

**PUBLIC UTILITIES COMMISSION
FOR THE MUNICIPALITY OF CHATHAM-KENT**

BLenheim SEWAGE TREATMENT PLANT

2019 PERFORMANCE REPORT

January 1 to December 31, 2019

Environmental Compliance Approval # 6023-APPN4Q

Plant Description

The Blenheim Sewage Treatment Plant provides treatment of wastewater for the former Town of Blenheim, and for Charing Cross, as well as for leachate from the Ridge Landfill. Wastewater is collected by a separate sanitary sewer system and conveyed by two raw pumping stations to the Treatment Lagoons. The final effluent is subsequently discharged to the Cameron Drain.

Following several modifications to the original works, approval was received in 1995 for modification of the existing waste stabilisation ponds to the New Hamburg Process, and for expansion of hydraulic capacity.

According to the Certificate of Approval, average daily flow of sewage into the treatment plant shall not exceed 4,045m³/day, and peak flow shall not exceed 12,046m³/day.

The present treatment system consists of:

- Two raw pumping stations
- One aeration cell
- Chemical phosphorous removal
- Five waste stabilisation cells
- One filter effluent pump station
- Four effluent sand filters

The underdrain pipes discharge to the outfall structure, and to the Cameron Drain.

REPORTING REQUIREMENTS UNDER Amended Environmental Compliance Approval # 6023-APPN4Q

Summary and Interpretation of Influent and Imported Sewage, Monitoring Data and Rated Capacity Condition 11.4 (a)

Table 1 of this section outlines a summary and interpretation of all Influent and Imported Sewage monitoring data, including sewage characteristics, flow rates and a comparison to the values used in the design of the Works;

Success and Adequacy of the Works

During the reporting period, the annual average daily flow was 2,289 m³/day, which represents approximately 57% of the rated capacity of 4,045 m³/day. The maximum daily flow was 5,808 m³/day, which is 48% of the Peak Flow Rate of 12,046 m³/day.

There were no flow exceedances based on the Average Daily Influent Flow or Peak Flow Rate during this reporting period.

The Annual Average Daily Influent Flow did not reach 80% of the Rated Capacity for the reporting period.

Table 1: Summary of Influent and Imported Sewage monitoring data as well as rated capacity to the sewage works

Plant Rated Capacity: 4,045 m³/day

Total sewage flow to the works during a calendar year divided by the number of days during which sewage was flowing to the works that year

Month	Total Monthly Raw Flow m ³	Total Monthly Imported Sewage Flow m ³	Avg Daily Raw Flow /Month m ³ /day	Avg Daily Raw Flow /Year m ³ /day	% of Plant Capacity	BOD ₅ mg/L	Total S.S. mg/L	Total P mg/L	Alkalinity mg/L	TKN mg/L
Limits:	None	Included in Raw Flow	None	4,045	100					
Jan	77,997	7,797	2,516			101	132	3.1	332	47
Feb	76,743	7,839	2,741			101	100	2.9	720	143
Mar	75,182	6,074	2,425			91	103	3.0	443	64
Apr	86,398	7,540	2,880			88	123	3.2	464	65
May	89,510	6,389	2,887			82	85	3.7	347	43
Jun	77,256	6,302	2,575			113	91	2.2	492	63
Jul	68,557	5,899	2,212			122	114	2.7	404	52
Aug	58,054	5,306	1,873			153	156	3.6	595	104
Sept	50,365	3,278	1,679			155	145	3.0	577	121
Oct	54,135	3,349	1,746			104	103	3.8	418	78
Nov	58,499	3,737	1,950			107	119	3.7	441	78
Dec	62,640	3,198	2,021			111	113	3.3	396	61
Year				2,289	57%					
	Yearly Total Flow m ³	Yearly Maximums								
	835,337	7,839	2,887			155	156	3.8	720	143

Summary and Interpretation of Final Effluent Monitoring Data and Rated Capacity Condition 11.4 (b) of the ECA

Tables 2 & 3 under this section outline 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;

Table 2: Summary of Monitoring Data and Comparison to Final Effluent Limits & Objective Concentrations

