

**Municipality Of Huron East
2013 Operations Report
Brussels Wastewater Facilities
Reporting Period Jan-Dec 2013**

1. Introduction

Raw sewage from the town of Brussels collects at the Stratton Street pumping 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 Stratton 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:

x	None during this period
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Or

Requirement	Duration of Failure	Measures to Correct the Failure

3. Compliance with Quality/Quantity Criteria

Brussels WWTP

Month	Average Volume/Day m ³ /d	Plant Utilization (based on Avg. Day)	Max Volume/Day m ³ /d
Jan	672	76.8	2873
Feb	710	80.7	1812
Mar	799	90.8	2243
April	976	110.9	2050
May	477	54.2	619
June	504	57.3	991
July	476	54.1	656
Aug	487	55.3	960
Sept	427	48.5	685
Oct	701	79.6	1884
Nov	928	105.5	2975
Dec	537	61.0	704

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
- Rebuilt #1 Sewage pump (new wear rings)
- Generator repairs due to major oil leak

Brussels WPCP

- Blower # 1 and 2 repairs complete
- Drain/clean and inspect clarifier and contact chamber.
- Install slide gate in contact chamber.
- Install eye wash station in Chlorine room.
- Installed second set of bar screens. Remove Comminutor install cover over pump.
- Removed both filters from service. Removed media. Inspection required

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 2013

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 2013

9. Health & Safety Items

- Lifting equipment, Fire extinguishers, Gas monitors Monthly/Yearly inspections. Weekly Safety meeting along with Quarterly walk through completed for 2013

10. Status of Capital Projects

- Will need to look at replacement of filter

11. Other Items

- None

2013

MONTH Jan

Brussels S.T.P.

Operating Number 110002354

YEAR 2013

Operating Authority: CH2MHILL

Municipality of Huron East

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-Jan	3679	93	64	2.9	3.0	8.0	0.15	0.07	42	7.23	10.9
2 7-Jan	3631						0.30			7.42	10.9
3 14-Jan	3254									7.33	10.3
4 21-Jan	2955									8.04	11.5
5 28-Jan	3473									7.37	11.3
6											
Number of tests		1	1	1	1	1	2	1	1	5	5
Monthly Avg mg/l		93	64	2.9	3.0	8.0	0.23	0.07	42	7.48	10.98
Monthly Averages kg/d					2.0	5.4	0.15	0.047			
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

2013

MONTH Feb

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2013

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 4-Feb	3174	130	140	4.4	2.0	1.0	0.02	0.05	150	7.31	10.9
2 11-Feb	4134						0.14			7.53	11.3
3 18-Feb	3411									7.48	11.5
4 25-Feb	4044									7.45	11.3
5											
6											
Number of tests		1	1	1	1	1	2	1	1	4	4
Monthly Avg mg/l		130	140	4.4	2.0	1.0	0.08	0.05	150	7.44	11.25
Monthly Averages kg/d					1.4	0.7	0.056	0.035			
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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2013

MONTH Mar

Brussels S.T.P.

Operating Number 110002354

YEAR 2013

Operating Authority: CH2MHILL

Municipality of Huron East

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 4-Mar	3105	40	65	3.0	2.0	4.0	1.60	0.05	90	7.74	11.5
2 11-Mar	3540						0.13			7.44	10.7
3 18-Mar	2970									7.50	11.5
4 25-Mar	3496									7.80	11.3
5											
6											
Number of tests		1	1	1	1	2	2	1	1	4	4
Monthly Avg mg/l		40	65	3.0	2.0	4.0	0.87	0.05	90	7.62	11.25
Monthly Averages kg/d					1.6	3.2	0.695	0.039			
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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2013

MONTH Apr

Brussels S.T.P.

Operating Number 110002354

YEAR 2013

Operating Authority: CH2MHILL

Municipality of Huron East

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-Apr	3398	110	120	3.7	2.0	9.0	0.06	0.06	84	7.55	11.6
2 8-Apr	4102						0.09			7.39	11.1
3 15-Apr	3246									7.36	10.8
4 22-Apr	3648									7.4	11.3
5 29-Apr	3997									7.31	10.2
6											
Number of tests		1	1	1	1	1	2	1	1	5	5
Monthly Avg mg/l		110	120	3.7	2.0	9.0	0.07	0.06	84	7.40	11.00
Monthly Averages kg/d					1.9	8.8	0.065	0.055			
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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2013

MONTH May

Brussels S.T.P.

Operating Number 110002354

YEAR 2013

Operating Authority: CH2MHILL

Municipality of Huron East

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-May	3689	110	140	5.2	2.0	6.0	0.10	0.10	500	7.43	10.0
2 13-May	2384						0.10			7.38	10.7
3 21-May	2849								360	7.30	8.9
4 27-May	3321								97	7.43	9.6
5											
6											
Number of tests		1	1	1	1	1	2	1	1	4	4
Monthly Avg mg/l		110	140	5.2	2.0	6.0	0.10	0.10	259	7.39	9.80
Monthly Averages kg/d					1.0	2.9	0.047	0.47			
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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2013

MONTH June

Brussels S.T.P.

