UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

IN THE MATTER OF	)	DOCKET NO. 12-009
	)	
Lynn Water and Sewer Commission	)	FINDINGS OF VIOLATION
Lynn, Massachusetts	)	
NPDES Permit No. MA0100552	)	AND
	)	
Proceedings under Sections 308(a)	)	ORDER FOR COMPLIANCE
and 309(a)(3) of the Clean Water Act,	)	ON CONSENT
as amended, 33 U.S.C. § 1319(a)(3)	)	

I. STATUTORY AUTHORITY

The following FINDINGS are made and ORDER ON CONSENT issued pursuant to Sections 308(a) and 309(a)(3) of the Clean Water Act, as amended (the "Act"), 33 U.S.C. §§ 1318 and 1319(a)(3). Section 308(a) of the Act authorizes EPA to require the submission of any information required to carry out the objectives of the Act. Section 309(a)(3) of the Act grants to the Administrator of the U.S. Environmental Protection Agency ("EPA") the authority to issue orders requiring persons to comply with Sections 301, 302, 306, 307, 308, 318 and 405 of the Act and any permit condition or limitation implementing any of such sections in a National Pollutant Discharge Elimination System ("NPDES") permit issued under Section 402 of the Act, 33 U.S.C. § 1342. These authorities have been delegated to EPA Region I's Regional Administrator and, in turn, to the Director of EPA, Region I's Office of Environmental Stewardship (the "Director").

The Order herein is based on findings of violation of Section 301 of the Act, 33 U.S.C. § 1311, and the conditions of NPDES Permit No. MA0100552 and the NPDES General Permit for Small Municipal Separate Storm Sewer Systems. Pursuant to Section 309(a)(5)(A) of the Act, 33 U.S.C. § 1319(a)(5)(A), the Order provides a schedule for compliance which the Director has

determined to be reasonable.

II. FINDINGS

The Director makes the following findings of fact:

1. The Lynn Water and Sewer Commission ("Commission") is a public body established under the laws of the Commonwealth of Massachusetts having jurisdiction over disposal of sewage, and is therefore a municipality, as defined in Section 502(4) of the Act, 33 U.S.C. § 1362(4).
2. The Commission is a person under Section 502(5) of the Act, 33 U.S.C. § 1362(5). The Commission is the owner and operator of a Publicly-Owned Treatment Works ("POTW") which includes a wastewater collection system ("Collection System"), a wastewater treatment facility ("WWTF") and four combined sewer overflow ("CSO") outfalls from which it discharges pollutants, as defined in Sections 502(6) and (12) of the Act, 33 U.S.C. §§ 1362(6) and (12), from point sources, as defined in Section 502(14) of the Act, 33 U.S.C. § 1362(14), to Strawberry Brook, the Saugus River, Lynn Harbor (Broad Sound), and Nahant Bay. Strawberry Brook flows into the Saugus River, which flows into Broad Sound. These water bodies are all "waters of the United States" as set forth at 40 C.F.R. § 122.2 and, thereby navigable waters under Section 502(7) of the Act, 33 U.S.C. § 1362(7).
3. The Commission also operates a Small Municipal Separate Storm Sewer System ("Small MS4"), which is a system of conveyances (including roads with drainage systems, municipal streets, catch basins, gutters, ditches, man-made channels, and storm drains) designed to collect, convey, and discharge stormwater to receiving waters. The Small MS4 is designed to keep the stormwater separate from the Collection System.
4. The Commission's Small MS4 discharges through point sources, as defined in Section 502(14) of the Act, 33 U.S.C. § 1362(14), to Nahant Bay, Lynn Harbor (Broad Sound), the Saugus River, the Little River, Strawberry Brook, and Stacey Brook. The Little River and Strawberry Brook flow into the Saugus River, which flows into Broad Sound. Stacey Brook flows into Nahant Bay. These water bodies are all "waters of the United States" as

set forth at 40 C.F.R. § 122.2 and navigable waters under Section 502(7) of the Act, 33 U.S.C. § 1362(7).

Unpermitted Discharges from the Collection System

5. On March 30, 2007, the Commission was reissued NPDES Permit No. MA0100552 (the "NPDES Permit") by the Director of the Office of Ecosystem Protection of EPA, Region I, under the authority given to the Administrator of EPA by Section 402 of the Act, 33 U.S.C. § 1342. This authority has been delegated by the Administrator of EPA to the Regional Administrator of EPA, Region I, who in turn delegated this authority to the Director of the Office of Ecosystem Protection of EPA, Region 1.

6. The NPDES Permit authorizes the Permittee to discharge pollutants from specified point sources at the WWTF (outfall serial numbers 001 and 002) and the CSO outfalls (outfall serial numbers 003, 004, 005 and 006) to specified waters of the United States subject to the effluent limitations, monitoring requirements and other conditions specified in the NPDES Permit.

7. Section 301(a) of the Act, 33 U.S.C. § 1311(a), makes unlawful the discharge of pollutants to waters of the United States except in compliance with, among other things, the terms and conditions of an NPDES permit issued pursuant to Section 402 of the Act, 33 U.S.C. § 1342.