Month	Total Monthly Effluent Flow m ³	Avg Daily Effluent Flow /Month m ³ /day	Avg Daily Flow /Year m ³ /day	CBOD ₅ mg/L	Total S.S. mg/L	Total Ammonia mg/L	Total P mg/L	Dissolved Oxygen mg/L	E.Coli /100mL CFU GeoMean	pH
Limits: (Nov. 1– Apr.30)	None	None	None	10	10	5.0	0.5	4.0	200 (May 15 – Sep.15)	6.0 – 9.5
Limits: (May 1 – Oct.31)	None	None	None	10	10	3.0	0.5	4.0	200 (May 15 – Sep.15)	6.0 – 9.5
Objectives: (Nov. 1– Apr.30)	None	None	None	5.0	5.0	4.0	0.3	5.0	150 (May 15 – Sep.15)	6.5 – 8.5
Objectives: (May 1 – Oct.31)	None	None	None	5.0	5.0	2.0	0.3	5.0	150 (May 15 – Sep.15)	6.5 – 8.5
Jan	0									
Feb	0									
Mar	0									
Apr	50,322	2,097		0.50	1.39	0.02	0.08	10.0	2	7.99
May	125,741	4,056		0.75	0.94	0.53	0.11	8.6	6	7.88
Jun	165,634	5,521		0.60	0.75	0.49	0.06	8.7	7	7.89
Jul	164,855	5,318		0.60	0.64	0.66	0.11	7.1	24	7.87
Aug	156,209	5,039		0.63	0.92	0.08	0.11	7.6	52	7.93
Sept	155,603	5,187		0.61	0.61	0.06	0.11	6.4	9	7.99
Oct	85,719	2,765		0.60	0.64	0.04	0.09	8.5	2	8.02
Nov	57,142	1,905		0.75	0.81	0.07	0.09	9.5	3	7.95
Dec	17,880	1,987		0.50	0.58	0.08	0.05	8.9	2	7.96
Year			3,980							
	Yearly Total Flow m³	Yearly Maximums						Yearly Minimum	Yearly Maximums	
	979,105	5,521		0.75	1.39	0.66	0.11	6.4	52	8.02

Table 3: Summary of Monitoring Data and Comparison to Final Effluent Loading Limits

Year	Avg Daily Effluent Flow /Year m³/day	CBOD₅ kg/day	Total S.S. kg/day	Total P kg/day	Total Ammonia kg/day
Limits: May 1 – Oct 31	None	40.4	40.4	2.0	12.1
Limits: Nov – April 30	None	40.4	40.4	2.0	20.2
2019	3,980	2.45	3.22	0.35	0.89

Success and Adequacy of the Works

No criteria were exceeded during this reporting period for the effluent limits as outlined in Schedule C – Concentration Limits and Loading Limits of the ECA.

Table 4 under this section outlines a summary of Final Effluent monitoring of Imported Sewage data with regards to quarterly analysis of the Final Effluent for Leachate Related parameters.

Table 4.1: Summary of Final Effluent Monitoring – Leachate Related from Outlet Structure

	January	April	July	October
Parameter	mg/L	mg/L	mg/L	mg/L
Arsenic		0.0028	0.0036	0.0033
Barium		0.024	0.032	0.027
Boron		0.774	0.944	1.10
Cadmium		<0.000070	<0.000070	<0.00010
Calcium		70.7	80.3	87.0
Chloride		256	284	370
Chromium		<0.002	<0.002	<0.005
Copper		0.004	<0.002	0.0035
Iron		0.038	0.027	<0.1
Lead		0.0002	<0.0001	<0.00050
Magnesium		21.2	24.1	30.0
Manganese		0.007	0.039	0.0051
Mercury		<0.00002	<0.00002	<0.0001
Potassium		43.8	53.8	65.0
Sodium		164	217	240
Sulphate		83	84	90
Zinc		0.012	<0.005	<0.005

Table 4.2: Summary of Final Effluent Monitoring – Leachate Related from Ridge Landfill

	January	April	July	October
Parameter	mg/L	mg/L	mg/L	mg/L
Arsenic	0.0060	0.0479	0.0273	0.044
Barium	0.665	0.509	0.564	0.690
Boron	24.3	12.6	13.4	20.0
Cadmium	<0.005	0.000271	0.000173	<0.001
Calcium	67.0	189	189	250
Chloride	6090	3930	3680	4600
Chromium	0.149	0.063	0.061	0.088
Copper	0.007	0.123	<0.002	0.44
Iron	2.08	11.5	8.16	11.0
Lead	0.00012	0.0150	0.0050	<0.0050
Magnesium	144	114	134	190
Manganese	0.139	0.531	0.512	0.440
Mercury	<0.00002	<0.00002	<0.00002	<0.0001
Potassium	1470	635	807	1000
Sodium	4110	2090	2320	3000
Sulphate	16	<10	141	210
Zinc	0.023	0.076	0.021	0.10

**Summary of all operating issues encountered and corrective actions taken
Condition 11 4 (c)**

There were no significant operating issues encountered during this reporting period.

