



Haverhill

Paul J. Jessel, Collection System Supervisor
Water/Wastewater Division
Phone: 978-374-2382 Fax: 978-521-4083
pjessel@haverhillwater.com

April 29 2005

Environmental Protection Agency
Water Technical Unit (SEW)
PO Box 8127
Boston, Massachusetts 02114

Massachusetts Department of Environmental Protection
Northeast Regional Office
One Winter Street, 5th Floor
Boston, MA 02108-4747

Subject: City of Haverhill NPDES Permit # MA0101621
Combine Sewer Overflow Annual Report

Dear DEP & EPA:

In accordance with the City of Haverhill's NPDES Permit # MA0101621 we are providing this status report by, as required by item 3 page 10 of 16. Please note the items in *italic* are taken directly from the NPDES permit followed by a response.

- i. Activation frequency and discharge volume for each CSO during the pervious calendar year. The report shall include this information for each of the CSO discharge outfalls listed on attachment E.*

EPA and DEP have previously approved the City of Haverhill's SWMM computer model for simulating CSO activations. For details of the model, the reader should consult the report "SWMM Model Calibration and Evaluation of Existing Conditions" report prepared by CDM dated July 1998. **Appendix A CSO SUMMARY CALANDER YEAR 2004** was prepared based on output from this SWMM model and includes estimates of CSO activation (including number of events, duration, and volume discharge) during calendar year 2004. Note there were no predicted discharges from many of the CSOs listed in **Appendix A**.

- ii. Precipitation during the previous year for each day, including total rainfall (express in inches), peak intensity (highest 15 minute sample multiplied by four to convert to inches per hour), and average intensity (the total rainfall for*

the storm event divided by the duration of the storm, expressed in inches per hour.)

Rain data is collected at the City of Haverhill Wastewater Treatment Plant using a RainWise, Inc., rain gage. The rain is measured in 15-minute intervals to within 0.01 inches. In order to keep track of each storm, peak and average intensities are recorded and calculated based upon the daily rainfall, rather than from the entire storm duration. This is because most storm durations frequently start and stop more than once in a day. See **Appendix B** calendar year 2004 rainfall data.

iii. A certification, which states that the previous calendar's year's monthly inspections were conducted, results recorded, and records maintained.

I certify that the City of Haverhill inspects and maintains pertinent records from all CSOs at least monthly. As presented to EPA in the quarterly reports, the City of Haverhill actively maintains CSO block testing programs. This program consists of placing a small wooden block on each CSO weir attached to a cable. After every significant rainfall event, Collection System Division personnel visually check each block, record results, and notify downstream communities as appropriate. Please note, all block-testing results are submitted to EPA quarterly.

iv. A summary of modifications to the approved NMC programs which have been evaluated, and a description of those, which will be implemented during the upcoming year.

The reader is directed to first annual report submitted April 30, 2004.

Construction began in May 2004, to treat 60 MGD, with an estimated project cost of \$18-million. Currently the City of Haverhill treats 92.1 percent of their combined Stormwater and wastewater flow prior to discharge to either the Merrimack or Little Rivers. Once the above projects are constructed the combined flow treated will increase to approximately 97.3 percent.

The City of Haverhill is committed to moving forward with programs that will clearly have a positive impact on water quality and use of the Merrimack and Little Rivers. This has already been demonstrated by our commitment to fund the design and construction of the WWTP expansion program and Bradford-side CSO modifications.

A clear plan for environmental restoration of the river is what is needed through targeted investments. This plan must be based on a full understanding of all the issues facing the river. This way the right investments can be made and the public at large can see the real benefit of these investments.

In the first annual report submitted in accordance with this permit, the permittee shall submit a public notification plan to describe the measures actively being taken to meet NMC #9 (see NMC #9 in part I.C.1a.i.8), and an evaluation of future measures to enhance the public notification program, including the following;

- i. *Outfall sign visible from both water and land.*
- ii. *Sign/Notices are where people may be using CSO-impacted waters for recreation such as swimming, boating, fishing, and places where the public may gain access to the water (e.g. boat put-in areas). The notice would include information on health risk posed by CSO and links for additional information on CSOs and water quality.*

Public notification programs are intended to ensure that the public and community receives adequate information CSO including, the locations of the outfalls, the magnitude of the discharges, and the affect on the receiving waters. The principal benefit of a notification program is to reduce the potential public health risk in affected areas and to increase public awareness of CSOs.

