



WASTEWATER TREATMENT PLANT

Bradley L. Moore
Superintendent
wwtp@bangormaine.gov

May 15, 2014

Mr. Alex Rosenberg, Environmental Compliance and Enforcement Officer
U.S. Environmental Protection Agency
Region 1 New England
5 Post Office Square
Suite 100 (OES04-4)
Boston, MA 02109-3912

VIA E-Mail

RE: U.S. vs. City of Bangor
Civil Action No. 88-0048-B

Dear Alex,

Pursuant to Paragraph 16(B) of the 1991 Consent Decree between the City of Bangor and EPA, the City is submitting the April 2014 biannual CSO Report.

The attached CSO Activity Report provides a summary of the data collected through the City's SCADA system and flow monitors at CSO discharge points during calendar year 2013. During 2013, the City reduced the total number of CSO events and the total discharge volume by 89% and 95%, respectively, over the 1990 baseline model.

Please feel free to contact me if you have any questions.

Sincerely,


Bradley Moore, Superintendent

CC: EPA: Tonia Bandrowicz, Esq.

DOJ: Chief, Environmental Enforcement Section (VIA U.S. Mail)

DEP: Mick Kuhns, P.E.

760 Main Street • Bangor, Maine 04401

207.992.4470 • Fax 207.947.3537

www.bangormaine.gov



CH2M HILL: Gordon Garner P.E., Bethany Leavitt, P.E., Bill McMillin, P.E.

City: Cathy Conlow, Sean Currier, Sean Gambrel, Wynne Guglielmo, Norm Heitmann, Esq., Paul Nicklas, Esq., Peralie Burbank, P.E., Amanda Soucier, P.E.

PretiFlaherty: Sharon Newman, Esq.

ENC: 2013 CSO Activity Report

2013 CSO Activity Report
City of Bangor, Maine

Bangor currently has nine licensed CSO discharge points in its Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100781, as shown in Table 1. The overflows at Kenduskeag East, Kenduskeag West, and Davis Brook are monitored using SCADA. The remaining overflows, with the exception of Cemetery, are monitored using flow meters through a contract with ADS Environmental Services. Cemetery is monitored by visual inspection.

Table 1: Licensed CSO Discharge Points Active during Reporting Year

Outfall ID	Monitoring Point	Subsection	Receiving Water
002	BV	Barkersville	Penobscot River
003	DB & DBT	Davis Brook	Penobscot River
006	KDW	Kenduskeag West	Kenduskeag Stream
007	KDE	Kenduskeag East	Kenduskeag Stream
009	HM	Hammond Street	Kenduskeag Stream
011	MB	Meadowbrook	Kenduskeag Stream
016	Visual	Cemetery	Kenduskeag Stream
020	Mt. Hope/Howard	Carr Brook	Penobscot River
023	CS	Central Street	Kenduskeag Stream

The results of the CSO monitoring have been tabulated in Table 2: CSO Activity by Date. Overflow events are indicated by the volume of the discharge. Note that some storm events occurred over multiple days. The total volume of discharge across all CSO discharge points for individual events is also summarized in Table 2.

Table 3: Annual Summary, January 1 – December 31, provides an annual summary of the data in Table 2 for each CSO discharge point.

Table 2: CSO Activity by Date

CSO Event #	Date	Precip. Bangor Int'l Airport (in)	FLOW DATA (MG)									TOTAL	
			002 BV	003 DB	006 KDW	007 KDE	009 HM	011 MB	016 CM	020 CB	023 CS		
1	1/31/2013	0.46		0.001								0.007	0.008
2	2/20/2013	0.93	1.647	1.798	0.600	0.300		0.134					4.479
3	3/13/2013	0.26	0.224	0.109							†		0.333
4	5/24/2013	1.08	0.140	0.479				0.051					0.670
5	6/8/2013	1.37	0.145	0.406				0.025					0.576
6	6/11/2013	0.93		0.025									0.025
7	6/25/2013	0.62		0.518								0.009	0.527
8	6/28/2013	1.44		0.956				0.034		0.001			0.991
9	7/8/2013	0.30		0.034									0.034
10	7/23/2013	0.87		0.646	0.150			0.063				0.002	0.861
11	7/24/2013	0.36		0.099				0.007					0.106
12	8/3/2013	0.37	0.009	0.187									0.196
13	8/9/2013	1.72	0.382	0.436				0.006					0.824
14	8/14/2013	0.35	0.024	0.191									0.215
15	9/1/2013	2.27	0.583	5.147	1.050	0.300	0.200	0.218		0.004	0.105		7.607
16	9/2-3/2013	2.09		0.970	0.450	0.150		†	0.001				1.571
17	9/8/2013	0.41		0.060									0.060
18	9/12-14/2013	1.76	2.083	1.857	0.150			0.046					4.136
19	11/18/2013	0.52		0.022									0.022
20	11/27-28/2013	2.43	4.010	3.041	0.750	0.750	0.101	0.067			†	†	8.719
21	12/2/2013	0.28										0.010	0.010
22	12/26-27/2013	0.11										0.170	0.170
TOTALS		20.93	9.25	16.98	3.15	1.50	0.30	0.65	0.00	0.01	0.30		32.14