**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
Condition 11 4 (d)**

Routine maintenance was performed throughout the reporting period. Chatham-Kent PUC utilises an electronic preventative maintenance program to track preventative maintenance. In addition to the routine maintenance, the following additional maintenance activities and equipment replacement were completed for the reporting period:

- Screen Room Internal Repairs \$ 26,000
- New Effluent Sampler 7,700

**Summary of any effluent quality assurance or control measures undertaken
Condition 11 4 (e)**

The Chatham-Kent Public Utilities Commission followed a sampling schedule developed in accordance with the Environmental Compliance Approval and applicable regulations for this reporting period.

Composite chemistry samples of the raw flow were collected using an auto sampler. Chemistry samples were submitted weekly to an accredited laboratory for analysis of BOD₅, Total Ammonia as Nitrogen, Total Suspended Solids, Total Kjeldhal Nitrogen, Total Phosphorus, Alkalinity and pH.

Composite chemistry samples of the effluent were collected using an auto sampler. Chemistry samples were submitted weekly during discharge periods to an accredited laboratory for analysis of BOD₅, CBOD₅, Total Suspended Solids, Total Kjeldhal Nitrogen, Total Phosphorus, Free Ammonia as Nitrogen, Alkalinity, pH, Nitrite, Nitrate and Unionized Ammonia.

Bacteriological samples of the effluent were collected weekly during discharge periods according to the Sampling Program. Bacteriological samples were submitted weekly during discharge periods to an accredited laboratory for analysis.

In house samples were analysed by a licensed operator for Dissolved Oxygen, Temperature and pH.

**Summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment
Condition 11 4 (f)**

All required probes and sensors are cleaned, maintained and/or calibrated on a monthly basis or as required by manufacturers' specifications.

Monitoring equipment calibration/verification report(s) included for the following:

- Influent flow meters
- Effluent flow meter
- Spectrophotometer
- pH meter

**Summary of efforts made to achieve the design objectives
Condition 11 4 (g)**

Table 2 outlines monthly average results of parameters tested compared to the objectives outlined in the ECA Schedule B Concentration Objectives

The following criteria was exceeded during this reporting period for the effluent objectives outlined in Condition 6 Effluent Objectives of the Certificate of Approval: None

No criteria were exceeded during this reporting period for the effluent limits as outlined in Schedule C - Final Effluent Compliance Limits of the ECA.

The sand filter beds were maintained throughout the year with the goal of achieving the effluent objectives of Total Suspended Solids in the effluent.

Estimate of the sludge volumes in the lagoon cells

Sludge volume is to be measured every five (5) years, but may be estimated in the interim years. A summary of disposal locations and volumes of sludge disposed of must also be provided if sludge was disposed of during the reporting period.

Condition 11 4 (h)

Lagoon	Sludge Volume m ³ (Approximate)
A	5,416
B	1,936
C	14,740
D	4,640

No sludge disposal occurred during the reporting period.

Summary of any complaints received and any steps taken to address the complaints

Condition 11 4 (i)

There were no Customer Complaints received during the reporting period.

Summary of all Bypasses, Overflows, Spills within the meaning of Part X of EPA and abnormal discharge events, and other abnormal operating conditions

Condition 11 4 (j)

None.

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 modification

Condition 11 4 (k)

There were no Notices of Modifications prepared or submitted to the Water Supervisor under paragraph 1.d. of Condition 10 for the reporting period.