Signs have been installed at each CSO location in the City and will be maintained over the coming year. The City's Public Notification Program, (required by the NMC), will consist of public education about CSO discharges and their impacts. "Real-Time" notification of the receiving water impacts or use restrictions during the activation of the CSO discharge is not feasible (due to its transient and intermittent occurrences). Accordingly, the City will rely on a general education programs and the City's official web site <http://www.ci.haverhill.ma.us/> to keep the public aware of the possible health risks. This awareness program will be implemented over the coming year.

- iii. *Review of the sewer system model to determine the threshold rain events, which normally will cause overflows.*

CDM has provided the City an Excel spreadsheet to simulate CSO activations and volumes. The City is working with CDM to refine the formula in the spreadsheet to ensure that accurate results are obtained. This spreadsheet will be refined and pertinent results can be provided in the quarterly reports submitted to EPA.

- iv. *Quarterly postings on the permittee's website and links to other relevant websites which would give the locations of the CSOs, and associated health risks and estimate of CSO activations and volumes. The permittee shall establish a website within six (6) months of the effective date of the permit.*

The City of Haverhill's official web site is <http://www.ci.haverhill.ma.us/>. Under a separate contract with CDM the City is undertaking a Citywide Geographical Informational System (GIS). Once completed a more detail description and location map for all CSO's will be placed onto the City's web site. The SWMM model statics for 2004 are presented in **Appendix A**, have already been placed on the City web page.

- v. *Annual press release and notification to interested individuals and groups on the progress of the CSO abatement work, also noting contacts for additional information on CSOs and water quality.*

The City has contacted downstream communities and sent the 2004 SWMM model report. When other interested individuals are identified, this notification will be sent to them also.

vi. Notice to local health agents and other downstream public officials, including drinking water treatment plants (where appropriate), shellfish wardens, harbor masters, and the Massachusetts Division of Marine Fisheries (via FAX at 978-465-5947) within 24 hours of activation of CSOs. The permittee shall also notify the Massachusetts Divisions of Marine Fisheries by the same method if the treatment plant discharges effluent without disinfection. When City of Haverhill staff are unavailable to confirm an actual discharge from a CSO during a significant precipitation event, the permittee shall report the probable occurrence of a CSO discharge in the same manner. Subsequently, the occurrence of the CSO discharge event shall be confirmed or dispelled as staff becomes available. The planned notice distribution contact list shall be provided to EPA and DEP. The public notification plan shall include a schedule for implementation of enhanced public notice measures.

Appendix C represents the list of downstream communities that the City notifies in the event of CSO activation.

If you require additional information, please call me at 978-374-2382.

Sincerely,



Paul J. Jessel
Collection System Supervisor

cc: Robert Ward, Acting Director Water/Wastewater
Joseph Jordan, WWTP Facility Manager
Don Freeman, CDM
Division of Fisheries
Shellfish Program
84 82nd Street
Newburyport, MA 0195

