

<p>Municipality Of Huron East 2014 Operations Report Brussels Wastewater Facilities Reporting Period Jan-Dec 2014</p>
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1. Introduction

Raw sewage from the town of Brussels collects at the Stretton Street pumping station before being pumped to the WWTP. The treatment process consists of an extended aeration sewage treatment facility with tertiary filtration, Hypochlorite disinfection with a treatment effluent to the Maitland River.

Following is a list the facilities main treatment components.

- An inlet works consisting of (2) grit removal channels.
- An emergency bypass bar screen and overflow to chlorine contact chamber.
- Two aeration tanks equipped with two surface aerators per tank.
- One final clarifier
- An aerated sludge holding tank c/w sludge return/wasting facilities.
- Chlorine contact chamber.
- Effluent filtration via two compartment effluent filter.
- Aerated sludge storage tank (930 cubic meters).
- An insulated chemical storage tank with metering pumps.

The sewage works including the Stretton Street pump station, are owned by the corporation of the municipality of Huron East.

2. Regulatory Issues

CH2MHILL has made every effort during the reporting period to operate this wastewater system in accordance with applicable laws, certificates and regulations. To the best of our knowledge, the following report truthfully and accurately reflects any and all matters of non-compliance regarding the ownership and operation of the wastewater treatment plant during the reporting period.

During this period, the plant was operated in full compliance with applicable laws, regulations and the WWTP'S Certificate of Approval, save and except the following:

3	during this period
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Requirement	Duration of Failure	Measures to Correct the Failure
E-Coli	Month of April	Re sample...
E-Coli	Month of July	Re sample...
E-Coli	Month of December	Re sample...

3. Compliance with Quality/Quantity Criteria

Brussels WWTP

Month	Average Volume/Day m ³ /d	Plant Utilization (based on Avg.)	Max Volume/Day m ³ /d
Jan	551	62.6	1169
Feb	438	49.7	645
Mar	627	71.2	1044
April	1279	145.3	2443
May	631	71.7	1180
June	433	49.2	518
July	423	48.0	579
Aug	414	47.0	500
Sept	423	48.0	539
Oct	436	49.5	543
Nov	687	78.1	2022
Dec	555	63.0	986

Plant Average Day Design Capacity is 880 m³/d

4. Quality Assurance/Quality Control

- Maxxam Analytics Inc. conducts the required physical, chemical and biological testing of influent and effluent from each WWTP.

5. Maintenance Summary

Brussels Pump Station

- CT Environmental in to clean out wet well
- Pulled #3 Sewage pump for inspection/cleaning
- Periodic wet well bar screen cleaning
- Ultrasonic level indicator inspecting/cleaning of “floats”

Brussels WPCP

- Drain (50%)/clean and inspect clarifier
- Repaired effluent wash down water pump
- Contact chambers were emptied/cleaned and inspected.
- Sludge Return pump #1 rebuilt
- Repaired broken valve in clarifier tank
- CT Environmental in to clean out both grit channels at inlet works
- New milltronics unit installed to measure effluent flow

General

- Maintained aeration blowers, return pumps and sewage pumps
- Inspected and ran all diesel generators monthly
- Maintained all chemical pumps and injection systems.

6. Environmental/Operating Problems

- There were no unusual environmental/operating problems during 2014

7. Proposed Alterations, Extensions or Replacements

- Switch from Gas to Liquid Chlorine in 2011
- Final effluent filter will need extensive work.

8. Calibration Procedures

- Flow meters were calibrated in 2014

9. Health & Safety Items

- Lifting equipment, Fire extinguishers, Gas monitors Monthly/Yearly inspections. Weekly Safety meeting along with Quarterly walk through completed for 2014

10. Status of Capital Projects

- Will need to look at replacement of filter

11. Other Items

- None

2014

MONTH Jan

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

Test # Date	MLSS	RAW INFLUENT			FINAL EFFLUENT						
	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 6-Jan	3520	130	120	5.3	2.0	7.0	0.24	0.07	1100	7.54	6.0
2 13-Jan	3943				2.0	7.0	0.23	0.05	49	7.61	4.3
3 20-Jan	3312				2.0	7.0	0.16	0.05	39	7.58	6.2
4 28-Jan	4057				2.0	20.0	0.13	0.50	150	7.65	7.55
5											
6											
Number of tests		1	1	1	4	4	4	4	4	4	4
Monthly Avg mg/l		130	120	5.3	2.0	10.3	0.19	0.17	133	7.60	6.02
Monthly Averages kg/d					1.1	5.7	0.104	0.09			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
 Total Phosphorus-November 1-April 30= Limit 1.0mg/L 0.9 kg/d
 Ammonia Changes Monthly See C of A
 pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times

2014

MONTH Feb

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

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	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 3-Feb	3215	140	130	5.1	2.0	7.0	0.20	0.06	93	7.57	8.7
2 10-Feb	4139				2.0	6.0	0.16	0.05	160	7.61	10.4
3 18-Feb	3327				2.0	6.0	0.17	0.05	360	7.54	6.5
4 24-Feb	3355				2.0	5.0	0.16	0.06	240	7.63	6.8
5											
6											
Number of tests		1	1	1	4	4	4	4	4	4	4
Monthly Avg mg/l		140	130	5.1	2.0	6.0	0.17	0.06	189	7.59	8.09
Monthly Averages kg/d					0.9	2.6	0.07	0.03			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

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2014

MONTH Mar

Brussels S.T.P.

