



# Haverhill

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

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Water Technical Unit (OES04-3)  
U.S. EPA - New England, Region 1  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912  
Attn: Joy Hilton

Massachusetts Department of Environmental Protection  
Northeast Regional Office  
Bureau of Resource Protection  
205B Lowell Street  
Wilmington, MA 01887  
Attn: Nihar Mohanty

Subject: City of Haverhill, MA NPDES Permit # **MA 0101621**  
Combined Sewer Overflow Annual Report 2012

Dear Ms. Hilton and Mr. Mohanty:

In accordance with Part I.D.3. the City of Haverhill's NPDES Permit, we are providing this status report for the 2012 calendar year. Please note that throughout this report the items in *italics* are the requirements taken directly from the NPDES permit followed by the response.

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

The SWMM model approved in 1998 and updated by Administrative Order 08-012 and approve scope of work, submitted August 2, 2011, Phase II Long-Term CSO Control Plan (LTCP), was used to report the CSO discharge volumes

**APPENDIX A: CSO SUMMARY CALANDER YEAR 2012** was prepared based on outputs from SWMM5 models and includes estimates of CSO activations (including number of events, duration and volume discharge) during the 2012 calendar year. Note there were no predicted discharges from many of the CSOs listed in Appendix A.

NetStorm, a program created by CDM Smith, takes the SWMM output files and queries out individual CSO events, volumes, start date and time with durations. From NetStorm data, the end date and time of each CSO event is then calculated. This software although available to the City, was not known until recently. Therefore, the City has developed CSO statistics for the last six (6) years utilizing the SWMM model output files (see **Appendix B Six Year CSO Summary**).

The differences in CSO volume between the current SWMM output summary versus values previously reported to EPA are due to differences in the accounting methods. At some CSO structures, particularly at Middle Siphon (021A) and Little River West (021D), the system configuration is complex with multiple weirs and flow paths and potential tidal impacts from the river. In order to provide the requested CSO summary by event for these locations, alternate accounting methods were applied to the model results. These accounting methods will be improved for future CSO reporting.

The City after reviewing, the submitted LTCP, Railroad Bridge NPDES # 022 was brick up on March 31, 2012, and is reflected in Appendix A and photograph below. This is a new policy instituted since August 2011, and shall continue were appropriate.



- b. 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. NetStorm develop by CDM Smith is a computer program that takes the rainfall information from the rain gage and develops the rainfall statistics per storm event. The rain fall statistics are in a different format than what the City previously reported, which reflects how the CSO reacts to the storm. See **APPENDIX C: CALENDAR YEAR 2012 RAINFALL DATA** utilizing NetStorm. (Note some storm duration last longer than one day 4-22-12 33.75 hours). The City received 33.86-inches of rainfall for calendar year 2012. The average rainfall amount is 42.91 inches.

- c. *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. The City of Haverhill actively maintains the CSO block testing program. 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 Block check results can be observed in **APPENDIX D: CALENDAR YEAR 2012 CSO BLOCK CHECK RESULTS**.

- d. *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 City of Haverhill is currently minimizing CSO discharges to the maximum extent possible and in compliance with the Draft Nine Minimum Controls submitted to EPA in September 1996. The City has completed the CSO Phase I upgrades, which reduce CSO volume by 66 percent. This CSO mitigation has increase the wet weather capture to 97 percent. The City's nine minimum control measures submitted in 1996 do not need modification. Therefore, no implementation plan is planned or required.

*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.*

Signs have been installed at each CSO location in the City and will be maintained over the coming year. See **Appendix E: Work Order 37835** verifying that all CSO signage is posted.

- 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.*

Within 24-hours of a CSO occurrence an email notification is sent to Downstream Communities see **APPENDIX F: DOWNSTREAM COMMUNITIES**, which has the email notification list.

The City's Public Notification Program, (required by the NMC), consists 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 relies on a general education program and the City's official web site to keep the public aware of the possible health risks. The address below is the City's CSO web site.

[http://www.ci.haverhill.ma.us/departments/water/waste\\_water/collection/index.htm](http://www.ci.haverhill.ma.us/departments/water/waste_water/collection/index.htm)

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

The City has compiled all block test results and plotted these results with available Supervisory Control and Data Acquisition, (SCADA) influent flows. Further analysis shall be undertaken during this calendar year to arrive at a minimum flow and minimum rainfall amount, which causes CSO activation. Currently, the City's Collection Division checks the CSO blocks whenever the flow at the treatment plant exceeds 25 MGD.

The City has compiled all available rainfall data and treatment plant flows from 2008 through 2010 and found that when the City receives 0.10 inches of rain the City could expect a CSO occurrence.

The following are the data points used to create each CSO graph:

- CSO activation;
- Rainfall inches /day;
- Peak intensity in./hr.;
- Influent flow.

See **Appendix G: CSO Graphs 2012**.

*i. Quarterly postings on the permittee's website and links to other relevant web-sites which would give the locations of the CSOs, and associated health risks and estimate of CSO activations and volumes. The permittee shall update the CSO website within two (2) months of the effective date of the permit.*

The City of Haverhill's CSO official web site is

[http://www.ci.haverhill.ma.us/departments/water/waste\\_water/collection/index.htm](http://www.ci.haverhill.ma.us/departments/water/waste_water/collection/index.htm)

The SWMM model statistics from 2003 to 2009 are shown on the City web page on the following link:

[http://www.ci.haverhill.ma.us/departments/water/waste\\_water/collection/cso1.html](http://www.ci.haverhill.ma.us/departments/water/waste_water/collection/cso1.html)

- i. *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 for each CSO activation. When other interested individuals are identified, this notification will be sent to them.

- ii. *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 617-727-3337) or via telephone (978-282-0308 extension 160) 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 is 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 F: DOWNSTREAM COMMUNITIES** represents the list of the current email addresses notified for Calendar 2012.

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

Sincerely,



Paul J. Jessel

Collection System Supervisor

cc: Mike Stankovich, DPW Director  
Robert Ward, Deputy DPW Water/Wastewater  
Fred Haffty WWTP Facility Manage