Operating Number 110002354

YEAR 2013

Operating Authority: CH2MHILL

Municipality of Huron East

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-Jun	3857	81	100	4.2	2.0	3.0	0.26	0.20	12	7.49	9.5
2 10-Jun	2617						0.15			7.59	9.1
3 17-Jun	3039									7.49	8.6
4 24-Jun	2823									7.55	8.9
5											
6											
Number of tests		1	1	1	1	1	2	1	1	4	4
Monthly Avg mg/l		81	100	4.2	2.0	3.0	0.21	0.20	12	7.53	9.02
Monthly Averages kg/d					1.0	1.5	0.1	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
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2013

MONTH July

Brussels S.T.P.

Operating Number 110002354

YEAR 2013

Operating Authority: CH2MHILL

Municipality of Huron East

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-Jul	3194	41	58	2.5	2.0	2.0	0.30	0.18	160	7.47	9.3
2 8-Jul	3463						0.28			7.44	7.7
3 15-Jul	2797									7.57	8.5
4 22-Jul	3200									7.67	8.5
5 29-Jul	2603									7.44	7.1
6											
Number of tests		1	1	1	1	1	2	1	1	1	1
Monthly Avg mg/l		41	58	2.5	2.0	2.0	0.29	0.18	160	7.52	8.23
Monthly Averages kg/d					1.0	1.0	0.14	0.085			
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
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2013

MONTH Aug

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2013

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-Aug	2857	86	110	3.7	2.0	2.0	0.10	0.23	62	7.63	7.2
2 12-Aug	3029						0.23			7.67	7.1
3 19-Aug	3330									7.41	6.5
4 26-Aug	3236									7.71	5.0
5											
6											
Number of tests		1	1	1	1	1	2	1	1	4	4
Monthly Avg mg/l		86	110	3.7	2.0	2.0	0.17	0.23	62	7.61	6.45
Monthly Averages kg/d					1.0	1.0	0.04	0.112			
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
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2013

MONTH Sept

Brussels S.T.P.

Operating Number 110002354

Operating Authority: CH2MHILL

Municipality of Huron East

YEAR 2013

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-Sep	3288	210	200	5.4	2.0	1.0	0.23	0.18	12	7.40	7.3
2 9-Sep	3646						0.30			7.52	6.8
3 16-Sep	3132									7.63	7.2
4 23-Sep	3943									7.3	7.2
5 30-Sep	3616									7.32	7.0
6											
Number of tests		1	1	1	1	1	2	1	1	5	5
Monthly Avg mg/l		210	200	5.4	2.0	1.0	0.27	0.18	12	7.43	7.08
Monthly Averages kg/d					0.9	0.4	0.115	0.076			
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
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2013

MONTH Oct

Brussels S.T.P.

Operating Number 110002354

YEAR 2013

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

Municipality of Huron East

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	4250	89	160	3.6	3.0	4.0	0.30	0.09	80	7.24	6.7
2 15-Oct	3734									7.36	7.4
3 21-Oct	4498						0.21			7.36	7.5
4 28-Oct	2016									7.54	6.2
5											
6											
Number of tests		1	1	1	1	1	2	1	1	4	4
Monthly Avg mg/l		89	160	3.6	3.0	4.0	0.26	0.09	80	7.38	6.93
Monthly Averages kg/d					2.1	2.8	0.18	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
 Total Phosphorus-November 1-April 30= Limit 1.0mg/L 0.9 kg/d
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2013

MONTH Nov

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

YEAR 2013

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 4-Nov	2866									7.45	8.8
2 12-Nov	3009	65	100	3.1	2.0	2.0	0.10	0.33	9	7.55	8.5
3 18-Nov	4077						0.02			7.40	8.3
4 25-Nov	3751									7.37	8.9
5											
6											
Number of tests		1	1	1	1	1	2	1	1	4	4
Monthly Avg mg/l		65	100	3.1	2.0	2.0	0.06	0.33	9	7.44	8.64
Monthly Averages kg/d					1.9	1.9	0.055	0.306			
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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2013

MONTH Dec

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

YEAR 2013

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 2-Dec	4328	67	72	3.0	2.0	3.0	0.10	0.05	110	7.59	8.5
2 9-Dec	3442						0.13			7.49	9.2
3 16-Dec	3775									7.43	9.9
4 23-Dec	3222				2.0	7.0	0.29	0.05	1200	7.54	5.1
5 30-Dec	4464				2.0	6.0	0.19	0.05	960	7.48	4.3
6											
Number of tests		1	1	1	3	3	4	3	3	5	5
Monthly Avg mg/l		67	72	3.0	2.0	5.3	0.18	0.05	502	7.51	7.40
Monthly Averages kg/d					1.1	2.8	0.097	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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2013