Operating Number 110002354

YEAR 2014

Operating Authority: CH2MHILL

Municipality of Huron East

ANALYS Maxxam

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	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 3-Mar	3625	73	100	3.4	2.0	6.0	0.22	0.18	76	7.60	6.5
2 10-Mar	4387				2.0	6.0	0.21	0.06	41	7.58	5.0
3 17-Mar	3370				3.0	10.0	0.31	0.07	170	7.57	5.9
4 24-Mar	3709				4.0	10.0	0.29	0.05	40	7.6	6
5 31-Mar	3457				5.0	13.0	0.41	0.05	67	7.66	6.20
6											
Number of tests		1	1	1	5	5	5	5	5	5	5
Monthly Avg mg/l		73	100	3.4	3.2	9.0	0.29	0.08	68	7.60	5.91
Monthly Averages kg/d					2.0	5.6	0.18	0.05			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

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2014

MONTH Apr

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

Test # Date	MLSS	RAW INFLUENT			FINAL EFFLUENT						
	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 7-Apr	2142	43	60	1.9	4.0	22.0	0.55	0.11	730	7.72	7.9
2 14-Apr	3962				5.0	13.0	0.27	0.17	26000	7.50	4.8
3 22-Apr	4765				2.0	9.0	0.22	0.07	820	7.55	4.4
4 24-Apr									3400		
5 28-Apr	3639				3.0	11.0	0.27	0.08	140	7.93	7.06
6											
Number of tests		1	1	1	4	4	4	4	4	4	4
Monthly Avg mg/l		43	60	1.9	3.5	13.8	0.33	0.11	1493	7.68	6.04
Monthly Averages kg/d					4.5	17.6	0.42	0.03			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
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2014

MONTH May

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

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Test # Date	MLSS	RAW INFLUENT			FINAL EFFLUENT						
	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 5-May	3930	21	33	1.3	2.0	7.0	0.19	0.05	11	7.93	7.1
2 12-May	4263				5.0	15.0	0.47	0.51	2	7.49	3.1
3 20-May	2800				2.0	3.0	0.08	0.19	18	7.61	4.5
4 26-May	3172				2.0	5.0	0.15	0.12	27	7.59	3.52
5											
6											
Number of tests		1	1	1	4	4	4	4	4	4	4
Monthly Avg mg/l		21	33	1.3	2.8	7.5	0.22	0.22	10	7.66	4.56
Monthly Averages kg/d					1.8	4.7	0.14	0.14			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
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2014

MONTH June

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

Test # Date	MLSS	RAW INFLUENT			FINAL EFFLUENT						
	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 2-Jun	3516	120	130	4.6	2.0	6.0	0.17	0.17	310	7.67	2.7
2 9-Jun	2818				2.0	2.0	0.13	0.05	220	7.63	3.2
3 16-Jun	3110				2.0	1.0	0.14	0.31	16	7.48	2.7
4 23-Jun	2720				2.0	4.0	0.19	0.19	6	7.71	3.4
5											
6											
Number of tests		1	1	1	4	4	4	4	4	4	4
Monthly Avg mg/l		120	130	4.6	2.0	3.3	0.16	0.18	51	7.62	3.02
Monthly Averages kg/d					0.9	1.4	0.07	0.07			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
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2014

MONTH July

Brussels S.T.P.

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YEAR 2014

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	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 2-Jul	3173	67	80	3.2	2.0	4.0	0.17	0.11	15	7.83	2.0
2 7-Jul	3588				2.0	7.0	0.27	0.08	7	7.53	2.3
3 14-Jul	2761				2.0	1.0	0.11	0.17	96	6.95	4.7
4 21-Jul	3127				2.0	1.0	0.11	0.17	110	7.50	4.93
5 28-Jul	3394				2.0	1.0	0.11	0.13	6	7.58	3.30
6											
Number of tests		1	1	1	5	5	5	5	5	5	5
Monthly Avg mg/l		67	80	3.2	2.0	2.8	0.15	0.13	23	7.48	3.43
Monthly Averages kg/d					0.8	1.2	0.06	0.05			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
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2014

MONTH Aug

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

Test # Date	MLSS	RAW INFLUENT			FINAL EFFLUENT						
	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 5-Aug	3814	160	200	5.2	2.0	1.0	0.14	0.11	36	7.47	2.4
2 11-Aug	4230				2.0	1.0	0.19	0.14	200	7.44	2.8
3 20-Aug	4744				2.0	5.0	0.28	0.15	2300	7.45	3.2
4 25-Aug	4801				2.0	2.0	0.21	0.25	340	7.48	2.75
5											
6											
Number of tests		1	1	1	4	4	4	4	4	4	4
Monthly Avg mg/l		160	200	5.2	2.0	2.3	0.21	0.16	274	7.46	2.79
Monthly Averages kg/d					0.8	0.9	0.08	0.06			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
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2014

