₅	Composite*	monthly
Total Suspended Solids	Composite*	monthly
Total Phosphorus	Composite*	monthly
Total Kjeldahl Nitrogen (TKN)	Composite*	monthly

* Composite of three grab samples, taken at time intervals of at least six hours over a 24-hour sampling period.

Final Effluent Monitoring - Samples to be collected at the V-notch at the end of the chlorine contact chamber

Parameters	Sample Type	Frequency
<i>CBOD</i> ₅	Composite*	Monthly
Total Suspended Solids	Composite*	Monthly
Total Phosphorus	Composite*	Monthly
Ammonia – Nitrogen(total)	Composite*	Monthly
<i>E. Coli</i>	Grab	Biweekly
Total Chlorine Residual	Grab	Weekly
pH	Grab	Weekly
Temperature	Grab	Weekly

* Composite of three grab samples, taken at time intervals of at least six hours over a 24-hour sampling period.

PLANT PERFORMANCE

Effluent Limits as per C of A, condition 7

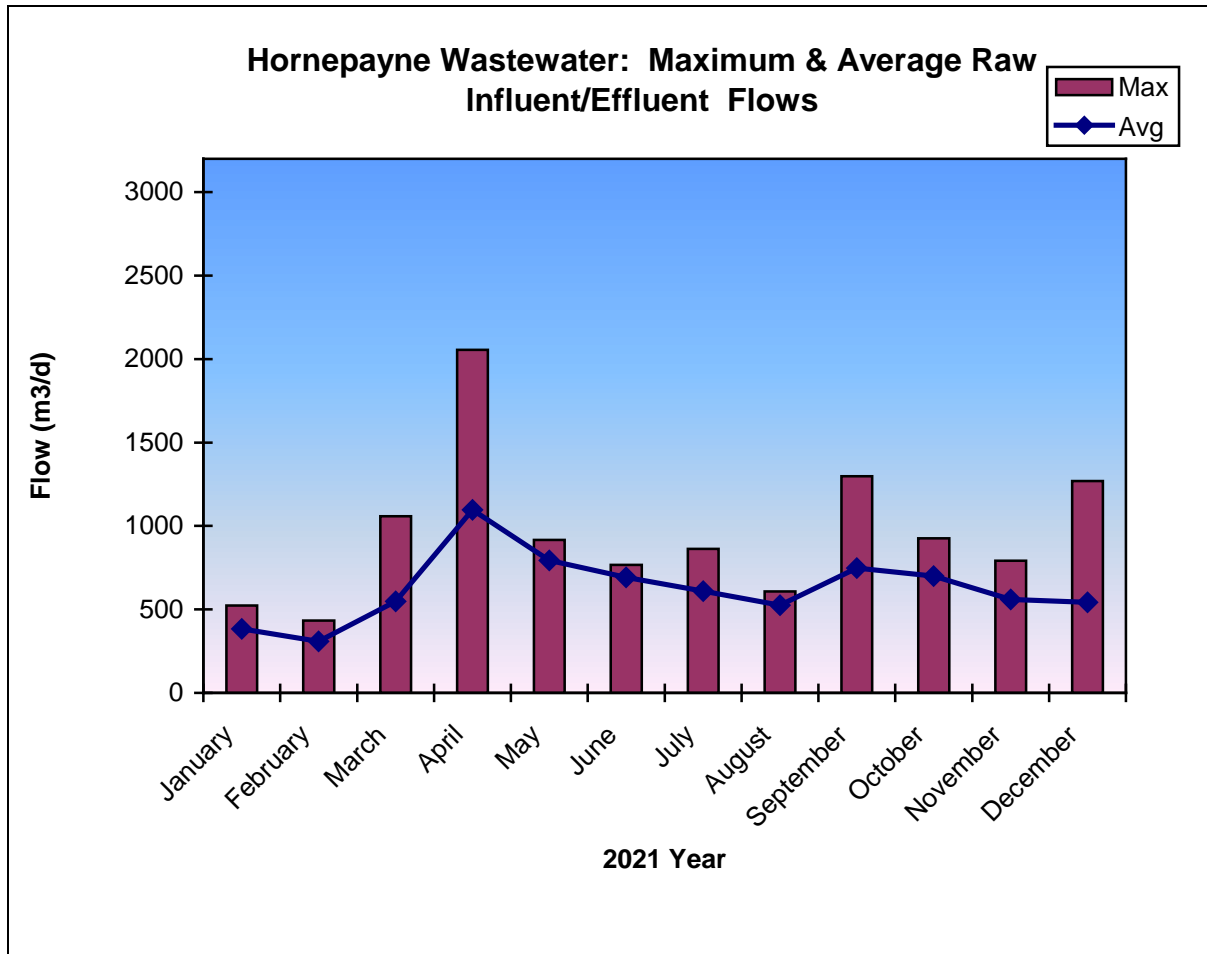
Effluent Parameter	Annual Average Concentration Limit	Average Loading
<i>BOD</i> ₅	25.0 mg/L	34.1 kg/day
Total Suspended Solids	25.0 mg/L	34.1 kg/day
pH	Between 6.0 – 9.5 at all times	
<i>E. Coli</i>	200 organisms/100 ml (monthly <i>Geometric Mean Density</i>)	