BYPASS STP Bypass Events

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

YEAR 2013

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
1 30-Jan	7:20	9:00	49.00	4654	X		X		5.0	37.0	0.99	210	0.70	80000	7.84
2 11-Mar	17:40	15:15	21.60	2400	X		X		4.0	30.0	0.88	200	0.05	62000	7.91
3 12-Apr	16:10	6:15	38.00	2695	X		X		4.0	21.0	0.35	220	0.61	380	7.79
4 31-Oct	15:15	8:00	88.75	6810	X		X		32.0	66.0	0.91	260	1.90	170000	7.84
5															
6															
7															
8															

Comments: Events in 2013

CH2MHILL Flow Reports Brussels STP 2013

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	464	1812	599	1041	619	563	656	960	364	415	2975	558
2	445	1261	558	827	546	595	525	938	376	396	2034	559
3	420	988	580	725	568	421	507	744	395	384	1637	528
4	457	861	560	694	577	436	516	577	428	397	720	513
5	417	714	519	654	556	379	497	512	402	416	852	636
6	513	712	528	702	570	461	486	523	392	434	810	697
7	443	594	516	672	509	422	632	613	440	614	1004	642
8	411	641	530	625	469	462	556	409	386	651	958	704
9	432	589	558	746	477	408	553	475	379	578	855	567
10	442	625	624	1087	461	469	492	487	388	505	1022	530
11	399	582	843	1429	571	603	489	501	413	494	984	499
12	1016	682	2433	1524	522	551	482	413	330	485	1066	486
13	979	595	1977	2050	494	545	500	451	370	565	906	483
14	1035	537	1474	1448	455	558	466	445	436	493	848	471
15	914	676	1193	1265	466	417	460	423	432	447	737	454
16	727	566	1078	963	470	485	474	472	473	457	682	478
17	586	496	902	914	443	560	445	395	364	470	726	454
18	469	522	661	696	424	491	464	400	347	542	1087	445
19	678	649	744	1355	383	462	451	407	394	555	1030	459
20	664	894	668	1763	436	443	482	448	397	602	815	494
21	548	664	580	1062	414	443	457	468	591	644	737	471
22	566	606	597	958	487	510	382	305	685	748	697	580
23	556	702	611	822	522	431	416	396	470	820	744	634
24	496	595	578	820	454	423	377	406	441	734	618	612
25	467	613	577	856	380	457	379	398	465	1096	602	565
26	540	567	553	780	395	393	410	413	426	1669	618	553
27	514	538	565	741	417	471	408	436	457	1884	565	547
28	537	611	615	755	395	501	518	399	430	1395	512	491
29	540		680	690	421	991	442	400	436	1135	547	598
30	1294		826	628	456	766	425	379	489	858	453	463
31	2873		1033		422		401	501		849		463
Total	20842	19892	24760	29292	14779	15117	14748	15094	12796	21732	27841	16634
Min.	399	496	516	625	380	379	377	305	330	384	453	445
Max	2873	1812	2433	2050	619	991	656	960	685	1884	2975	704
Avg.	672	710	799	976	477	504	476	487	427	701	928	537