MONTH Sept

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

Test # Date	MLSS	RAW INFLUENT			FINAL EFFLUENT						
	Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 2-Sep	5221	100	260	5.3	2.0	3.0	0.19	0.29	86	7.54	2.8
2 8-Sep	4280				2.0	1.0	0.12	0.25	130	7.53	2.5
3 15-Sep	3620				2.0	1.0	0.12	0.16	9	7.61	4.5
4 22-Sep	1856				2.0	2.0	0.10	0.05	1	7.57	4.8
5 29-Sep	2400				2.0	3.0	0.11	0.05	9	7.55	5.19
6											
Number of tests		1	1	1	5	5	5	5	5	5	5
Monthly Avg mg/l		100	260	5.3	2.0	2.0	0.13	0.16	16	7.56	3.94
Monthly Averages kg/d					0.8	0.8	0.05	0.07			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
 Total Phosphorus-November 1-April 30= Limit 1.0mg/L 0.9 kg/d
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2014

MONTH Oct

Brussels S.T.P.

Operating Number 110002354

Operating Authority: O.M.I. Canada Inc.

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

Test # Date	MLSS	RAW INFLUENT			FINAL EFFLUENT						
	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 7-Oct	2779	190	190	5.3	2.0	1.0	0.11	0.05	18	7.65	3.9
2 14-Oct	3050				2.0	5.0	0.18	0.12	36	7.56	4.0
3 20-Oct	3146				2.0	6.0	0.12	0.11	18	7.61	6.1
4 27-Oct	3842				2.0	3.0	0.13	0.11	20	7.62	4.8
5											
6											
Number of tests		1	1	1	4	4	4	4	4	4	4
Monthly Avg mg/l		190	190	5.3	2.0	3.8	0.14	0.10	22	7.61	4.68
Monthly Averages kg/d					0.9	1.5	0.06	0.04			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
 Total Phosphorus-November 1-April 30= Limit 1.0mg/L 0.9 kg/d
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2014

MONTH Nov

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

Test # Date	MLSS	RAW INFLUENT			FINAL EFFLUENT						
	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 3-Nov	2599	150	230	5.7	2.0	6.0	0.21	0.05	460	7.67	6.6
2 10-Nov	2893				2.0	5.0	0.19	0.05	14	7.70	6.4
3 17-Nov	3546				2.0	3.0	0.11	0.19	78	7.64	5.8
4 24-Nov	2572				2.0	9.0	0.25	0.05	240	7.54	4.51
5											
6											
Number of tests		1	1	1	4	4	4	4	4	4	4
Monthly Avg mg/l		150	230	5.7	2.0	5.8	0.19	0.09	105	7.64	5.84
Monthly Averages kg/d					1.3	3.9	0.13	0.06			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
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2014

MONTH Dec

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2014

ANALYS Maxxam

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	East Aeration S.S.	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH	D.O.
1 1-Dec	4713	77	120	4.1	2.0	8.0	0.21	0.13	210	7.70	6.5
2 8-Dec	3679				2.0	2.0	0.09	0.05	160	7.65	5.1
3 15-Dec	1280				2.0	8.0	0.19	0.07	420	7.51	5.3
4 22-Dec	3691				2.0	8.0	0.23	0.05	210	7.58	7.19
5 29-Dec	2602				2.0	7.0	0.19	0.05	320	7.58	6.1
6											
Number of tests		1	1	1	5	5	5	5	5	5	5
Monthly Avg mg/l		77	120	4.1	2.0	6.6	0.18	0.07	249	7.60	6.02
Monthly Averages kg/d					1.1	3.6	0.09	0.03			
Monthly Objectives					10.0	10.0	see CofA	see CofA	0		
Monthly Limits mg/l/kg/d					15.0	15.0	see CofA	see CofA	200		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
 Total Phosphorus-November 1-April 30= Limit 1.0mg/L 0.9 kg/d
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 pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times

2014

BYPASS STP Bypass Events

Brussels S.T.P.
 Operating Number 110002354
 Operating Authority: CH2MHILL
 Municipality of Huron East

YEAR 2014

ANALYST Maxxam

Date	Time/Volume of Event				Notification		Sampled		Results of Analyst							
	Day Month	Start	Finish	Duration Hrs	Volume M3	Yes	No	Yes	No	BOD5 mg/L	S. S. mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Ammonia NH3 mg/L	E-Coli Per 100ml	pH
1	2:45 13-Apr	7:50 14-Apr	29.05	3379	X		X			46.0	37.0	0.79	250	1.60	140000	7.66
2																
3																
4																
5																
6																
7																
8																