† Possible discharge occurred - volume below specified meter accuracy.

Discharges at Central Street which occurred on 1/31 and 12/2 may have been partially influenced by tide.

Discharges at Central Street that occurred on 12/26 and 12/27 may have been partially influenced by an ice jam.

Table 3: Annual Summary, January 1 – December 31

Discharge Point	002 BV	003 DB	006 KDW	007 KDE	009 HM	011 MB	016 CM	020 CB	023 CS	TOTAL
Number of CSO Events	10	20	6	4	3	11	0	4	7	65
CSO Volume (MG)	9.25	16.98	3.15	1.50	0.30	0.65	0.00	0.01	0.30	32.14
Total Precipitation (in)	39.28									
CSO Precipitation (in)	20.93									

Table 4: CSO Activity by Precipitation Amount shows each event sorted by the amount of precipitation (in inches) that caused the event, from smallest to largest.

Table 4: CSO Activity by Precipitation Amount

CSO Event #	Date	Precip. Bangor Int'l Airport (in)	FLOW DATA (MG)									TOTAL	
			002 BV	003 DB	006 KDW	007 KDE	009 HM	011 MB	016 CM	020 CB	023 CS		
22	12/26-27/2013	0.11										0.170	0.170
3	3/13/2013	0.26	0.224	0.109							†		0.333
21	12/2/2013	0.28										0.010	0.010
9	7/8/2013	0.30		0.034									0.034
14	8/14/2013	0.35	0.024	0.191									0.215
11	7/24/2013	0.36		0.099					0.007				0.106
12	8/3/2013	0.37	0.009	0.187									0.196
17	9/8/2013	0.41		0.060									0.060
1	1/31/2013	0.46		0.001								0.007	0.008
19	11/18/2013	0.52		0.022									0.022
7	6/25/2013	0.62		0.518								0.009	0.527
10	7/23/2013	0.87		0.646	0.150				0.063			0.002	0.861
2	2/20/2013	0.93	1.647	1.798	0.600	0.300			0.134				4.479
6	6/11/2013	0.93		0.025									0.025
4	5/24/2013	1.08	0.140	0.479					0.051				0.670
5	6/8/2013	1.37	0.145	0.406					0.025				0.576
8	6/28/2013	1.44		0.956					0.034		0.001		0.991
13	8/9/2013	1.72	0.382	0.436					0.006				0.824
18	9/12-14/2013	1.76	2.083	1.857	0.150				0.046				4.136
16	9/2-3/2013	2.09		0.970	0.450	0.150		†	0.001				1.571
15	9/1/2013	2.27	0.583	5.147	1.050	0.300	0.200		0.218		0.004	0.105	7.607
20	11/27-28/2013	2.43	4.010	3.041	0.750	0.750	0.101		0.067		†	†	8.719
TOTALS		20.93	9.25	16.98	3.15	1.50	0.30	0.65	0.00	0.01	0.30		32.14

† Possible discharge occurred - volume below specified meter accuracy.

Discharges at Central Street which occurred on 1/31 and 12/2 may have been partially influenced by tide.

Discharges at Central Street that occurred on 12/26 and 12/27 may have been partially influenced by an ice jam.

Bangor's NPDES Wastewater Discharge Permit has seasonal chlorination disinfection limits each year from May 15 to September 30. Bangor routinely examines its volumes of CSO discharges during this time period. During 2013, approximately 57% of the total CSO discharge volume occurred during this time period, as shown below in Table 5: CSO Activity by Date during Chlorination Season. Table 6 provides a summary of this data for each CSO discharge point.