CH2MHILL CI2 Results Brussels STP 2013

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.16	0.20	0.18	0.20	0.18	0.20	0.13	0.26	0.17	0.17	0.27	0.16
2	0.15	0.16	0.17	0.17	0.19	0.16	0.08	0.19	0.15	0.20	0.24	0.11
3	0.17	0.15	0.16	0.16	0.15	0.17	0.21	0.16	0.10	0.17	0.13	0.14
4	0.16	0.18	0.16	0.20	0.15	0.16	0.18	0.15	0.19	0.15	0.19	0.15
5	0.16	0.18	0.12	0.18	0.15	0.17	0.21	0.18	0.21	0.14	0.22	0.12
6	0.20	0.13	0.21	0.22	0.15	0.19	0.17	0.16	0.19	0.19	0.14	0.14
7	0.14	0.14	0.19	0.20	0.17	0.23	0.16	0.22	0.21	0.22	0.16	0.14
8	0.20	0.13	0.21	0.18	0.17	0.18	0.15	0.17	0.19	0.20	0.15	0.15
9	0.17	0.13	0.15	0.20	0.18	0.2	0.15	0.14	0.16	0.19	0.25	0.16
10	0.16	0.14	0.15	0.16	0.12	0.19	0.18	0.13	0.09	0.20	0.18	0.11
11	0.16	0.13	0.19	0.18	0.11	0.1	0.13	0.14	0.17	0.14	0.20	0.15
12	0.15	0.19	0.28	0.20	0.16	0.14	0.16	0.11	0.20	0.17	0.20	0.14
13	0.16	0.13	0.24	0.20	0.13	0.16	0.17	0.17	0.17	0.13	0.18	0.13
14	0.26	0.20	0.23	0.19	0.14	0.16	0.12	0.21	0.13	0.19	0.15	0.12
15	0.23	0.12	0.19	0.21	0.13	0.15	0.13	0.14	0.16	0.17	0.11	0.13
16	0.22	0.20	0.20	0.20	0.14	0.16	0.07	0.17	0.14	0.16	0.14	0.19
17	0.16	0.16	0.18	0.17	0.15	0.19	0.13	0.19	0.24	0.18	0.18	0.14
18	0.12	0.10	0.16	0.20	0.14	0.13	0.12	0.16	0.19	0.21	0.15	0.12
19	0.19	0.15	0.20	0.18	0.12	0.11	0.16	0.16	0.16	0.20	0.15	0.16
20	0.17	0.12	0.17	0.22	0.13	0.11	0.14	0.17	0.23	0.22	0.10	0.19
21	0.17	0.12	0.16	0.16	0.13	0.17	0.17	0.15	0.21	0.17	0.11	0.12
22	0.18	0.14	0.19	0.17	0.16	0.16	0.14	0.15	0.18	0.19	0.17	0.12
23	0.20	0.13	0.17	0.20	0.2	0.14	0.16	0.11	0.17	0.17	0.14	0.16
24	0.12	0.11	0.15	0.15	0.13	0.14	0.14	0.11	0.14	0.20	0.14	0.16
25	0.13	0.15	0.14	0.20	0.14	0.20	0.12	0.12	0.19	0.19	0.10	0.11
26	0.20	0.18	0.13	0.18	0.13	0.08	0.11	0.11	0.18	0.26	0.14	0.14
27	0.17	0.16	0.19	0.16	0.2	0.13	0.14	0.13	0.16	0.23	0.17	0.22
28	0.18	0.17	0.18	0.15	0.15	0.11	0.12	0.20	0.15	0.22	0.16	0.16
29	0.17		0.18	0.09	0.2	0.13	0.16	0.15	0.16	0.17	0.18	0.17
30	0.05		0.20	0.19	0.17	0.14	0.14	0.16	0.21	0.16	0.18	0.13
31	0.27		0.17		0.14		0.14	0.19		0.21		0.19
Min.	0.05	0.10	0.12	0.09	0.11	0.08	0.07	0.11	0.09	0.13	0.1	0.11
Max	0.27	0.20	0.28	0.22	0.2	0.23	0.21	0.26	0.24	0.26	0.27	0.22
Avg.	0.17	0.15	0.18	0.18	0.15	0.16	0.14	0.16	0.17	0.19	0.17	0.15