APPENDIX A

Yearly Operational Data Summary for the Reporting Period

CHATHAM-KENT PUC																	
Operational Data Yearly Summary																	
Blenheim Sewage Treatment Plant																	
Works # 120001666																	
	MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL	AVERAGE	HIGH	LOW
RAW SEWAGE FLOW DATA																	
BLENHEIM FLOW MONTH TOTAL	1000 cu. m.	68.575	65.795	66.486	74.671	79.208	68.232	60.297	50.510	44.951	47.464	51.809	55.793	733.790	61.149	79.208	44.951
BLENHEIM FLOW MONTH AVG.	1000 cu. m.	2.212	2.350	2.145	2.489	2.555	2.274	1.945	1.629	1.498	1.531	1.727	1.800	23.910	2.013	2.555	1.498
CHARING CROSS FLOW MONTH TOTAL	1000 cu. m.	9.422	10.949	8.696	11.728	10.302	9.023	8.260	7.544	5.414	6.671	6.690	6.848	101.548	8.462	11.728	5.414
CHARING CROSS FLOW MONTH AVG.	1000 cu. m.	0.304	0.391	0.281	0.391	0.332	0.301	0.266	0.243	0.180	0.215	0.223	0.221	2.548	0.279	0.391	0.180
TOTAL FLOW MONTH	1000 cu. m.	77.997	76.743	75.182	86.398	89.510	77.256	68.557	58.054	50.365	54.135	58.499	62.640	835.337	69.611	89.510	50.365
TOTAL FLOW MONTH AVG.	1000 cu. m.	2.516	2.741	2.425	2.890	2.887	2.575	2.212	1.873	1.679	1.746	1.950	2.021	27.505	2.289	2.887	1.679
TOTAL FLOW MONTH PEAK	1000 cu. m.	3.691	3.900	3.703	5.808	4.268	3.466	3.235	2.196	2.019	3.408	2.577	2.518	33.966	5.808		
RAW SEWAGE CHEMICAL																	
AMMONIA	mg/l	41	106	54	57	34	54	45	51	105	71	72	52	62	106	34	
BOD5	mg/l	101	101	91	88	82	113	122	153	155	104	107	111	155	111	155	82
TKN	mg/l	47	143	64	65	43	63	52	104	121	78	78	61	76	143	43	
pH		7.59	7.58	7.42	7.56	7.47	7.49	7.47	7.52	7.60	7.56	7.63	7.56	7.54	7.63	7.42	
TOTAL P	mg/l	3.1	2.9	3.0	3.2	3.7	2.2	2.7	3.6	3.0	3.8	3.7	3.3	3.2	3.8	2.2	
SS	mg/l	132	100	103	123	85	91	114	156	145	103	119	113	469	115	156	85
ALKALINITY	mg/l	332	720	443	464	347	492	404	595	577	418	441	396	720	469	720	332
FINAL EFFLUENT CHEMICAL																	
AMMONIA	mg/l				0.10	2.11	2.46	3.29	0.42	0.27	0.18	0.29	0.47		1.06	3.29	0.10
CBOD5	mg/l				3	3	3	3	3	3	3	3	3		3.03	3.25	3.00
TKN	mg/l				2.05	3.30	3.80	5.20	1.90	1.83	1.66	1.90	2.10		2.637	5.2000	1.6600
pH (LABORATORY)					7.99	7.88	7.89	7.87	7.93	7.99	8.02	7.95	7.96		7.9	8.0160	7.8680
TOTAL P	mg/l				0.48	0.44	0.31	0.53	0.58	0.53	0.43	0.35	0.30		0.4	0.6	0.3
SS	mg/l				8	4	4	3	5	3	3	3	4		4.08	8.33	3.00
ALKALINITY	mg/l				159	142	176	198	191	212	221	195	183		186	221	142
NITRITE	mg/l				0.100	0.100	0.100	0.120	0.100	0.100	0.100	0.100	0.100		0.102		
NITRATE	mg/l				10.77	4.43	5.28	3.16	4.25	0.85	1.52	4.00	5.10		4.4	10.8	0.9
UN-IONIZED AMMONIA (Lab)	mg/l				0.010	0.088	0.115	0.064	0.025	0.013	0.010	0.020	0.025		0.04	0.12	0.01
IN HOUSE RESULTS																	
pH (IN HOUSE)					7.90	8.72	8.03	7.81	7.77	7.91	8.29	8.45	8.48		8.72	7.77	
TEMPERATURE	°C				9.0	13.1	14.3	23.7	23.8	20.6	15.3	8.2	4.8		15	24	5
DISSOLVED OXYGEN	mg/l				10.0	8.6	8.7	7.1	7.6	6.4	8.5	9.5	8.9		33.74	10.02	6.38
MONTHLY LOADING																	
AMMONIA	Kg/day				0.28	6.09	6.34	7.28	0.78	0.46	0.31	0.56	0.94		#VALUE!	#VALUE!	#VALUE!
CBOD5	Kg/day				8.64	8.66	7.73	6.63	6.09	5.04	5.24	5.85	6.06		#VALUE!	#VALUE!	#VALUE!
TOTAL P	Kg/day				1.39	1.26	0.80	1.18	1.09	0.88	0.75	0.69	0.61		#VALUE!	#VALUE!	#VALUE!
SS	Kg/day				24.00	10.83	9.66	7.08	8.90	5.04	5.59	6.34	7.07				
FINAL EFFLUENT (BACTERIOLOGICAL)																	
E COLI.	# / 100ml				2	6	7	24	52	9	2	3	2		12	52	2