Comments: Events in 2014

CH2MHILL Flow Reports Brussels STP 2014

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	471	300	473	1060	904	518	483	422	361	385	*	644
2	393	461	543	1397	779	453	493	420	462	356	*	582
3	431	460	425	1498	735	469	406	464	398	368	*	552
4	479	386	482	1363	802	464	436	403	352	480	*	567
5	479	410	494	1678	628	401	399	427	367	543	*	483
6	466	422	521	1630	655	379	438	401	483	541	762	514
7	466	409	473	1742	592	407	477	412	417	499	483	549
8	501	432	548	1723	538	444	464	391	418	422	516	479
9	359	458	499	2025	541	479	411	407	430	425	501	512
10	427	414	467	1941	597	436	429	409	407	435	490	476
11	503	511	519	2228	560	453	406	377	539	410	520	466
12	1169	399	573	1846	522	434	407	500	523	381	518	470
13	949	386	499	2443	525	514	448	450	433	436	466	489
14	872	342	572	2337	542	445	426	437	448	403	486	490
15	768	452	549	1715	719	440	414	387	435	444	433	445
16	706	368	637	1306	1180	404	430	419	431	416	504	464
17	677	397	594	1069	777	404	396	468	397	429	505	468
18	572	486	609	1035	735	403	392	405	361	501	470	502
19	595	417	599	856	665	403	421	409	376	459	459	454
20	494	417	836	838	665	390	357	411	409	466	474	466
21	476	645	838	782	747	426	388	415	464	474	487	510
22	431	457	855	669	576	412	390	378	518	427	464	450
23	575	541	754	704	591	403	398	413	435	429	590	484
24	576	520	678	609	562	419	363	390	444	393	1357	471
25	758	475	666	591	518	502	378	407	432	422	2022	820
26	299	399	641	571	480	431	373	389	386	470	1299	986
27	450	464	602	606	549	414	384	414	412	448	1062	832
28	320	448	685	581	492	407	579	378	361	426	850	733
29	478		1044	551	457	394	492	396	398	449	746	691
30	468		909	977	476	454	421	424	401	360	702	585
31	469		851		447		427	412		431		581
Total	17077	12276	19435	38371	19556	13002	13126	12835	12698	13528	17166	17215
Min.	299	300	425	551	447	379	357	377	352	356	433	445
Max	1169	645	1044	2443	1180	518	579	500	539	543	2022	986
Avg.	551	438	627	1279	631	433	423	414	423	436	687	555

*Flowmeter Fault.
Replace with new
Milltronics

CH2MHILL CI2 Results Brussels STP 2014

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.15	0.23	0.28	0.38	0.33	0.16	0.20	0.24	0.19	0.32	0.10	0.32
2	0.13	0.26	0.24	0.41	0.30	0.17	0.18	0.21	0.23	0.26	0.36	0.26
3	0.14	0.22	0.28	0.35	0.35	0.23	0.32	0.23	0.18	0.22	0.09	0.28
4	0.13	0.24	0.26	0.33	0.31	0.20	0.24	0.21	0.16	0.19	0.14	0.24
5	0.15	0.32	0.28	0.25	0.38	0.24	0.19	0.26	0.17	0.20	0.34	0.29
6	0.10	0.29	0.21	0.40	0.35	0.22	0.24	0.29	0.14	0.24	0.22	0.23
7	0.11	0.27	0.17	0.31	0.16	0.22	0.34	0.17	0.19	0.28	0.23	0.23
8	0.13	0.24	0.18	0.29	0.36	0.18	0.31	0.19	0.20	0.18	0.21	0.19
9	0.14	0.22	0.21	0.30	0.32	0.22	0.16	0.26	0.17	0.18	0.21	0.26
10	0.16	0.25	0.25	0.30	0.28	0.15	0.17	0.21	0.23	0.19	0.28	0.18
11	0.14	0.26	0.26	0.34	0.27	0.21	0.22	0.2	0.24	0.16	0.24	0.3
12	0.19	0.23	0.26	0.28	0.36	0.15	0.19	0.2	0.20	0.24	0.24	0.24
13	0.32	0.27	0.24	0.83	0.38	0.23	0.25	0.17	0.20	0.18	0.23	0.19
14	0.19	0.18	0.22	0.18	0.32	0.3	0.23	0.17	0.21	0.17	0.21	0.19
15	0.24	0.26	0.19	0.37	0.29	0.26	0.24	0.16	0.24	0.21	0.24	0.18
16	0.17	0.23	0.19	0.15	0.33	0.26	0.23	0.19	0.30	0.19	0.22	0.21
17	0.19	0.25	0.17	0.13	0.21	0.23	0.21	0.18	0.30	0.19	0.22	0.24
18	0.26	0.21	0.23	0.18	0.2	0.33	0.18	0.16	0.28	0.23	0.26	0.25
19	0.30	0.25	0.28	0.17	0.25	0.26	0.25	0.16	0.21	0.21	0.26	0.22
20	0.26	0.24	0.23	0.19	0.28	0.22	0.23	0.19	0.25	0.21	0.20	0.21
21	0.29	0.32	0.23	0.16	0.21	0.23	0.21	0.16	0.21	0.21	0.28	0.19
22	0.24	0.25	0.25	0.16	0.12	0.22	0.18	0.18	0.35	0.16	0.20	0.28
23	0.23	0.20	0.26	0.38	0.15	0.19	0.2	0.17	0.24	0.20	0.18	0.29
24	0.22	0.22	0.35	0.24	0.19	0.24	0.18	0.17	0.32	0.19	0.28	0.23
25	0.24	0.25	0.29	0.32	0.14	0.25	0.23	0.15	0.25	0.24	0.42	0.24
26	0.19	0.30	0.28	0.25	0.24	0.23	0.30	0.18	0.26	0.19	0.24	0.29
27	0.24	0.25	0.33	0.25	0.12	0.2	0.31	0.19	0.28	0.16	0.22	0.3
28	0.29	0.20	0.36	0.29	0.2	0.2	0.28	0.15	0.22	0.22	0.25	0.25
29	0.24		0.37	0.16	0.22	0.19	0.34	0.19	0.31	0.31	0.21	0.25
30	0.20		0.34	0.32	0.19	0.22	0.24	0.16	0.28	0.21	0.20	0.26
31	0.28		0.30		0.21		0.23	0.17		0.19		0.26
Min.	0.10	0.18	0.17	0.13	0.12	0.15	0.16	0.15	0.14	0.16	0.09	0.18
Max	0.32	0.32	0.37	0.83	0.38	0.33	0.34	0.29	0.35	0.32	0.42	0.32
Avg.	0.20	0.25	0.26	0.29	0.26	0.22	0.23	0.19	0.23	0.21	0.23	0.24