APPENDIX A

CSO SUMMARY CALANDER YEAR 2004

STRUCTURE NAME	Full name	NPDES	Events	Hours	Vol. MG
NMHI01W	High St Regulator		1	0	0
NMLA01	High St Combine Flows		3	817	4
NMES14W	Lafayette Square				
NMBR02W	Broadway Regulator				
NLM12WR	Mill Street				
NLRS28WR	Bates Bridge	001			
NLRS04WR	Boardman Street	010			
NLSIGTOF	Lower Siphon	013	20	1415	106
NLWS09WR	Fire Station	016	1	0	0
NLWS13OF	Main Street - North	019			
NMDH04W	Winter Street & Hale	021	8	32	10
NMESOF-D	Middle Siphon	021	27	170	48
NMMSE3	Little River East	021	16	68	21
NMNS01B	Little River West	021	17	68	5
NMOR01WR	Little River North	021			
NUWS09OF	Railroad Bridge	022			
NUWS02WR	River Street	023	1	1	0
NUSIGTOF	Upper Siphon	024	19	130	50
NUMN04WR	Beach Street	025	1	1	0
SUSB02WR	Front Street	031	12	41	10
SMSB03WR	Bradford Avenue	032	20	164	22
SMSB01WR	South Prospect Street	033	8	26	1
SLSB12WR	Middlesex Street	034	11	51	1
SLSB10WR	South Main Street	035	15	56	7
SLSB08WR	Ferry Street	036	23	62	6
		Totals:	203	3102	292

APPENDIX B

Calendar Year 2004 Rainfall Data

Storm Date	Peak Hour	Storm Depth	Duration	Avg.
	Intensity	Rain		Intensity
	(in/hr.)	Total (in.)	(hrs.)	(in/hr.)
January 2, 2004	0.04	0.04	1.25	0.01
January 3, 2004	0.04	0.15	3.75	0.01
January 4, 2004	0.04	0.04	1.00	0.01
January 5, 2004	0.08	0.45	10.25	0.01
January 6, 2004	0.04	0.02	0.50	0.01
January 12, 2004	0.08	0.11	2.25	0.01
January 18, 2004	0.04	0.08	2.00	0.01
January 28, 2004	0.04	0.05	1.25	0.01
February 3, 2004	0.24	0.42	2.50	0.04
February 4, 2004	0.24	0.16	1.25	0.03
February 6, 2004	0.44	0.62	4.25	0.04
February 7, 2004	0.08	0.15	3.00	0.01
February 21, 2004	0.04	0.03	0.75	0.01
March 5, 2004	0.04	0.02	0.50	0.01
March 6, 2004	0.16	0.14	2.00	0.02
March 8, 2004	0.04	0.21	5.25	0.01
March 12, 2004	0.04	0.04	1.00	0.01
March 17, 2004	0.24	0.51	7.25	0.02
March 18, 2004	0.04	0.07	1.75	0.01
March 20, 2004	0.08	0.12	2.25	0.01
March 21, 2004	0.20	0.22	3.75	0.01
March 25, 2004	0.12	0.07	1.25	0.01
March 26, 2004	0.08	0.03	0.50	0.02
March 27, 2004	0.16	0.50	5.50	0.02
March 31, 2004	0.28	1.14	9.50	0.03
April 1, 2004	4.08	6.02	20.00	0.08
April 2, 2004	0.12	1.00	12.25	0.02
April 3, 2004	0.08	0.02	0.25	0.02
April 4, 2004	0.04	0.16	4.00	0.01
April 5, 2004	0.12	0.24	2.50	0.02

APPENDIX B

Calendar Year 2004 Rainfall Data

Storm Date	Peak Hour	Storm Depth	Duration	Avg.
	Intensity	Rain		Intensity
	(in/hr.)	Total (in.)	(hrs.)	(in/hr.)
April 13, 2004	0.08	1.73	24.25	0.02
April 14, 2004	0.04	0.14	3.50	0.01
April 15, 2004	0.04	0.18	4.50	0.01
April 22, 2004	0.04	0.05	1.25	0.01
April 23, 2004	0.08	0.86	11.00	0.02
April 26, 2004	0.04	0.69	17.25	0.01
April 27, 2004	0.20	0.34	6.25	0.01
May 2, 2004	0.08	0.04	0.75	0.01
May 3, 2004	0.16	0.36	6.50	0.01
May 4, 2004	0.08	0.52	7.00	0.02
May 15, 2004	0.08	0.05	1.00	0.01
May 16, 2004	0.12	0.62	5.25	0.03
May 18, 2004	0.20	0.62	6.50	0.02
May 19, 2004	0.04	0.02	0.50	0.01
May 21, 2004	0.04	0.07	1.75	0.01
May 22, 2004	0.12	0.28	3.25	0.02
May 23, 2004	0.16	0.28	3.25	0.02
May 24, 2004	0.44	1.33	3.25	0.10
May 25, 2004	0.20	0.34	2.75	0.03
May 26, 2004	0.04	0.12	3.00	0.01
May 27, 2004	0.08	0.23	3.25	0.02
May 28, 2004	0.04	0.32	8.00	0.01
June 1, 2004	0.04	0.25	6.25	0.01
June 2, 2004	0.04	0.05	1.25	0.00
June 3, 2004	0.04	0.18	4.50	0.01
June 7, 2004	0.04	0.04	1.00	0.01
June 9, 2004	0.32	0.48	2.50	0.05
June 14, 2004	1.24	1.69	5.50	0.08
June 15, 2004	0.12	0.10	1.50	0.02
June 16, 2004	0.20	0.23	2.25	0.03