Blenheim Sewage Treatment Plant		CHATHAM-KENT PUC															
Works # 120001666		Operational Data Yearly Summary															
	MONTH	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL	AVERAGE	HIGH	LOW
FINAL EFFLUENT FLOW																	
TOTAL MONTH FLOW	1000 cu. m.				50.322	125.741	165.634	164.855	156.209	155.603	85.719	57.142	17.880	979.105	81.592	165.634	
TOTAL HOURS					568	744	720	744	744	720	744	720	203	5907			
MONTH AVG. DAY FLOW	1000 cu. m.				2.097	4.056	5.521	5.318	5.039	5.187	2.765	1.905	1.987	3.764		5.521	
MONTH MAX DAY FLOW	1000 cu. m.				2.821	6.804	6.414	6.626	5.937	6.384	3.480	3.165	2.322			6.804	
NUMBER OF DISCHARGE DAYS					24	31	30	31	31	30	31	30	9	247			
PHOSPHOROUS REMOVAL CHEMICALS																	
DOSAGE	mg/L				60	60	60	60	60	60	60	60	60		60		
ALUMINUM SULPHATE	kgs.																
RECEIVING STREAM																	
TEMPERATURE	°C				9.7	14.1	14.0	24.0	23.0	20.0	16.0	10.0			16.4	24.0	9.7
Monthly Flow Weighted Average																	
AMMONIA					0.02	0.53	0.49	0.66	0.08	0.06	0.04	0.07	0.08		0.2	0.7	0.0
CBOD5					0.50	0.75	0.60	0.60	0.63	0.61	0.60	0.75	0.50		0.6	0.8	0.5
TOTAL P					0.08	0.11	0.06	0.11	0.11	0.11	0.09	0.09	0.05		0.1	0.1	0.1
SS					1.39	0.94	0.75	0.64	0.92	0.61	0.64	0.81	0.58		0.8	1.4	0.6

APPENDIX B

Calibration Reports for the Reporting Period



Endress Hauser
ProMag Series
Verification Report

AS FOUND CERTIFICATION
FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL

CUSTOMER CK - Blenheim
CONTACT DJ Degelas, Cheif Operator
18970 Charing Cross Rd., POnBox 460
Blenheim, ON, N0P 1A0
Ph: 519-6768543
Cell: 519-359-0236
E-mail: djd@chatham-kent.ca

[MUT] MANUFACTURER
MODEL
CONVERTER S/N:
FUSE

PLANT ID
METER ID
FIT ID
CLIENT TAG
OTHER
GPS COORDINATES

EQUIPMENT DETAIL

ENDRESS & HAUSER
Prosonic 93W
J4041E16000
Pull plug on unit

Blenheim Lagoon
Blenheim Influent Flow
FIT-151
n/a
JDE Tag#: 1423
N42 19.170 W082 01.565

VER. BY - FM Paris Machuk

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

VERIFICATION DATE
CAL. FREQUENCY
CAL. DUE DATE

March 19, 2019
Annual
March, 2020

PROGRAMMING PARAMETERS

DIAMETER (DN)	mm	250
F.S. FLOW - MAG	M3/H	1767.094
F.S. RANGE - O/P	M3/H	400.000
TUBE k-FACTOR		1.00000
TUBE zero		0.00000

FORWARD TOTALIZER INFORMATION

AS FOUND	2347114	M3
AS LEFT	2347182	M3
DIFFERENCE	68	M3

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	5

COMPONENTS TESTED

CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	yes
ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.	