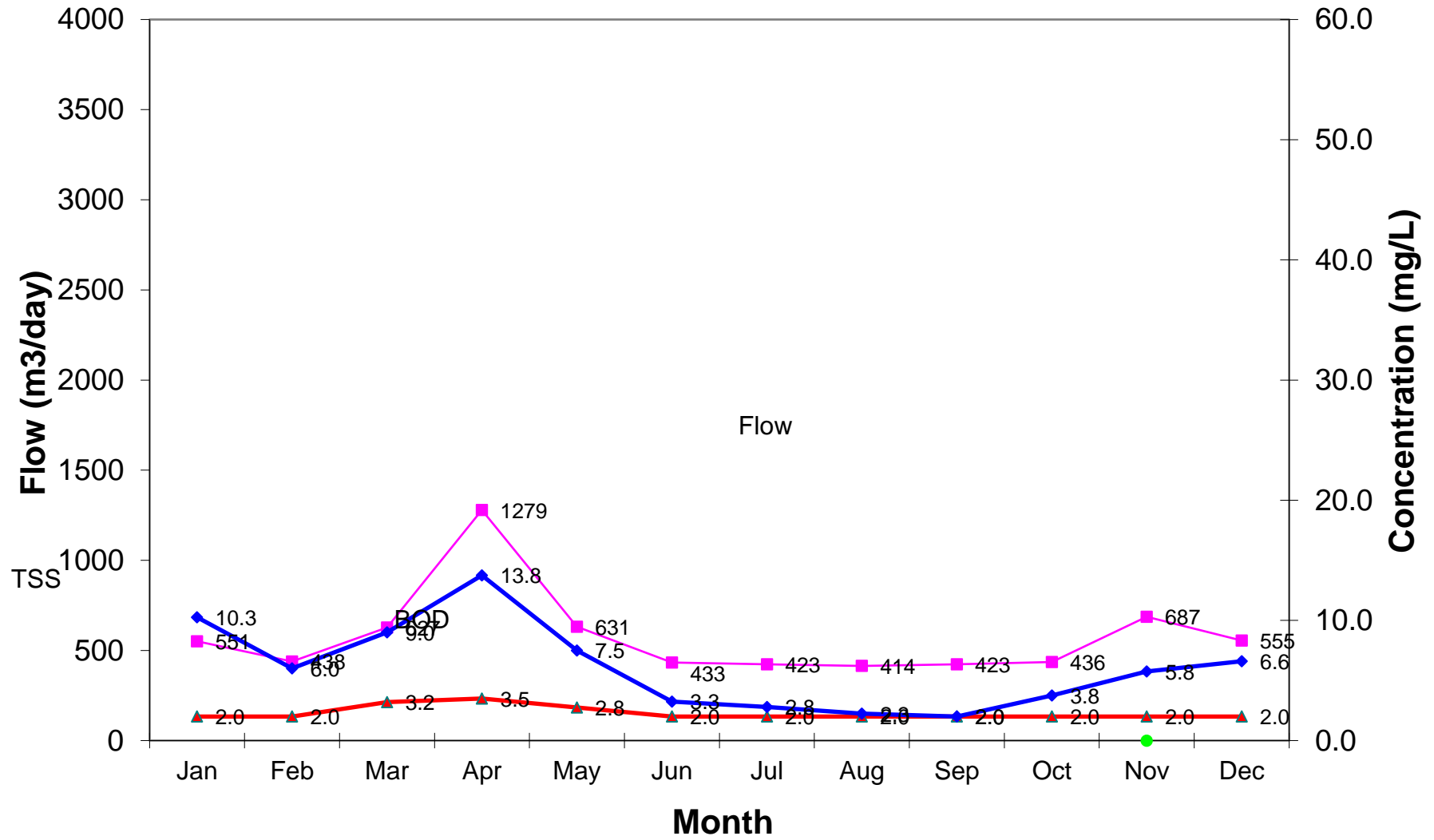
CH2MHILL pH Results Brussels ST 2014

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.58	7.60	7.6	7.59	7.81	7.49	7.45	7.30	7.50	7.67	7.66	7.7
2	7.56	7.69	7.59	7.62	7.78	7.67	7.83	7.36	7.54	7.52	7.68	7.67
3	7.67	7.57	7.6	7.8	7.7	7.58	7.48	7.37	7.51	7.57	7.67	7.67
4	7.50	7.58	7.58	7.93	7.76	7.64	7.37	7.45	7.51	7.46	7.74	7.61
5	7.62	7.60	7.57	7.88	7.93	7.59	7.43	7.47	7.60	7.60	7.66	7.62
6	7.54	7.59	7.63	7.88	7.75	7.57	7.51	7.54	7.62	7.65	7.69	7.19
7	7.30	7.60	7.51	7.72	7.55	7.62	7.53	7.45	7.54	7.61	7.80	7.51
8	7.81	7.55	7.56	7.86	7.68	7.68	7.44	7.51	7.53	7.62	7.77	7.65
9	7.59	7.59	7.49	7.85	7.6	7.63	7.44	7.44	7.51	7.67	7.78	7.68
10	7.58	7.61	7.58	7.81	7.67	7.6	7.45	7.47	7.52	7.63	7.70	7.7
11	7.64	7.62	7.61	7.69	7.62	7.56	7.49	7.44	7.53	7.59	7.73	7.58
12	7.59	7.64	7.54	7.9	7.49	7.56	7.46	7.45	7.56	7.62	7.66	7.66
13	7.61	7.70	7.57	7.91	7.62	7.5	7.55	7.44	7.54	7.52	7.70	7.62
14	7.66	7.72	7.62	7.5	7.57	7.45	6.95	7.62	7.56	7.56	7.69	7.46
15	7.78	7.62	7.61	7.79	7.6	7.48	7.53	7.50	7.61	7.57	7.68	7.51
16	7.65	7.69	7.55	7.81	7.6	7.48	7.52	7.56	7.64	7.55	7.69	7.57