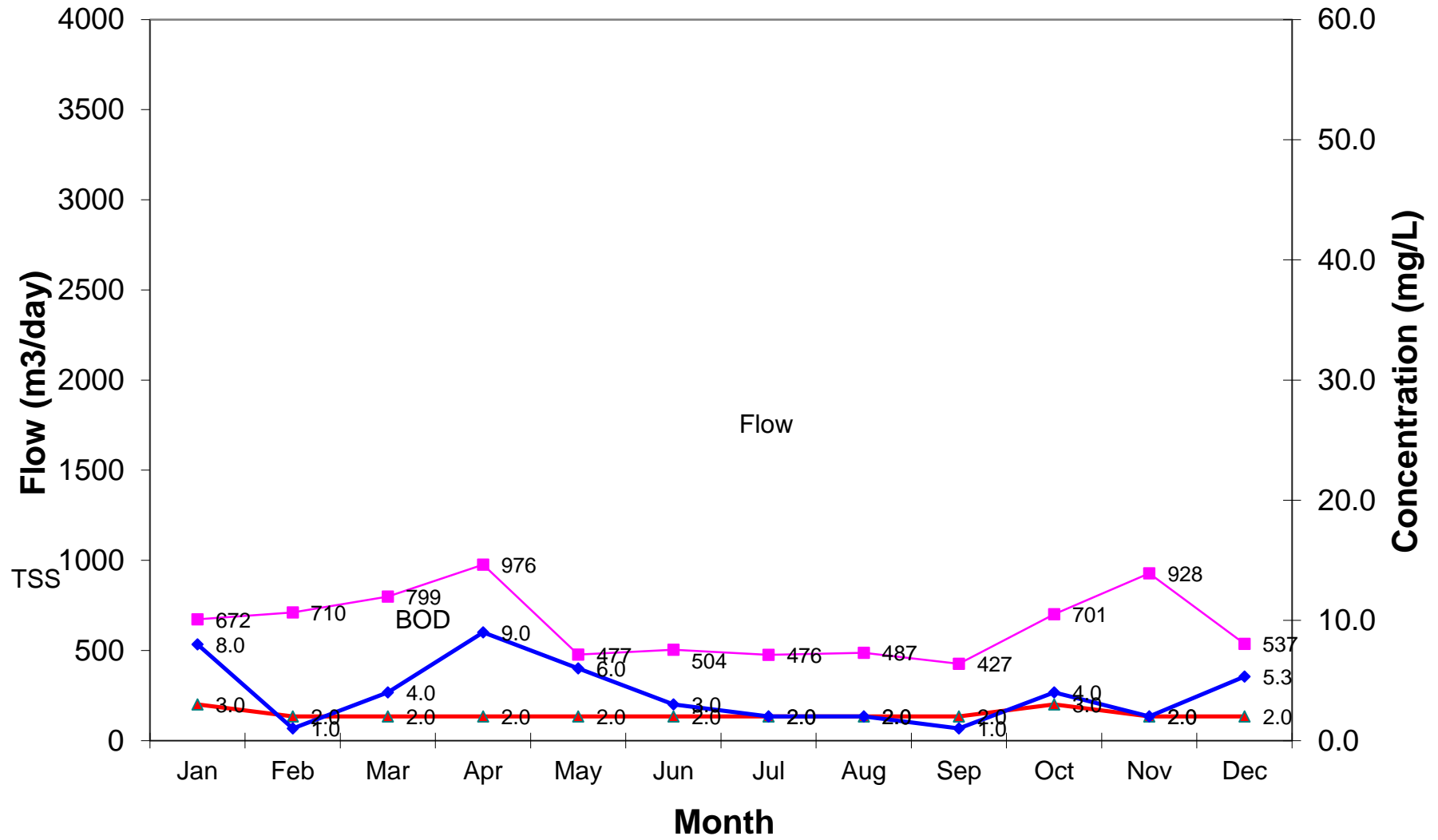
CH2MHILL pH Results Brussels STP 2013

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.36	7.71	7.56	7.51	7.46	7.4	7.59	7.37	7.54	7.41	7.45	7.51
2	7.23	7.63	7.54	7.55	7.47	7.37	7.47	7.56	7.43	7.43	7.45	7.59
3	7.23	7.57	7.52	7.45	7.56	7.49	7.53	7.62	7.40	7.41	7.42	7.47
4	7.26	7.31	7.74	7.43	7.5	7.52	7.60	7.62	7.52	7.28	7.37	7.43
	7.24	7.62	7.54	7.49	7.45	7.43	7.37	7.52	7.62	7.21	7.45	7.44
6	7.19	7.61	7.52	7.43	7.43	7.47	7.61	7.63	7.75	7.24	7.53	7.53
7	7.42	7.55	7.49	7.44	7.47	7.68	7.50	7.50	7.76	7.24	7.53	7.54
8	7.25	7.36	7.51	7.39	7.44	7.54	7.44	7.67	7.70	7.31	7.52	7.48
9	7.18	7.87	7.48	7.35	7.43	7.62	7.38	7.74	7.52	7.31	7.53	7.49
10	7.19	7.67	7.45	7.41	7.49	7.59	7.60	7.70	7.75	7.37	7.50	7.51
11	7.28	7.53	7.44	7.42	7.48	7.45	7.61	7.65	7.64	7.40	7.52	7.51
12	7.23	7.62	7.60	7.5	7.45	7.51	7.55	7.67	7.72	7.39	7.47	7.61
13	7.27	7.70	7.58	7.77	7.38	7.37	7.63	7.58	7.76	7.27	8.50	7.57
14	7.33	7.59	7.48	7.57	7.48	7.5	7.56	7.51	7.56	7.42	7.52	7.47
15	7.45	7.73	7.63	7.36	7.55	7.65	7.57	7.68	7.49	7.36	7.44	7.56
16	8.12	7.75	7.64	7.45	7.33	7.59	7.57	7.52	7.63	7.41	7.46	7.43