Effluent Objectives (best effort) as per C of A, condition 6 (1)

Effluent Parameter	Concentration Objective	Loading Objective
<i>CBOD₅</i>	15.0 mg/L	20.5 kg/day
Total Suspended Solids	15.0 mg/L	20.5 kg/day
<i>E. Coli</i>	150 organisms/100 ml (monthly <i>Geometric Mean Density</i>)	
pH	6.5- 8.5	

EFFLUENT FLOWS

In order to review, at a glance, the performance of the WWTP, a graph has been prepared showing the average and maximum monthly effluent flows for the year; January to December 2021. The total effluent flows for this timeframe report as 228,731 m³, compared to 255,278 m³ for the 2020 calendar year.



EFFLUENT SAMPLING

In the reporting year 2021, $CBOD_5$ was analyzed and the average was 1.525 mg/L; this is well within the effluent limits imposed by the *Certificate of Approval* condition 6.1 of 25.0 mg/L. This also was within the objective limits of 15 mg/l

The annual average suspended solids concentrations for the effluent in 2021 was 6.017 mg/L. This parameter is likewise within the annual compliance level of 25.0 mg/L. This parameter has an objective value of 15 mg/l. The objective limit was achieved in 2021.

The plant compliance criteria states; the pH of the effluent shall be maintained between 6.0 and 9.5, inclusive, at all times. The average pH during this period was 7.757 with a high of 9.63 and a low of 6.45. The effluent did not meet the limits and therefore also did not meet the objective levels of 6.5 to 8.5.

The effluent parameter includes a requirement to maintain the monthly geometric mean density of e-coli less than of 200 organisms per 100 ml. In 2021, the maximum monthly geometric mean density for e-coli was 668.538 organisms per 100 ml. There were 5 months in 2021 with the ecoli over the 200 organisms per 100 ml.

MAINTENANCE

OCWA maintains a Work Management System (WMS), which is a comprehensive computer based maintenance program that is based on a proactive preventive approach. This includes running checks, weekly, monthly and annual maintenance, as required. A full report on all maintenance carried out in 2021 is available upon request.

There were no modifications made to the Hornepayne Sewage Plant as per Schedule B of the ECA. The Federal Regulation requiring the effluent to be below 0.02 mg/l chlorine residual came into effect in 2021. The facility used a temporary dechlorination system in the effluent channel to meet this regulatory requirement until a permanent solution is engineered and installed. The collection of the final effluent samples are collected after the dechlorination.

OPERATIONAL ISSUES

The pH was over the 9.5 limit on May 12 2021. The operators had noticed previously that the pH had been increasing in the previous several weeks. The pH probe was suspect and a replacement was ordered. The delivery on the replacement probe was longer than anticipated. It was replaced on May 14 and the pH returned to the normal range. After the probe was replaced, the pH met the objective values for the remainder of the year.

The ecoli values were over for five of the last six months of 2021. The operators were increasing the chlorine dosages but the chlorination was inconsistent. The operators could not find the cause of the inconsistent chlorination until late in the year. The chlorinator was found to be sticking and as a result when the pace to flow chlorination would not operate as designed. The chlorinator was repaired and is functioning correctly as of the end of 2021.

The dechlorination system is installed on a temporary basis until a permanent solution is engineered and installed. The temporary system had issues freezing late in the year due to the cold temperatures.

CALIBRATIONS

The owner shall maintain a continuous flow-measuring device to measure the flow rate within an accuracy of +/- 5% of actual rate of flow within the range of 10% to 100% of the full-scale reading of the measuring devices.