FLOW TUBE SIMULATION

		0.0	100.0	200.0	300.0	400.0	M3/H
		0.0	5.7	11.3	17.0	22.6	% F.S. Flow
		0.0	25.0	50.0	75.0	100.0	% F.S. Range
REF. FLOW RATE		0.0	100.0	200.0	300.0	400.0	M3/H
MUT [Reading]		0.0	100.5	200.5	300.4	400.2	M3/H
MUT [Difference]		0.0	0.5	0.5	0.4	0.2	M3/H
MUT [% Error]		n/a	0.50	0.25	0.13	0.05	% O.R
mA OUTPUT		4.000	8.000	12.000	16.000	20.000	mA
MUT [Reading]	min. 4 mA	3.997	8.015	12.012	16.006	19.996	mA
MUT [Difference]	max. 20 mA	-0.003	0.015	0.012	0.006	-0.004	mA
MUT [% Error]		-0.08	0.19	0.10	0.04	-0.02	% O.R
TOTALIZER - REF. FLOW RATE						400.000	M3/H
TOTALIZER [MUT]						9	M3
TEST TIME						80.94	SECONDS
CALC. TOTALIZER						8.993	M3
ERROR						0.07	%

COMMENTS

NOTE: this verification does not verify the
install/setup of equipment which directly effect
the accuracy of the flow - SEE NOTES

Note: Scaling was changed from last year was
650 m3/h now set to 400 m3/h

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	E&H (FC)	1
PROCESS METER	PM	11
ANALOG METER	AM	n/a
STOP WATCH	SW	Yes

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	0.23	PASS
mA OUTPUT	0.05	PASS
TOTALIZER - R	0.07	PASS

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



AS FOUND CERTIFICATION

PASS

CLIENT DETAIL

CUSTOMER CK - Blenheim
CONTACT DJ Degelas, Cheif Operator
18970 Charing Cross Rd., POnBox 460
Blenheim, ON, N0P 1A0
Ph: 519-6768543
Cell: 519-359-0236
E-mail: djd@chatham-kent.ca

EQUIPMENT DETAIL

[MUT] MANUFACTURER Milltronics
MODEL MultiRanger PLUS
CONVERTER SERIAL NUMBER n/a

PLANT ID Blenheim Lagoon
METER ID Final Effluent Flow
FIT ID FIT-252
CLIENT TAG FIT-252
OTHER JDE Tag#: 288554
GPS COORDINATES N42 19.170 W082 01.565

VERIFICATION DATE March 19, 2019
CAL. FREQUENCY Annual
CAL. DUE DATE March, 2020

VER. BY - FM Paris Machuk

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

PROGRAMMING PARAMETERS

THROAT DIMENSION (DN)	inches	12
EMPTY DISTANCE	m	1.305
MAX. HEAD	m	0.769
DEAD ZONE	m	0.536
BLANKING DISTANCE	m	0.300
MAX. FLOW	MLD	40.0
F.S. RANGE - O/P	MLD	40.0

TOTALIZER

AS FOUND	20981.04	ML
AS LEFT	20981.27	ML
DIFFERENCE	0.23	ML

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
ALLOWABLE [%] ERROR	15

COMPONENTS TESTED

CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	yes

Ultrasonic sensor installed to ensure full scale flow condition

ERROR DOCUMENTED IN THIS REPORT, BASED ON % o.r.

AS FOUND TEST RESULTS

		0.0	12.9	37.0	68.5	96.3	% F.S. Range
		0.000	0.200	0.400	0.600	0.750	m
REF. FLOW RATE		0.000	5.153	14.800	27.433	38.528	MLD
MUT [Reading]		0.000	4.832	14.410	27.030	38.130	MLD
MUT [Difference]		0.000	-0.321	-0.390	-0.403	-0.398	MLD
MUT [% Error]		n/a	-6.24	-2.64	-1.47	-1.03	%
mA OUTPUT		4.000	6.060	9.917	14.967	19.402	mA
MUT [Reading]	min. 4.000 mA	4.000	5.930	9.773	14.821	19.275	mA
MUT [Difference]	max. 20.000 mA	0.000	-0.130	-0.144	-0.146	-0.127	mA
MUT [% Error]		0.00	-2.15	-1.45	-0.98	-0.66	%
TOTALIZER - REF. FLOW RATE						38.528	MLD
TOTALIZER [MUT]						0.06	ML
TEST TIME						131.91	SECONDS
CALC. TOTALIZER						0.059	ML
ERROR						1.96	%

COMMENTS

NOTE: believed that MOE percentage error in a wastewater application to be +/- 15%, please specify if other.