17	7.39	7.66	7.59	7.65	7.43	7.49	7.63	7.62	7.59	7.42	7.45	7.48
18	7.42	7.48	7.50	7.43	7.49	7.61	7.66	7.34	7.48	7.37	7.41	7.44
19	7.45	7.59	7.58	7.4	7.43	7.49	7.67	7.41	7.51	7.41	7.40	7.42
20	7.74	7.68	7.68	7.43	7.37	7.46	7.71	7.44	7.38	7.36	7.45	7.55
21	8.04	7.58	7.62	7.61	7.3	7.52	7.65	7.51	7.40	7.36	7.49	7.59
22	7.64	7.63	7.61	7.4	7.29	7.51	7.67	7.55	7.55	7.48	7.43	7.48
23	7.65	7.70	7.57	7.41	7.23	7.55	7.65	7.47	7.30	7.37	7.61	7.54
24	7.32	7.55	7.81	7.39	7.22	7.55	7.56	7.40	7.12	7.41	7.55	7.58
25	7.58	7.45	7.80	7.4	7.33	7.53	7.57	7.54	7.44	7.47	7.50	7.57
26	7.60	7.45	7.56	7.44	7.29	7.63	7.62	7.71	7.43	7.59	7.37	7.59
27	7.51	7.56	7.53	7.37	7.43	7.7	7.34	7.66	7.23	7.57	7.48	7.49
28	7.37	7.57	7.51	7.43	7.25	7.69	7.42	7.68	7.40	7.54	7.45	7.60
29	7.49		7.47	7.31	7.24	7.55	7.44	7.30	7.34	7.73	7.44	7.52
30	7.80		7.43	7.37	7.34	7.70	7.57	7.43	7.32	7.56	7.47	7.48
31	7.76		7.38		7.45		7.52	7.51		7.57	7.55	7.55
Min.	7.18	7.31	7.38	7.22	7.22	7.37	7.34	7.3	7.12	7.21	7.37	7.42
Max	8.12	7.87	7.81	7.56	7.56	7.7	7.71	7.74	7.76	7.73	8.5	7.61
Avg.	7.45	7.60	7.56	7.40	7.40	7.54	7.56	7.55	7.51	7.41	7.51	7.52