In 2021, calibration of the continuous measuring device was calibrated by Lakeside Process Controls; results attached. The units were within the required accuracy, as outlined in the criteria above.

SLUDGE SUMMARY

Sludge is hauled from the facility to the sludge drying beds site by the Ontario Clean Water Agency. A summary of the sludge hauled for Hornepayne Sewage Treatment Plant is outlined in the following table.

Sludge Volume Hauled in 2021

Month	Total Volume(m3)
January	100
February	0
March	0
April	0
May	0
June	297
July	0
August	90
September	0
October	90
November	100
December	0
Total:	587

Attached are the sludge volume figures and Biosolids sludge quality sample results for the timeframe covered 2021.

The sludge is disposed of in the Hornepayne Sludge Drying Beds. There is no expected change in the sludge handling methods or disposal areas for the WWTP in the coming year.

COMPLAINTS/ENVIRONMENTAL INCIDENT

There were no complaints reported in 2021.

BY-PASS REPORTS

There were no bypass incidents in 2021.

**Performance Assessment Report
1st January – December 31st 2021**

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon

Report extracted 03/07/2022 14:43

Facility: [5985] HORNEPAYNE WASTEWATER TREATMENT FACILITY

From: 01/01/2021 to 31/12/2021

Works: [110001952]

	01/2021	02/2021	03/2021	04/2021	05/2021	06/2021	07/2021	08/2021	09/2021	10/2021	11/2021	12/2021	<-Total-->	<-Avg-->	<-Max-->	<-Criteria-->
Flows:																
Raw Flow: Total - Influent (m³)	11910.00	8619.00	16991.80	32878.00	24597.00	20770.00	18926.00	16264.00	22440.00	21720.00	16790.00	16825.00	228730.80			
Raw Flow: Avg - Influent (m³/d)	384.19	307.82	548.12	1095.93	793.45	692.33	610.52	524.65	748.00	700.65	559.67	542.74		625.67		
Raw Flow: Max - Influent (m³/d)	524.00	433.00	1059.00	2055.00	916.00	767.00	862.00	608.00	1298.00	927.00	791.00	1270.00			2055.00	
Eff. Flow: Total - Effluent (m³)	11910.00	8619.00	16991.80	32878.00	24597.00	20770.00	18926.00	16264.00	22440.00	21720.00	16790.00	16825.00	228730.80			
Eff. Flow: Avg - Effluent (m³/d)	384.19	307.82	548.12	1095.93	793.45	692.33	610.52	524.65	748.00	700.65	559.67	542.74		625.67		
Eff. Flow: Max - Effluent (m³/d)	524.00	433.00	1059.00	2055.00	916.00	767.00	862.00	608.00	1298.00	927.00	791.00	1270.00			2055.00	
Carbonaceous Biochemical Oxygen Demand: CBOD:																
Eff: Avg cBOD5 - Effluent (mg/L)	1.9	3.1	< 3	1.8	1.6	0.6	1.8	0.5	< 0.5	0.9	1.1	1.600		< 1.525	3.100	
Eff: # of samples of cBOD5 - Effluent (mg/L)	1	1	1	1	1	1	1	1	1	1	1	1	12			