17	7.56	7.48	7.57	7.92	7.72	7.52	7.60	7.49	7.54	7.56	7.64	7.59
18	7.66	7.54	7.59	7.82	7.74	7.51	7.46	7.45	7.59	7.59	7.66	7.54
19	7.58	7.58	7.61	7.79	7.64	7.5	7.48	7.45	7.59	7.62	7.68	7.46
20	7.58	7.61	7.56	7.86	7.61	7.51	7.49	7.44	7.51	7.61	6.89	7.49
21	7.62	7.69	7.59	7.77	7.67	7.37	7.50	7.47	7.54	7.62	7.68	7.52
22	7.61	7.66	7.64	7.55	7.66	7.33	7.64	7.44	7.57	7.60	7.64	7.49
23	7.67	7.67	7.7	7.89	7.62	7.71	7.06	7.53	7.61	7.61	7.66	7.55
24	7.17	7.63	7.6	7.73	7.64	7.41	7.59	7.52	7.59	7.65	7.54	7.61
25	7.32	7.59	7.61	7.7	7.63	7.45	7.53	7.48	7.60	7.62	7.74	7.48
26	7.38	7.64	7.63	7.81	7.59	7.43	7.53	7.51	7.59	7.64	7.68	7.56
27	7.64	7.54	7.64	7.57	7.63	7.51	7.58	7.53	7.68	7.62	7.55	7.61
28	7.65	7.59	7.65	7.93	7.63	7.52	7.58	7.46	7.63	7.62	7.62	7.61
29	7.64		7.63	7.86	7.67	7.46	7.54	7.50	7.55	7.64	7.57	7.58
30	7.62		7.68	7.23	7.59	7.50	7.54	7.51	7.58	7.67	7.54	7.62
31	7.60		7.66		7.63		7.44	7.50		7.66		7.61
Min.	7.17	7.48	7.49	7.23	7.49	7.33	6.95	7.30	7.50	7.46	6.89	7.19
Max	7.81	7.72	7.70	7.93	7.93	7.71	7.83	7.62	7.68	7.67	7.80	7.70
Avg.	7.58	7.61	7.60	7.77	7.66	7.53	7.48	7.47	7.57	7.60	7.65	7.57