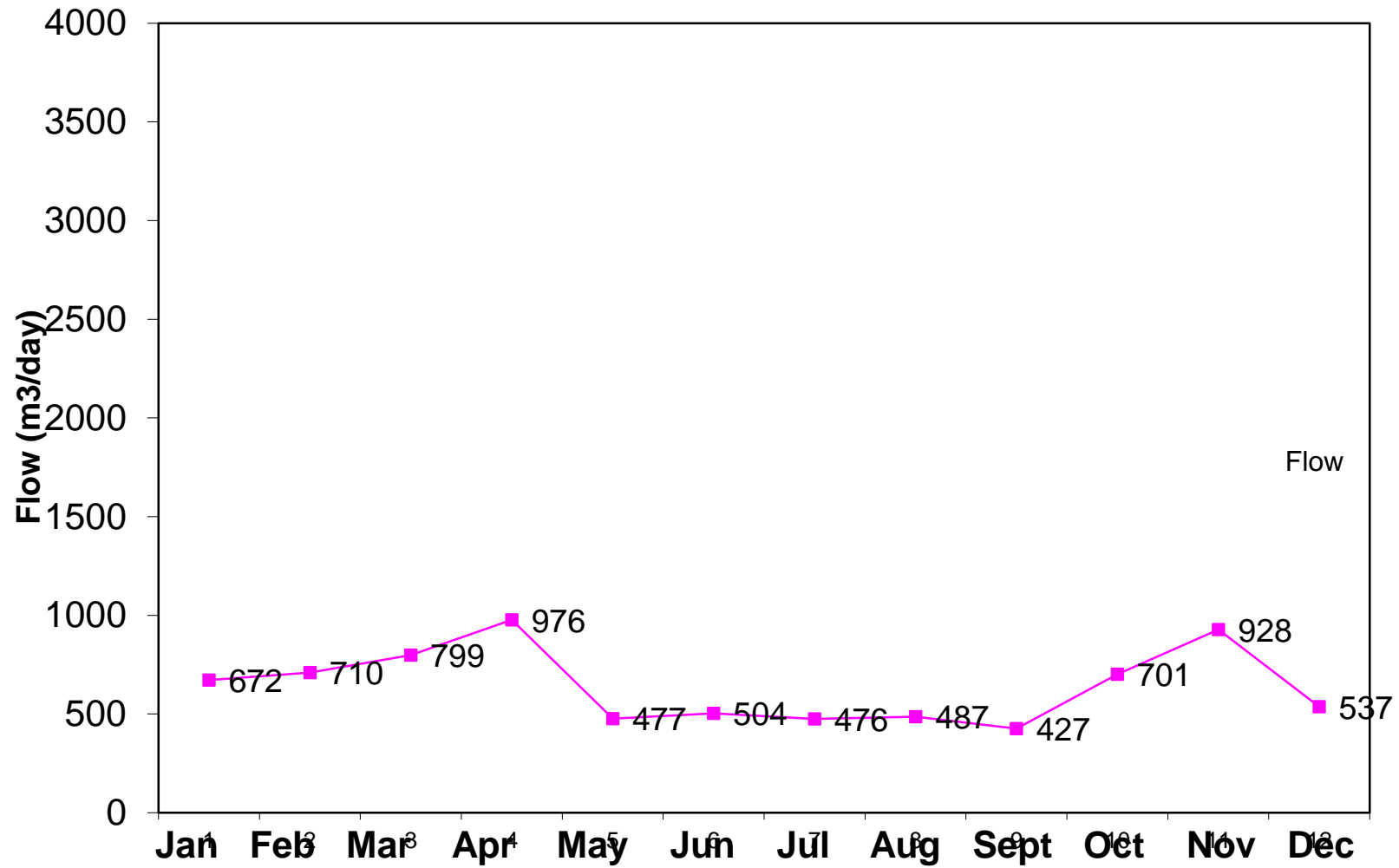
CH2MHILL Temp Results Brussels STP 2013

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.6	6.7	8.5	9.1	11.5	16.5	17.9	17.3	20.3	17.2	17.2	10.1
2	7.7	7.9	7.9	6.7	12.0	16.4	16.2	17.4	20.4	17.6	14.8	10.0
3	7.5	8.2	7.7	6.5	13.0	14.6	16.8	17.5	19.3	17.4	15.1	10.1
4	7.3	6.5	7.7	6.6	13.3	14.4	17.8	17.5	18.3	17.5	12.2	9.9
5	7.4	6.4	6.4	6.8	13.4	14.4	18.0	17.3	18.0	17.8	12.3	10.6
6	7.8	8.3	6.6	7.2	12.1	14.5	18.2	17.5	17.5	17.4	12.5	10.0
7	7.8	9.3	7.4	7.8	12.5	14.7	18.3	17.7	17.5	17.3	12.5	9.2
8	7.5	8.4	7.5	7.9	12.8	15.1	18.1	18.2	18.3	16.0	11.9	8.7
9	7.7	8.1	7.7	8.5	12.7	15.1	18.4	19.0	17.8	15.9	13.1	8.5
10	8.1	8.4	7.9	8.6	13.1	14.9	18.8	19.0	18.5	15.9	13.3	7.6
11	9.6	7.0	8.6	7.8	12.1	15.2	18.4	18.7	19.6	15.8	12.9	6.8
12	11.9	7.9	7.6	7.1	10.8	15.5	18.0	18.0	20.1	16.1	11.4	7.6
13	12.4	6.8	7.2	8.1	9.8	15.8	18.3	18.2	19.1	16.8	11.3	7.4
14	9.2	6.7	7.9	8.1	10.4	15.8	18.8	17.3	17.3	16.5	10.4	6.4
15	8.8	6.7	7.9	7.7	10.6	16.4	19.0	17.7	17.1	15.9	10.7	6.7
16	8.5	6.8	8.1	9.2	11.7	16.6	19.8	18.1	16.8	16.4	11.3	6.3
17	7.9	6.2	8.3	8.8	12.9	15.9	20.3	18.2	16.4	16.7	12.3	6.4
18	7.2	6.2	6.6	9.1	12.6	16.4	20.8	18.8	16.8	16.3	12.3	6.8
19	7.2	6.7	6.4	10.2	13.1	16.3	22.0	18.4	16.8	15.9	10.9	6.9
20	7.1	5.8	6.1	7.7	13.7	15.9	21.7	18.9	17.7	15.1	10.7	8.4
21	6.5	7.2	6.2	7.7	14.4	16.2	21.1	19.5	18.3	14.9	10.7	9.7
22	5.1	7.0	6.3	8.1	14.9	16.9	18.4	20.2	16.8	13.7	12.3	9.3
23	5.0	7.4	6.5	8.9	13.6	17.4	19.4	20.3	16.5	13.2	11.6	8.9
24	6.2	7.4	6.7	9.3	12.9	17.8	18.8	20.1	16.2	13.2	9.9	8.7
25	6.3	6.9	6.7	8.5	13.5	18.7	18.0	19.9	16.6	13.7	9.0	8.4
26	6.9	7.2	7.4	8.9	13.9	18.8	18.8	20.0	16.4	12.6	9.0	8.6
27	7.2	6.8	7.7	9.3	12.7	19.1	19.4	19.8	16.7	13.3	9.5	7.6
28	6.8	7.2	7.5	9.4	13.4	18.9	18.9	20.3	17.7	13.8	9.1	8.6
29	7.2		8.8	10.2	14.3	17.7	17.3	21.1	17.9	13.5	8.9	8.5
30	9.0		8.7	10.8	14.0	18.2	17.4	20.9	17.2	13.5	9.5	7.8
31	7.1		9.0		16.0		17.7	20.8		14.1		5.5
Min.	5.0	5.8	6.1	6.5	9.8	14.4	16.2	17.3	16.2	12.6	8.9	5.5
Max	12.4	9.3	9.0	10.8	16	19.1	22	21.1	20.4	17.8	17.2	10.6
Avg.	7.8	7.2	7.5	8.4	12.8	16.3	18.7	18.8	17.8	15.5	11.6	8.3