Loading: cBOD5 - Effluent (kg/d)	0.73	0.954	< 1.644	1.973	1.27	0.415	1.099	0.262	< 0.374	0.631	0.616	0.814		< 0.906	1.973	
Biochemical Oxygen Demand: BOD5:																
Raw: Avg BOD5 - Influent (mg/L)	83.000	75.000	88.000	48.000	31.000	79.000	69.000	70.000	87.000	39.000	49.000	53.000		64.250	88.000	
Raw: # of samples of BOD5 - Influent (mg/L)	1	1	1	1	1	1	1	1	1	1	1	1	12			
Total Suspended Solids: TSS:																
Raw: Avg TSS - Influent (mg/L)	86.000	94.000	17.300	60.000	56.000	71.000	54.000	85.000	80.000	54.000	66.000	88.000		67.485	94.000	
Raw: # of samples of TSS - Influent (mg/L)	1	1	1	1	1	1	1	1	1	1	1	1	12			
Eff: Avg TSS - Effluent (mg/L)	7.670	7.000	8.330	8.000	6.300	5.300	6.000	4.000	4.000	4.300	5.000	6.300		6.017	8.330	
Eff: # of samples of TSS - Effluent (mg/L)	1	1	1	1	1	1	1	1	1	1	1	1	12			
Loading: TSS - Effluent (kg/d)	2.947	2.155	4.566	8.767	4.999	3.669	3.663	2.099	2.992	3.013	2.798	3.419		3.757	8.767	
Percent Removal: TSS - Influent (mg/L)	91.081	92.553	51.85	86.667	88.75	92.535	88.889	95.294	95	92.037	92.424	92.841			95.294	
Total Phosphorus: TP:																
Raw: Avg TP - Influent (mg/L)	1.820	2.660	2.610	1.050	1.710	1.890	2.450	2.910	2.480	1.390	1.200	1.930		2.008	2.910	
Raw: # of samples of TP - Influent (mg/L)	1	1	1	1	1	1	1	1	1	1	1	1	12			
Eff: Avg TP - Effluent (mg/L)	0.326	0.321	0.349	0.365	0.536	0.275	0.380	0.260	0.240	0.503	0.499	0.293		0.362	0.536	
Eff: # of samples of TP - Effluent (mg/L)	1	1	1	1	1	1	1	1	1	1	1	1	12			
Loading: TP - Effluent (kg/d)	0.125	0.099	0.191	0.400	0.425	0.190	0.232	0.136	0.180	0.352	0.279	0.159		0.231	0.425	
Percent Removal: TP - Influent (mg/L)	82.088	87.932	86.628	65.238	68.655	85.450	84.490	91.065	90.323	63.813	58.417	84.819			91.065	
Nitrogen Series:																
Raw: Avg TKN - Influent (mg/L)	16.400	21.800	22.000	12.900	12.100	13.100	11.600	13.000	19.100	38.800	9.100	13.300		16.933	38.800	
Raw: # of samples of TKN - Influent (mg/L)	1	1	1	1	1	1	1	1	1	1	1	1	12			
Eff: Avg TAN - Effluent (mg/L)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	0.03	0.01	< 0.01	< 0.01	< 0.01		< 0.0133	0.030	
Eff: # of samples of TAN - Effluent (mg/L)	1	1	1	1	1	1	1	1	1	1	1	1	12			
Loading: TAN - Effluent (kg/d)	< 0.004	< 0.003	< 0.005	< 0.011	< 0.008	< 0.007	0.018	0.016	0.007	< 0.007	< 0.006	< 0.005		< 0.008	0.018	
Disinfection:																
Eff: GMD E. Coli - Effluent (cfu/100mL)	46.789	4.472	23.87	65.727	52.368	31.432	420	296.856	668.538	329.848	128.125	231.1		191.594	668.538	
Eff: # of samples of E. Coli - Effluent (cfu/100mL)	3	2	3	2	3	2	1	3	3	2	2	2	28			