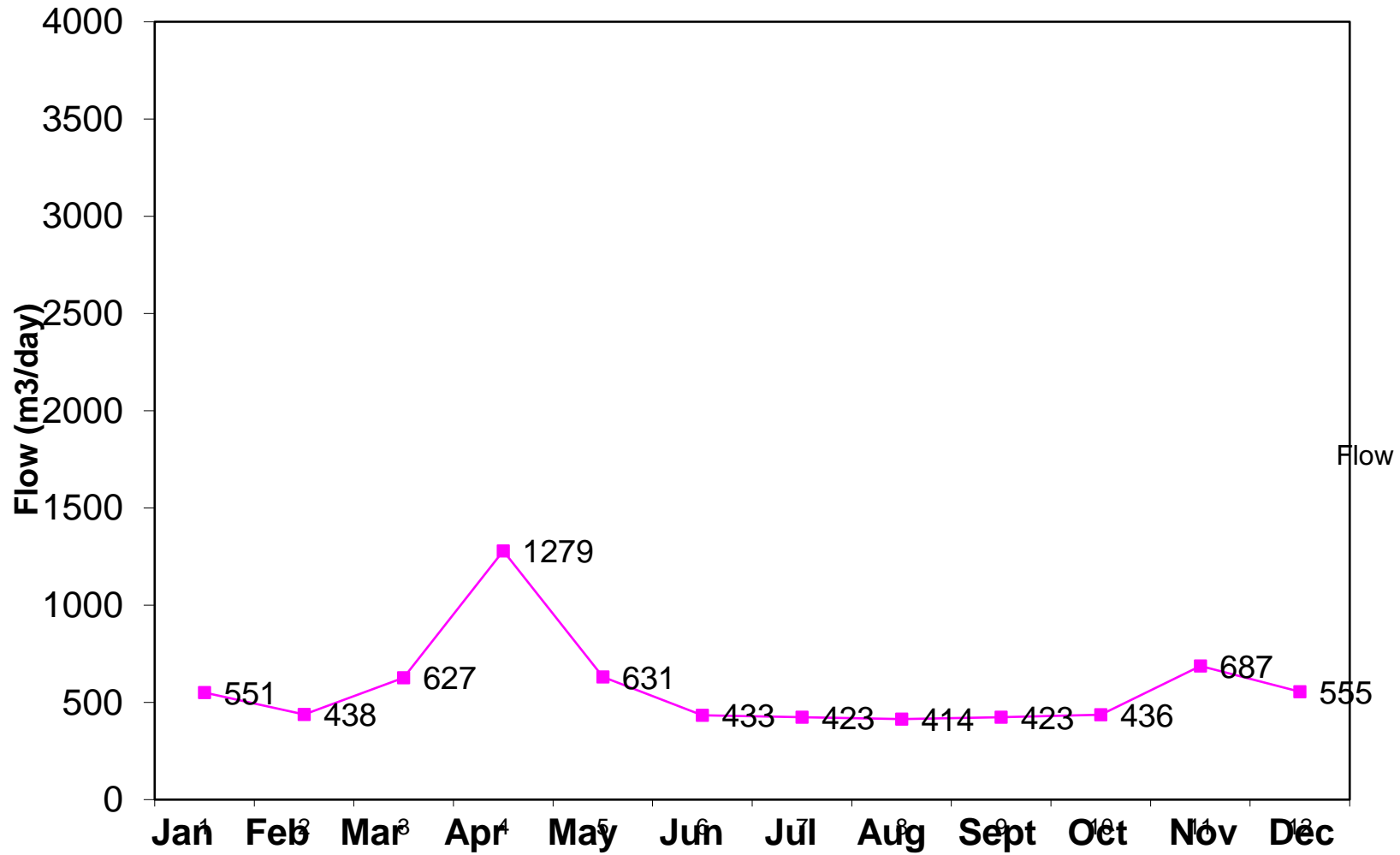
CH2MHILL Temp Results Brussels STP 2014

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.0	7.5	3.8	7.3	9.4	15.4	19.1	17.4	19.5	17.0	13.2	9.9
2	6.2	6.9	4.4	6.8	9.4	14.1	18.2	17.8	18.8	16.6	12.5	8.6
3	6.0	5.5	4.6	6.7	9.5	16.1	18.2	18.0	18.8	16.7	11.4	8.4
4	6.1	5.0	4.3	7.8	9.4	15.6	17.4	18.2	19.1	16.4	12.0	8.9
5	6.5	5.2	4.8	7.9	9.3	14.6	17.2	18.3	19.9	14.7	12.1	9.0
6	5.9	5.2	4.0	7.3	9.7	15.2	17.4	18.2	19.4	13.2	13.0	9.0
7	6.2	4.2	6.2	6.4	10.4	15.3	17.3	18.6	18.8	14.5	12.4	8.9
8	3.7	3.5	5.9	6.6	10.1	15.7	18.0	19.1	17.4	14.2	12.7	7.9
9	4.2	4.1	6.3	6.9	10.4	14.3	17.0	18.8	18.0	13.8	11.9	8.7
10	5.1	4.4	6.2	7.2	11.1	15.2	17.1	17.6	17.9	13.7	10.9	8.5
11	8.4	5.5	7.1	6.8	11.4	15.4	16.9	18.5	17.9	14.2	11.4	8.8
12	8.5	4.9	7.0	7.3	11.5	15.8	17.9	18.3	17.1	14.1	11.2	8.3
13	7.9	4.7	5.1	9.1	13.2	16.2	19.4	17.7	16.4	14.8	11.1	8.7
14	8.4	8.4	5.6	7.3	13.1	15.7	18.2	17.3	15.4	13.3	9.9	9.1
15	7.8	6.6	6.9	6.5	12.3	15.9	18.8	17.0	14.9	15.9	10.1	9.3
16	6.8	5.9	6.9	6.3	10.4	15.8	17.5	17.6	15.5	14.4	10.0	9.4
17	7.0	5.6	5.5	7.1	10.8	16.5	17.3	16.8	15.5	15.6	6.0	9.4
18	7.3	4.8	5.8	7.4	11.0	16.8	17.1	17.3	15.8	15.3	7.8	8.6
19	5.8	5.9	6.6	7.6	11.4	16.8	17.9	18.1	15.0	13.8	7.2	8.8
20	6.0	6.0	6.2	8.1	11.3	16.7	17.8	18.2	15.8	13.5	8.5	8.7
21	5.4	7.7	6.4	8.4	11.7	16.9	17.8	18.1	16.2	14.1	8.0	9.3
22	4.8	6.7	6.3	8.9	12.1	17.3	18.5	19.0	15.5	13.2	7.5	9.1
23	5.0	5.8	6.1	8.0	11.9	16.2	19.4	18.9	15.3	13.5	8.4	8.6
24	5.2	5.5	6.2	8.0	12.5	16.9	17.7	18.0	15.5	13.3	11.0	9.4
25	4.9	4.7	6.8	9.1	12.8	17.4	18.2	19.2	16.0	14.5	10.2	9.8
26	5.4	4.4	4.9	9.4	12.8	17.7	18.3	19.3	16.4	13.8	10.2	9.4
27	4.0	3.7	5.4	9.5	14.2	18.1	18.2	18.0	16.9	10.8	10.0	9.8
28	3.7	3.2	7.9	8.2	14.2	18.1	17.0	18.2	17.1	13.8	10.4	9.9
29	4.9		8.1	9.2	15.0	19.3	16.8	18.2	16.6	13.3	10.5	9.7
30	3.7		7.8	9.5	14.9	19.6	16.7	18.5	16.8	13.3	10.9	7.9
31	4.2		6.8		14.9		17.1	19.0		13.0		6.1
Min.	3.7	3.2	3.8	6.3	9.3	14.1	16.7	16.8	14.9	10.8	6	6.1
Max	8.5	8.4	8.1	9.5	15	19.6	19.4	19.3	19.9	17	13.2	9.9
Avg.	5.8	5.4	6.0	7.8	11.7	16.4	17.8	18.2	17.0	14.3	10.4	8.9