Table 5: CSO Activity by Date during Chlorination Season

CSO Event #	Date	Precip. Bangor Int'l Airport (in)	FLOW DATA (MG)									TOTAL
			002 BV	003 DB	006 KDW	007 KDE	009 HM	011 MB	016 CM	020 CB	023 CS	
4	5/24/2013	1.08	0.140	0.479				0.051				0.670
5	6/8/2013	1.37	0.145	0.406				0.025				0.576
6	6/11/2013	0.93		0.025								0.025
7	6/25/2013	0.62		0.518							0.009	0.527
8	6/28/2013	1.44		0.956				0.034		0.001		0.991
9	7/8/2013	0.30		0.034								0.034
10	7/23/2013	0.87		0.646	0.150			0.063			0.002	0.861
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14	8/14/2013	0.35	0.024	0.191								0.215
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16	9/2-3/2013	2.09		0.970	0.450	0.150	†	0.001				1.571
17	9/8/2013	0.41		0.060								0.060
18	9/12-14/2013	1.76	2.083	1.857	0.150			0.046				4.136
TOTALS		15.94	3.37	12.01	1.80	0.45	0.20	0.45	0.00	0.01	0.12	18.40

Table 6: Chlorination Season Summary, May 15 – September 30

Discharge Point	002 BV	003 DB	006 KDW	007 KDE	009 HM	011 MB	016 CM	020 CB	023 CS	TOTAL
Number of CSO Events	7	15	4	2	2	9	0	2	3	44
CSO Volume (MG)	3.37	12.01	1.80	0.45	0.20	0.45	0.00	0.01	0.12	18.40
Total Precipitation (in)	39.28									
CSO Precipitation (in)	15.94									

Bangor’s Phase 1 CSO control plan had a goal of 80% control of both total number of CSO events and total discharge volume, which was determined to be the “knee of the curve” of the cost-benefit analysis. The Phase 1 CSO control plan used a SWMM model to establish the model baseline values of 583 total annual CSO events and 635 million gallons discharged. The City has maintained a summary chart of annual CSO activity since 1990 as a measure of progress. Prior to 2011, the number of CSO events were recorded by block testing overflows and CSO discharge volumes were established based on the CSO control plan model calculations. In 2011, Bangor began monitoring its CSO events using electronic flow meters. The events and discharge volumes are based on actual data collected by each meter. The City discontinued block testing on August 7, 2013 at its CSO discharge points since all are monitored using other means. Table 7 shows Bangor’s progress in achieving its goal for each year since 1990. The 2011 data does not include overflows from the Cemetery (016) and Carr Brook (020) CSO discharge points.

Table 7: Annual CSO Control Progress

Year	Total Annual Rainfall (in)	Number of Rain Events Causing CSOs	Total Number of CSO Events	% Reduced from Baseline	Total Discharge Volume (MG)	% Reduced from Baseline
1990	50.19	53	568	3%	525	17%
1991	36.99	52	543	7%	533	16%
1992	26.06	37	403	31%	386	39%
1993	34.72	46	376	36%	384	40%
1994	34.13	49	364	38%	403	37%
1995	32.26	49	374	36%	416	34%
1996	46.40	41	341	42%	344	46%
1997	34.46	38	322	45%	318	50%
1998	33.54	44	346	41%	329	48%
1999	47.12	33	280	52%	286	55%
2000	39.05	37	217	63%	231	64%
2001	24.64	20	91	84%	89	86%
2002	41.62	43	164	72%	161	75%
2003	43.26	49	181	69%	204	68%
2004	36.07	42	170	71%	193	70%
2005	59.78	49	292	50%	303	52%
2006	49.10	58	276	53%	282	56%
2007	44.21	25	117	80%	150	76%
2008	49.17	65	268	54%	378	40%
2009	45.04	64	244	58%	347	45%
2010	44.53	74	265	55%	389	39%
2011	44.04	34	84	86%	146	77%
2012	42.25	30	92	84%	70	89%
2013	39.28	22	65	89%	32	95%

Number of Annual Events - LTCP Model Baseline 583

Annual Discharge Volume (MG) - LTCP Model Baseline 635

In 2013, Bangor achieved an 89% reduction over the baseline model for the total number of CSO events and a 95% reduction for the total volume of CSO events.