pH Monthly Process Data Report

**Ontario Clean Water Agency
Time Series Info Report**

From: 01/01/2021 to 31/12/2021

Report extracted 03/09/2022 13:45

Facility Org Number: 5985
Facility Works Number: 110001952
Facility Name: HORNEPAYNE WASTEWATER TREATMENT FACILITY
Facility Owner: Municipality: The Corporation of the Township of Hornepayne
Facility Classification: Class 2 Wastewater Treatment
Receiver: Little Jackfish River
Service Population: 1050.0
Total Design Capacity: 1363.0 m3/day

	01/2021	02/2021	03/2021	04/2021	05/2021	06/2021	07/2021	08/2021	09/2021	10/2021	11/2021	12/2021	Total	Avg	Max	Min
Effluent / pH - ---																
Max IH	8.54	8.72	8.94	9.03	9.63	7.69	7.21	6.89	7.93	7.72	7.78	7.97			9.63	
Mean IH	8.241	8.457	8.649	8.849	8.311	7.458	6.877	6.678	6.889	7.547	7.504	7.477		7.745		
Min IH	7.66	8.21	8.34	8.08	7.58	6.75	6.62	6.54	6.45	6.73	7.24	7.09				6.45

Biosolids Sludge Quality



CERTIFICATE OF ANALYSIS

Client:	Tyler McMullen	Work Order Number:	447984
Company:	OCWA - Hornepayne WWTP	PO #:	18164
Address:	37 Honka Drive Hornepayne, ON, P0M1Z0	Regulation:	Information not provided
Phone:	(807) 868-2380	Project #:	110001952
Email:	tmcmullen@ocwa.com	DWS #:	110001952
		Sampled By:	Mark Vanbreda
Date Order Received:	11/9/2021	Analysis Started:	11/10/2021
Arrival Temperature:	9 °C	Analysis Completed:	11/16/2021

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
Annual Sludge	1704553	Sludge	None		11/8/2021	7:55 AM

METHODS AND INSTRUMENTATION

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

Method	Lab	Description	Reference
Ammonia Water (A42)	Garson	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
ICPMS Tot. Water (A13)	Garson	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
TP Water (A23.2)	Garson	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Garson	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540



TESTMARK Laboratories Ltd.

Committed to Quality and Service

CERTIFICATE OF ANALYSIS

OCWA - Hornepayne WWTP

Work Order Number: 447984

This report has been approved by:

Mahesh Patel, B.Sc.
Laboratory Director



CERTIFICATE OF ANALYSIS

OCWA - Hornepayne WWTP

Work Order Number: 447984

WORK ORDER RESULTS

Sample Description	Annual Sludge		
Sample Date	11/8/2021 7:55 AM		
Lab ID	1704553		

Anions	Result	MDL	Units
Nitrate (as N)	0.56	0.05	mg/L

Sample Description	Annual Sludge		
Sample Date	11/8/2021 7:55 AM		
Lab ID	1704553		

General Chemistry	Result	MDL	Units
Ammonia (as N)	2.6	0.1	mg/L
Total Phosphorus (as P)	374	1	mg/L

Sample Description	Annual Sludge		
Sample Date	11/8/2021 7:55 AM		
Lab ID	1704553		

Metals (Total)	Result	MDL	Units
Total Aluminum	693000	1000	ug/L
Total Antimony	<5	5	ug/L
Total Arsenic	36	10	ug/L
Total Barium	4640	100	ug/L
Total Beryllium	<5	5	ug/L
Total Bismuth	138	10	ug/L
Total Boron	371	20	ug/L
Total Cadmium	6.3	0.2	ug/L



CERTIFICATE OF ANALYSIS

OCWA - Hornepayne WWTP

Work Order Number: 447984

Sample Description	Annual Sludge		
Sample Date	11/8/2021 7:55 AM		
Lab ID	1704553		
Metals (Total)	Result	MDL	Units
Total Calcium	393000	5000	ug/L
Total Cerium	52	10	ug/L
Total Cesium	<10	10	ug/L
Total Chromium	111	10	ug/L
Total Cobalt	43	1	ug/L
Total Copper	28300	1000	ug/L
Total Europium	<10	10	ug/L
Total Gallium	327	10	ug/L
Total Iron	128000	2000	ug/L
Total Lanthanum	31	10	ug/L
Total Lead	173	1	ug/L
Total Lithium	<50	50	ug/L
Total Magnesium	90500	40	ug/L
Total Manganese	23200	100	ug/L
Total Mercury	<1	1	ug/L
Total Molybdenum	<10	10	ug/L
Total Nickel	147	10	ug/L
Total Niobium	<10	10	ug/L
Total Potassium	60000	1000	ug/L
Total Rubidium	42	10	ug/L
Total Scandium	<10	10	ug/L
Total Selenium	11	2	ug/L
Total Silicon	19000	6000	ug/L
Total Silver	<1	1	ug/L



CERTIFICATE OF ANALYSIS

OCWA - Hornepayne WWTP

Work Order Number: 447984

Sample Description	Annual Sludge		
Sample Date	11/8/2021 7:55 AM		
Lab ID	1704553		
Metals (Total)	Result	MDL	Units
Total Sodium	37400	1000	ug/L
Total Strontium	868	10	ug/L
Total Sulphur	<8000	8000	ug/L
Total Tellurium	<10	10	ug/L
Total Thallium	1	1	ug/L
Total Thorium	<10	10	ug/L
Total Tin	<10	10	ug/L
Total Titanium	733	10	ug/L
Total Tungsten	<10	10	ug/L
Total Uranium	10	10	ug/L
Total Vanadium	115	10	ug/L
Total Yttrium	16	10	ug/L
Total Zinc	7370	100	ug/L
Total Zirconium	12	10	ug/L

Sample Description	Annual Sludge		
Sample Date	11/8/2021 7:55 AM		
Lab ID	1704553		
Solids	Result	MDL	Units
Total Suspended Solids	13000	10	mg/L



TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS

OCWA - Hornepayne WWTP

Work Order Number: 447984

LEGEND

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

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

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.