Brussels STP BOD and TSS vs Flow



Brussels STP. Average Monthly Flows



2014 Municipality of Huron East Brussels STP Monthly Average Lab Results

RAW SEWAGE				Effluent Concentration mg/l									Effluent Loading kg/d					
Test Date	BOD5 mg/L	S. S. mg/L	Total P mg/L	BOD5 mg/L	S. S. mg/L	Total P mg/L	Ammonia		E-Coli		pH	D.O	BOD5 kg/d	S.S. kg/d	Total P kg/d	Ammonia		Avg Monthly Flow
							NH3 mg/L	Per 100ml	Cl2 Res	Per 100ml						NH3 kg/d	Monthly	
Monthly																		
Jan	130	120	5.3	2.0	10.3	0.19	0.17	133	0.20	7.60	6.0	1.1	5.7	0.10	0.09	551		
Feb	140	130	5.1	2.0	6.0	0.17	0.06	189	0.25	7.59	8.1	0.9	2.6	0.07	0.03	438		
Mar	73	100	3.4	3.2	9.0	0.29	0.08	68	0.26	7.60	5.9	2.0	5.6	0.18	0.05	627		
Apr	43	60	1.9	3.5	13.8	0.33	0.11	1493	0.29	7.68	6.0	4.5	17.6	0.42	0.03	1279		
May	21	33	1.3	2.8	7.5	0.22	0.22	10	0.26	7.66	4.6	1.8	4.7	0.14	0.14	631		
Jun	120	130	4.6	2.0	3.3	0.16	0.18	51	0.22	7.62	3.0	0.9	1.4	0.07	0.07	433		
Jul	67	80	3.2	2.0	2.8	0.15	0.13	23	0.23	7.48	3.4	0.8	1.2	0.06	0.05	423		
Aug	160	200	5.2	2.0	2.3	0.21	0.16	274	0.19	7.46	2.8	0.8	0.9	0.08	0.06	414		
Sep	100	260	5.3	2.0	2.0	0.13	0.16	16	0.23	7.56	3.9	0.8	0.8	0.05	0.07	423		
Oct	190	190	5.3	2.0	3.8	0.14	0.10	22	0.21	7.61	4.7	0.9	1.5	0.06	0.04	436		
Nov	150	230	5.7	2.0	5.8	0.19	0.09	105	0.23	7.64	5.8	1.3	3.9	0.13	0.06	687		
Dec	77	120	4.1	2.0	6.6	0.18	0.07	249	0.24	7.60	6.0	1.1	3.6	0.09	0.03	555		
Monthly Objectives				10.0	10.0	See CofA		0				10.0	10.0	See CofA				
Monthly Limits				15.0	15.0	See CofA		200				15.0	15.0	See CofA				
				Yearly Averages/Min/Max														
Average	106	138	4.2	2.3	6.1	0.20	0.13	80	0.24	7.59	5.03	1.4	4.1	0.1	0.1	575		
Minimum	21	33	1.3	2.0	2.0	0.13	0.06	10	0.19	7.46	2.79	0.8	0.8	0.1	0.0	414		
Maximum	190	260	5.7	3.5	13.8	0.33	0.22	1493	0.29	7.68	8.09	4.5	17.6	0.4	0.1	1279		

Comments: Total Phosphorus-May 1-Oct 31 Limit 0.3mg/L 0.3 kg/d
 Total Phosphorus-November 1-April 30= Limit 1.0mg/L 0.9 kg/d
 Ammonia Changes Monthly See C of A
 pH is to be maintained in the range of 6.5 to 9.5 inclusive at all times