8. Part 1.B. of the NPDES Permit prohibits point source discharges of pollutants from any location other than outfall serial numbers 001 through 006.

9. In the past, the Commission has reported untreated sanitary sewer overflows containing pollutants from its Collection System to navigable waters from locations other than outfall serial numbers 001 through 006.

10. The Commission's unauthorized discharges from its Collection System to navigable waters occur in violation of Section 301(a) of the Act, 33 U.S.C. § 1311(a).

Storm Drain Discharges of Pollutants

11. Pursuant to Section 402(p) of the Act, 33 U.S.C. § 1342(p), on December 8, 1999 (64 Fed. Reg. 68722), EPA promulgated regulations at 40 C.F.R. § 122.26 that set forth NPDES permit requirements to address stormwater discharges from Small MS4s.

12. On April 18, 2003, EPA issued an NPDES General Permit for Stormwater Discharges from Small MS4s (the "Small MS4 General Permit" or "General Permit") pursuant to Section 402(p) of the Act, 33 U.S.C. § 1342(p), and 40 C.F.R. § 122.26[1] Pursuant to the Small MS4 General Permit, the Commission notified EPA it was seeking coverage under such permit on July 29, 2003. On October 2, 2003, EPA notified the Commission that its application was complete and it was authorized to discharge stormwater subject to the limitations and requirements of the Small MS4 General Permit.

13. Part I(B)(2)(j) of the Small MS4 General Permit specifically provides that the General Permit does not authorize the discharge of stormwater that is mixed with non-stormwater unless the discharge is in compliance with another NPDES permit or allowable under Part I(F) of the General Permit.[2]

14. Part I(B)(2)(k) of the Small MS4 General Permit does not authorize the discharge of stormwater that would cause or contribute to instream exceedances of water quality standards.

15. Fecal coliform bacteria, enterococcus bacteria, and sewage are "pollutants" within the meaning of Section 502(6) of the Act, 33 U.S.C. § 1362(6).

16. Nahant Bay is a surface water body designated as Class SA. Broad Sound and the Saugus River are designated as Class SB. They are all designated as habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth, and other critical functions, for shellfishing, and for primary and secondary contact recreation, pursuant to the Massachusetts Surface Water Quality Standards, 314 C.M.R. § 4.00.

17. The Massachusetts surface water quality standard for fecal coliform bacteria in Class SA

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[1] This Small MS4 General Permit covers Small MS4s within the Commonwealth of Massachusetts; the State of New Hampshire; Indian Country lands within Connecticut, Massachusetts and Rhode Island; and Federal Facilities within Vermont. It applies to MS4s that are not defined as large or medium MS4s pursuant to 40 C.F.R. § 122.26(b)(4) and (b)(7), nor designated under 40 C.F.R. § 122.26(a)(1)(v).

[2] Part I(F) of the Small MS$ General Permit authorizes 18 categories of non-stormwater discharges provided that it has been determined by the permittee that the discharges are not significant contributors of pollutants to the MS4. These categories include water line flushing, landscape irrigation, diverted stream flows, and rising ground waters. In addition, discharges or flows from fire fighting activities conducted during emergency situations are authorized as allowable non-stormwater discharges, unless identified by EPA as significant sources of pollutants.

waters designated for shellfishing provides that the geometric mean of the most probable number ("MPN") of samples collected may not exceed 14 organisms per 100 milliliters ("organisms/100 ml"), nor shall more than 10% of the samples exceed 28 organisms/100 ml. The Massachusetts surface water quality standard for fecal coliform bacteria in Class SB waters designated for shellfishing provides that the median or geometric mean of the MPN of samples collected may not exceed 88 organisms/100 milliliters, nor shall more than 10% of the samples exceed 260 organisms/100 ml.

18. The Massachusetts surface water quality standard for enterococci bacteria in Class SA and SB waters designated for primary and secondary contact recreation provides that the geometric mean of colony forming units ("cfu") of the most recent five samples collected may not exceed 35 cfu/100 milliliters, nor shall any single sample exceed 104 cfu/100 ml.

19. On November 11, 2011, EPA Region I staff collected and transported to the EPA New England Laboratory ("NERL") in accordance with an EPA-approved Quality Assurance Project Plan ("QAPP") water quality samples from the Commission's outlet of Stacey Brook[3] at Kings Beach. This discharge flows across the beach into Nahant Bay. The data from analysis of these samples (included as Attachment 1) demonstrate that the Commission's Small MS4, in violation of the General Permit, is discharging Escherichia coli ("E. coli")[4] and enterococcus bacteria that cause or contributes to violations of the Massachusetts water quality standards in Nahant Bay. The discharges were also analyzed for, and found to contain, selected Pharmaceuticals and Personal Care Products ("PPCPs"). The presence of the PPCPs in these samples provides evidence that the sources of the bacterial water quality exceedances are of human origin.