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

GENERAL CHAIN OF CUSTODY FORM

Please use our Drinking Water Chain of Custody Form for regulated drinking water samples

Page 1 of 1

REPORT TO: OCUA - Hornepayne *WUSTP*

Client: 37 Honka Drive
Address: Hornepayne, ON, P0M 1Z0
Contact: Mark Van Breda, Tyler McMullen
Email: see comments
Phone: 807-868-2380 Fax: see comments

INVOICE TO: (if different from Report)
Client: *WUSTP*
Address: *see comments*
Contact: *see comments*
Email: *see comments*
Phone: *see comments* Fax: *see comments*

PROJECT INFORMATION:
TM Quote #: _____
Client P.O. #: 0RG-5985-18164-505
Client Project #: 110001952

REPORTING/INVOICING FORMAT
 Fax Email Mail
QC DATA REPORTED
 Yes No

SAMPLE DISPOSAL
 Hold Dispose Return

SAMPLE DESCRIPTION
DATE (mm-dd-yy) TIME MATRIX**
Nov/8/20 0155 Bslq Annual Sludge

TURN AROUND TIME (TAT)*
 1 Business Day 2 Business Days
 3 Business Days Standard
SPECIFIC DATE: *Tues 16*
* Prior arrangements must be made for rush/weekend/holiday work

ANALYSIS REQUESTED
NUMBER OF CONTAINERS: 3
Total Metals and Hg: *included in metals*
TSS: *included in metals*
TP: *included in metals*
NH3: *included in metals*
NO3: *included in metals*

FIELD pH (if applicable)
FIELD TEMP (if applicable)
METALS FIELD FILTERED? (Y/N?)

LABORATORY USE ONLY
CONTAINERS RECEIVED: 3
TEMP: 9
Bit. Type: PAN
Lab ID: 1704553
447984 Da

REGULATION
 O.Reg. 153: (1 2 3 4 5 6 7 8 9
 Industrial / Commercial Residential / Parkland Agricultural
 Coarse Soil Fine Soil Surface Subsurface
 O.Reg. 558 PWQO MISA CoFA MDMER OODWS None
Sewer Use: Sanitary Storm Municipality: _____
 Other: _____

COMMENTS/FIELD NOTES
Additional report distribution: jaremey.hpayne@bellnet.ca; ddrawson@ocwa.com; mvanbreda@ocwa.com; palbert@ocwa.com; Dhoffman@ocwa.com; tmcullen@ocwa.com; jdubois@ocwa.com;
***Matrix: B=Biota, GW=Ground Water, O=Oil, P=Paint, S=Soil, SL=Sludge,
SW=Surface Water, W=Water, WW=Wastewater, SD=Sediment
 High Concentrations Expected

RECEIVED
Received at Testmark By: *Neil*
Date: *11/19/21*
Time: *09:30*

SHIPPED
Shipped By: *Neil*
Date: *11/19/21*
Time: *09:30*

7 Margaret Street, Garson, ON, P3L 1E1 • 705-693-1121 (P) • 705-693-1124 (F) • customer.service@testmark.ca
100 Wilson Ave., Timmins, ON, P4N 2S9 • 705-531-1121 (P) • 705-531-1125 (F) • timmins@testmark.ca
6820 Kitimat Road Unit #1, Mississauga, ON, L5N 5M3 • 905-821-1112 (P) • 905-821-2095 (F) • mississauga@testmark.ca
1470 Government Road, Kirkland Lake, ON P2N 3J1 • 705-642-3361 (P) • 705-642-3222 (F) • kirkland.lake@testmark.ca