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] LEVEL	Sim. BOARD	n/a
PROCESS METER	PM	11
STOP WATCH	SW	n/a

RESULTS

TEST	AVG % o.r.	PASS/FAIL
DISPLAY	-2.84	PASS
mA OUTPUT	-1.05	PASS
TOTALIZER	1.96	PASS

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



AS FOUND CERTIFICATION

PASS

CLIENT DETAIL

CUSTOMER CK - Blenheim
CONTACT DJ Degelas, Cheif Operator
18970 Charing Cross Rd., PO Box 460
Blenheim, ON, N0P 1A0
Ph: 519-6768543
Cell: 519-359-0236
E-mail: djd@chatham-kent.ca

EQUIPMENT DETAIL

MODEL WaterMaster
SENSOR SERIAL NUMBER 3K620000263009
CONVERTER SERIAL NUMBER 3K620000263009
SENSOR SIZE (DN) 100

PLANT ID Blenheim Lagoon
METER ID Charing Cross Influent Flow
FIT ID FIT-152
CLIENT TAG N/A
OTHER JDE Tag#: 275208
GPS COORDINATES N42 19.170 W082 01 565
ADDRESS N/A
VERIFICATION DATE March 25, 2019
CAL. FREQUENCY Annual
CAL. DUE DATE March, 2020

VER. BY - FM Paris Machuk

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

SENSOR INFORMATION

Q3 m3/h 250
CALIBRATION ACCURACY OIML Class 2
SENSOR CAL. ACCURACY % 93
mm/sec -3.81
~ 11
DATE OF MANUFACTURE January 14, 2018
RUN HOURS d/h/m 151/18/22272

TRANSMITTER INFORMATION

APPLICATION VERSION V01.07.00 03/02/17
MSP VERSION 01.00.00
DATE OF MANUFACTURE January 14, 2018
RUN HOURS d/h/m 303/18/30464

ALLOWABLE TOLERANCE % 5.0

CURRENT OUTPUT

OUTPUT TEST	4.00	READING	ERROR	PASS
	20.00	mA	%	FAIL
4.0 mA	4.00	3.998	-0.05	PASS
12.0 mA	12.00	11.986	-0.12	PASS
20.0 mA	20.00	20.000	0.00	PASS

PULSE OUTPUT

OUTPUT TEST	READING	ERROR	PASS
	mA	%	FAIL
OUTPUT 1, Hz 100	N/A	N/A	N/A
OUTPUT 1, Hz 50	N/A	N/A	N/A
OUTPUT 2, Hz 100	N/A	N/A	N/A
OUTPUT 2, Hz 50	N/A	N/A	N/A

VERIFICATION HISTORY

OIML Accuracy Alarms 0

TOTALIZER INFORMATION

FORWARD 117750 m3
REVERSE 2049 m3
NET 115701 m3

SENSOR DATA

COIL CURRENT 179.9 mA
COIL INDUCTANCE 203 mH
COIL SHIFT -0.1 %
COIL/LOOP RESISTANCE 37.9 ohm

TRANSMITTER DATA

TX GAIN - ADJUSTMENT 0 %

VeriMASTER INFORMATION

VERSION 01.00.01
LIMIT VERSION 01.00.01

CONFIGURATION SETTINGS

MAINS/FREQUENCY 60 Hz
QMAX 150.06 m3/h
PULSES/UNIT 120
PULSES LIMIT FREQUENCY 1200 Hz
SENSOR USER SPAN 100 %
ZERO 0 mm/s
USER FLOW CUTOFF 1 %
HYSTERESIS 20 %
METER MODE Normal Operation

COMMENTS

Note: unit was showing an "?-Operation" error - when investigated an error S146.022 - Short Circuit Electrode was seen - with the help of ABB support was able to correct issue with adjustment of some parameters

Note: this unit is a replacement for the original Endress+Hauser 33F model

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	ABBWM	1
PROCESS METER	PM	11

The information contained within this report was produced by "VeriMASTER - Flow Meter Verification Report". The AS LEFT information is the same as the AS FOUND information within this report. If changes have been made relative to the accuracy of the calibration, an AS LEFT certificate will be issued.