APPENDIX B

Calendar Year 2004 Rainfall Data

Storm Date	Peak Hour	Storm Depth	Duration	Avg.
	Intensity	Rain		Intensity
	(in/hr.)	Total (in.)	(hrs.)	(in/hr.)
June 17, 2004	0.28	0.26	3.00	0.02
June 18, 2004	0.08	0.06	1.25	0.01
June 22, 2004	0.04	0.03	0.75	0.01
June 25, 2004	0.04	0.02	0.50	0.01
June 26, 2004	0.96	0.37	2.50	0.04
June 29, 2004	0.28	0.21	1.75	0.03
July 1, 2004	0.60	0.21	0.75	0.07
July 2, 2004	0.16	0.12	1.50	0.02
July 24, 2004	0.36	0.83	7.25	0.03
July 28, 2004	0.44	0.41	2.50	0.04
August 1, 2004	0.04	0.01	0.25	0.01
August 3, 2004	0.40	0.11	0.50	0.06
August 4, 2004	0.36	0.21	1.25	0.04
August 5, 2004	0.16	0.28	3.75	0.02
August 11, 2004	0.52	0.15	0.50	0.08
August 12, 2004	0.88	0.41	0.75	0.14
August 13, 2004	1.72	2.10	4.25	0.12
August 15, 2004	0.28	0.66	7.75	0.02
August 16, 2004	0.16	0.24	3.75	0.02
August 17, 2004	0.04	0.02	0.50	0.01
August 19, 2004	0.20	0.06	0.50	0.03
August 20, 2004	0.04	0.01	0.25	0.01
August 21, 2004	2.20	2.14	6.75	0.08
August 30, 2004	0.48	0.17	0.50	0.09
August 31, 2004	0.56	0.36	3.00	0.03
September 8, 2004	0.08	0.08	1.75	0.01
September 9, 2004	0.48	1.36	7.25	0.05
September 10, 2004	0.04	0.02	0.50	0.00
September 17, 2004	0.88	0.28	1.25	0.06
September 18, 2004	0.72	2.43	10.50	0.06