Analyzer Verification/Calibration Summary

Calibration Certificate 1935

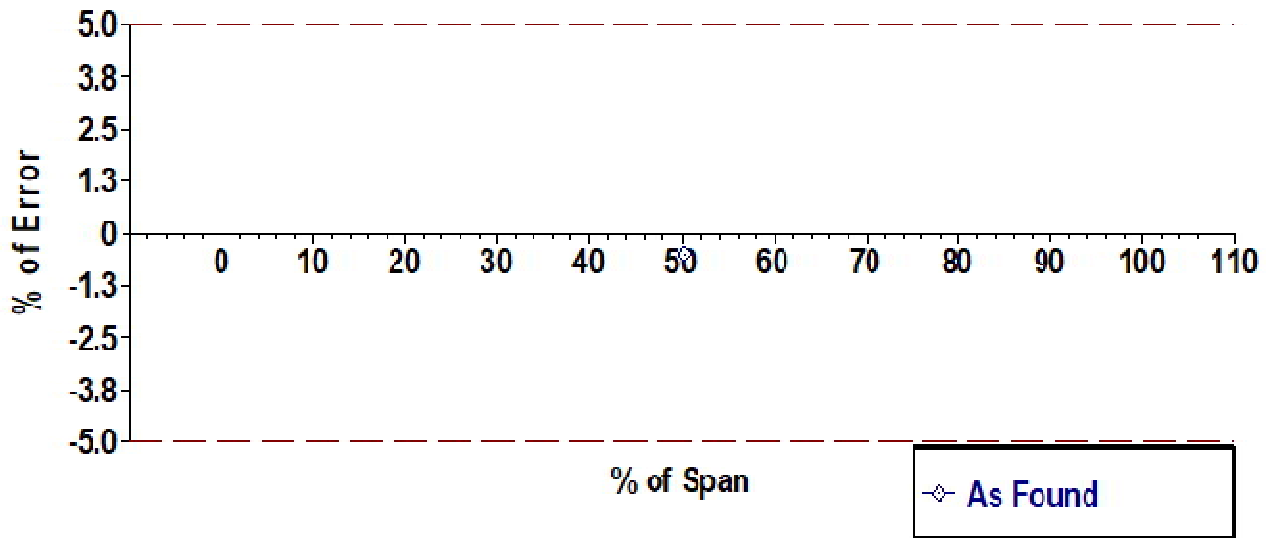
AMS Tag: Hornepayne Final Effluent

Calibrated at: 2021-06-09 10:38:16 AM

Calibration Result: PASSED

Device Identification	
AMS Tag:	Hornepayne Final Effluent
Device Tag:	
Manufacturer:	Siemens
Model Name:	Sitrans LUT440
Device Identifier:	3190364

Device Calibration Data			
Date/Time Calibrated:	2021-06-09 10:38:16 AM	Max Error Limit:	5.00 % of Span
Technician:	LPC_MISS\cefoul	Notification Limit:	5.00 % of Span
User:	LPC_MISS\cefoul	Adjustment Limit:	4.00 % of Span
Ambient Temperature:	20.00 deg C	Calibration Interval:	12 Months
Temperature Standard:	ITS-90	Critical Service:	Yes
Work Order Number:		Input Range:	0.00 - 24.39 in
Service Reason:	Yearly Calibration/Verification	Output Range:	0.00 - 24.39 in
Service Notes: A measurement is taken from the sensor head to a fixed distance. That distance is then compared to the meter readout.			
Relationship: Linear			



Calibration Certificate 1935

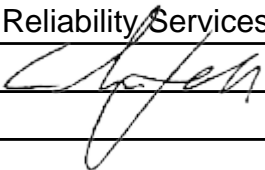
AMS Tag: Hornepayne Final Effluent

Test Equipment					
AMS Tag	Manufacturer	Model	Serial Number	Last Calibration	Calibration Interval:
Fluke Distance Meter	Fluke	416D	0682056623		12 Months
notused	not used	not used	notused	2014-09-01	12 Months
notused	not used	not used	notused	2014-09-01	12 Months
notused	not used	not used	notused	2014-09-01	12 Months

Errors (%)			
Error	Limit	Actual: As Found	Actual: As Left
Maximum	5.0000	-0.4920 (Pass)	(N/A)
Zero	(N/A)	(N/A)	(N/A)
Span	(N/A)	(N/A)	(N/A)
Linearity	(N/A)	(N/A)	(N/A)
Hysteresis	(N/A)	(N/A)	(N/A)

Calibration Results: As Found				
Test Point	Input	Output	Output Error	Output Error (%)
1	12.2500	12.1300	-0.1200	-0.4920

Calibration Results: As Left				
Test Point	Input	Output	Output Error	Output Error (%)

Authorization			
Title	Lakeside Process Controls - Asset Reliability Services		
Signature		Date	Jun 9/21
Title			
Signature		Date	