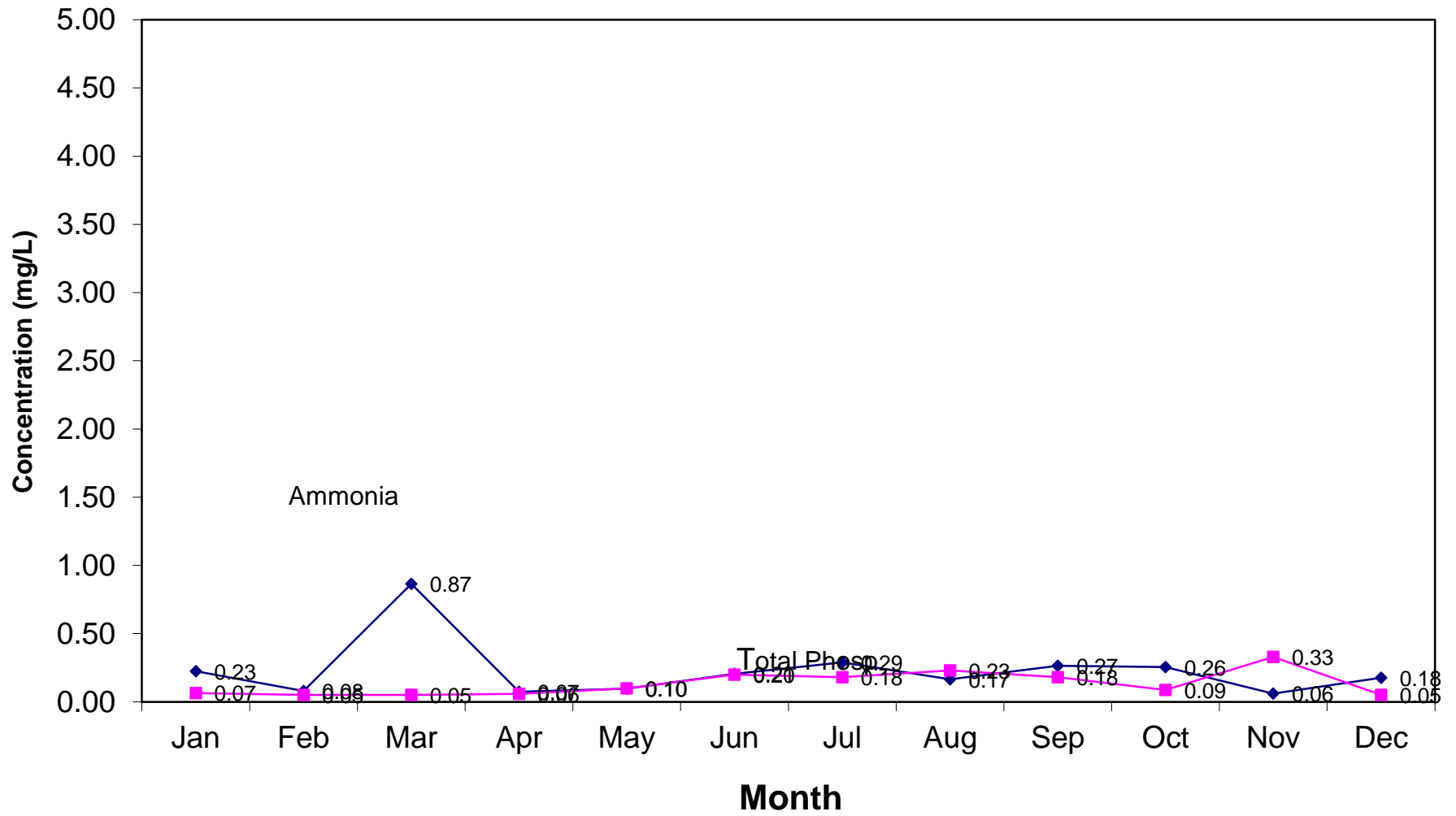
Brussels STP BOD and TSS vs Flow



Brussels STP. Average Monthly Flows



Brussels STP Monthly Total Phosphorus and Ammonia



2013 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		Cl2 Res	pH	D.O	BOD5 kg/d	S.S. kg/d	Total P kg/d	Ammonia		Avg Monthly Flow
							NH3 mg/L	Per 100ml	Per 100ml	Per 100ml									
Monthly																			
Jan	93	64	2.9	3.0	8.0	0.23	0.07	42	0.17	7.48	11.0	2.0	5.4	0.15	0.05	672			
Feb	130	140	4.4	2.0	1.0	0.08	0.05	150	0.15	7.44	11.3	1.4	0.7	0.06	0.04	710			
Mar	40	65	3.0	2.0	4.0	0.87	0.05	90	0.18	7.62	11.3	1.6	3.2	0.70	0.04	799			
Apr	110	120	3.7	2.0	9.0	0.07	0.06	84	0.18	7.40	11.0	1.9	8.8	0.07	0.06	976			
May	110	140	5.2	2.0	6.0	0.10	0.10	259	0.15	7.39	9.8	1.0	2.9	0.05	0.47	477			
Jun	81	100	4.2	2.0	3.0	0.21	0.20	12	0.16	7.53	9.0	1.0	1.5	0.10	0.09	504			
Jul	41	58	2.5	2.0	2.0	0.29	0.18	160	0.14	7.52	8.2	1.0	1.0	0.14	0.09	476			
Aug	86	110	3.7	2.0	2.0	0.17	0.23	62	0.16	7.61	6.5	1.0	1.0	0.04	0.11	487			
Sep	210	200	5.4	2.0	1.0	0.27	0.18	12	0.17	7.43	7.1	0.9	0.4	0.12	0.08	427			
Oct	89	160	3.6	3.0	4.0	0.26	0.09	80	0.19	7.38	6.9	2.1	2.8	0.18	0.06	701			
Nov	65	100	3.1	2.0	2.0	0.06	0.33	9	0.17	7.44	8.6	1.9	1.9	0.06	0.31	928			
Dec	67	72	3.0	2.0	5.3	0.18	0.05	502	0.15	7.51	7.4	1.1	2.8	0.10	0.03	537			
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	94	111	3.7	2.2	3.9	0.23	0.13	66	0.16	7.48	9.00	1.4	2.7	0.1	0.1	641			
Minimum	40	58	2.5	2.0	1.0	0.06	0.05	9	0.14	7.38	6.45	0.9	0.4	0.0	0.0	427			
Maximum	210	200	5.4	3.0	9.0	0.87	0.33	502	0.19	7.62	11.25	2.1	8.8	0.7	0.5	976			

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