APPENDIX B

Calendar Year 2004 Rainfall Data

Storm Date	Peak Hour	Storm Depth	Duration	Avg.
	Intensity	Rain		Intensity
	(in/hr.)	Total (in.)	(hrs.)	(in/hr.)
September 28, 2004	0.20	0.55	7.75	0.02
September 29, 2004	0.16	0.79	9.75	0.02
September 30, 2004	0.04	0.05	1.25	0.01
October 2, 2004	0.36	0.25	1.50	0.04
October 12, 2004	0.04	0.17	4.25	0.01
October 14, 2004	0.12	0.04	0.50	0.02
October 15, 2004	0.32	0.56	7.50	0.02
October 16, 2004	0.76	0.84	5.00	0.04
October 19, 2004	0.12	0.27	5.25	0.01
October 21, 2004	0.04	0.01	0.25	0.01
October 22, 2004	0.04	0.07	1.75	0.01
October 30, 2004	0.44	0.16	1.25	0.03
October 31, 2004	0.04	0.01	0.25	0.01
November 2, 2004	0.04	0.04	1.00	0.01
November 3, 2004	0.20	0.24	3.75	0.02
November 4, 2004	0.24	0.52	4.50	0.03
November 5, 2004	0.20	0.23	2.25	0.03
November 10, 2004	0.04	0.01	0.25	0.01
November 12, 2004	0.04	0.12	3.00	0.01
November 13, 2004	0.08	0.23	4.50	0.01
November 20, 2004	0.04	0.03	0.75	0.01
November 21, 2004	0.04	0.02	0.50	0.01
November 24, 2004	0.16	0.31	5.00	0.02
November 25, 2004	0.24	0.45	4.25	0.03
November 28, 2004	0.84	1.04	5.50	0.05
December 1, 2004	0.32	0.76	7.25	0.03
December 7, 2004	0.20	0.96	11.00	0.02
December 8, 2004	0.04	0.03	0.75	0.01
December 10, 2004	0.24	0.49	7.75	0.02
December 11, 2004	0.24	0.32	3.50	0.02

APPENDIX B

Calendar Year 2004 Rainfall Data

Storm Date	Peak Hour	Storm Depth	Duration	Avg.
	Intensity	Rain		Intensity
	(in/hr.)	Total (in.)	(hrs.)	(in/hr.)
December 19, 2004	0.04	0.02	0.50	0.01
December 20, 2004	0.08	0.08	1.75	0.01
December 22, 2004	0.04	0.01	0.25	0.01
December 23, 2004	0.92	0.97	3.00	0.08
December 24, 2004	0.04	0.03	0.75	0.01
December 28, 2004	0.12	0.14	2.25	0.02
December 29, 2004	0.08	0.12	2.50	0.01
		49.60		

APPENDIX C

Downstream Communities Contact Information

First Name	Last Name	DEPT	Address	City	State	Postal Code	Tele #	E-mail
Robert	Desmaris	Engineering	62 Friend Street	Amesbury	MA	01913	1-978-388-8127	rob@ci.amesbury.ma.us
Jeff	Mason	Water System Manager		Amesbury	MA	01913	978-388-0853	masonj@ci.amesbury.ma.us
Joe	Trevald	Board of Health	183 Main Street	Groveland	MA	01834	(978)469-5004	jtevald@grovelandma.com
Frank	Giordano	Water/Sewer	183 Main Street	Groveland	MA	01834	(978) 556-7200-Ext 219	fgiordano@grovelandma.com
Donna	Leone	Board of Health	4 Summer Street	Haverhill	MA	01830	(978) 374-2325	bdufresne@cityofhaverhill.com
Michael	Vets	Harbor Master	72 Coffin Avenue	Haverhill	MA	01830	(978) 374-2100	vze4gyrd@verizon.net
Linda	Soucy	Light & Water	10 W Main St	Merrimac	MA	01860	(978) 346-8311	lightdept@merrimac.greennet.net
Alba L.	Gouldthorpe	Board of Health	25 High Road	Newbury	MA	01951	(978) 499-3898	boardofhealth@townofnewbury.org
Ralph L	Steele	Harbor Master	60 Pleasant Street	Newburyport	MA	01950	(978) 462-3746	rsteele@cityofnewburyport.com
Dr. Susan	Beluk	Board of Health	60 Pleasant Street	Newburyport	MA	01950	(978) 465-4410	mtolman@cityofnewburyport.com
David	Roach	Shellfish Division	84 82 nd Street	Newburyport	MA	01950	(978) 465-3553	dave.roach@state.ma.us
Jeff	Ingalls	Sewer Treatment Plant	P.O. 5221	Salisbury	MA	01952	(978) 465-4058	wwtp@seacosat.com
Horace	Baxter	Board of Health	P.O. Box 5072	Salisbury	MA	01952	(978) 462-3430	bohealth@seacoast.com
Paul	Sevigny	Board of Health	381 Main Street	West Newbury	MA	01985	(978) 363-1109	psevigny@town.west-newbury.ma.us