20. On May 8, 2012, EPA Region I staff collected and transported to the NERL in accordance with an EPA-approved QAPP water quality samples taken from the Commission's stormwater outfalls and storm sewers tributary to the Saugus River. The

[3] The Stacey Brook outfall consists of two large 10-foot by 10-foot box culverts that discharge onto Kings Beach along Nahant Bay at the municipal boundary of the Lynn, MA and Swampscott, MA. The south culvert discharges flow from Lynn's Small MS4. Both culverts were sampled during the inspection.

[4] E. coli is one of the organisms that constitute fecal coliform bacteria. A concentration of E. coli in excess of the water quality standard for fecal coliform bacteria demonstrates a violation of that standard.

data from analysis of these samples (included as Attachment 1) demonstrate that the Commission's Small MS4, in violation of the General Permit, is discharging E. coli and enterococcus bacteria that cause or contributes to violations of the Massachusetts water quality standards in the Saugus River. The discharges were also analyzed for, and found to contain, selected PPCPs. The presence of the PPCPs in these samples provides evidence that the sources of the bacterial water quality exceedances are of human origin.

21. The Commission has engaged in efforts to identify and eliminate illicit wastewater discharges to its Small MS4. The Commission has conducted field testing of Stacey Brook and areas tributary to the Saugus River to identify and remove illicit wastewater discharges to its Small MS4 drains. It is currently collaborating with the Massachusetts Department of Environmental Protection ("MassDEP") in bacteriological and caffeine analysis in the Stacey Brook drain to identify the source of elevated bacteria counts in the outfall, and during August 2012 conducted surfactant and ammonia analyses of samples taken from drains tributary to the Saugus River.

22. Discharges of pollutants from the Commission's Small MS4 drains include waste streams that are not "stormwater" as defined in 40 C.F.R. § 122.26(b)(13) and are not any of the 18 categories of allowable non-stormwater discharges under Part I(F) of the Small MS4 General Permit. Such discharges are specifically listed in Parts I(B)(j) and I(B)(2)(k) of the Small MS4 General Permit as not authorized by the General Permit and are not authorized by any other NPDES permit or any other provision of the Act.

23. The discharges from the Commission's Small MS4 drains that have caused or contributed to in-stream exceedances of water quality standards have occurred in violation of the General Permit and Section 301(a) of the Act, 33 U.S.C. § 1311(a).

III. ORDER ON CONSENT

Accordingly, it is hereby ordered that:

LONG-TERM PREVENTATIVE MAINTENANCE PROGRAM

1. Within 180 calendar days of receipt of this Order, submit for approval a long-term preventative maintenance plan (the "Preventative Maintenance Plan"). The Preventative Maintenance Plan shall be designed as a reference guide for the Commission's employees and its contractors and shall include, but need not be limited to, the following:
    a. physical inspection and testing procedures, and protocols that will be used by the Commission's staff to routinely inspect and maintain the Commission's Collection System including all pump stations, force mains, emergency generators, alarms, telemetry equipment, siphons, interceptor, and lateral sewers. The Preventative Maintenance Plan shall also establish procedures and protocols to identify and correct any structural, mechanical, or operational problems that may result in unauthorized discharges from its Collection System;
    b. priority and routine cleaning and maintenance schedules and procedures, including, but not limited to specific maintenance plans for those areas of the Collection System prone to fats, oils, and grease, silt and debris deposits and root penetration, as well as those areas that have been the source of unauthorized discharges in the past;
    c. a tracking system for all maintenance activities, including, at a minimum, the use of Collection System maintenance software designed to catalog the maintenance history of the Collection System and to plan and schedule future Collection System maintenance activities;
    d. procedures and protocols for corrective maintenance;
    e. a description of the staffing, organizational structure, and resource commitments necessary to maintain the Collection System and to implement the Preventative Maintenance Plan;

f. a plan for routine maintenance cleaning of the Collection System to maintain the its capacity and to prevent Collection System blockages; and

g. an implementation schedule.

2. The Preventative Maintenance Plan Implementation Schedule shall be incorporated and enforceable hereunder upon the Preventative Maintenance Plan Implementation Schedule's approval by, and as amended by, EPA.

CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE ("CMOM") PROGRAM ASSESSMENT

3. Within 180 calendar days of the effective date of this Order, the Commission shall complete and submit:

a. an inventory of the Commission's Collection System that characterizes the age, condition, type of construction, and operation of each element of its Collection System and provides for further assessments where warranted;

b. an assessment of the capacity of critical elements of the Collection System; and

c. an assessment of the Commission's operation and maintenance practices all of which shall comprise the "CMOM Program Self-Assessment".

d. As part of the assessments, the Commission shall determine whether improvements to the Commission's preventative maintenance practices are necessary in order to preserve the infrastructure of the Collection System and to prevent future overflows from the Collection System. The CMOM Program Self-Assessment shall be conducted in accordance with EPA's Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (EPA 305-B-05-002, January 2005)) (available on-line at http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf). As part of the CMOM Program Self Assessment, the Commission shall complete and submit the Wastewater Collection System CMOM Program Self-Assessment Checklist (the "CMOM Program Self-Assessment Checklist") (see Attachment 2),

which is a Region 1 modification of the checklist that accompanies the above CMOM guidance.

CMOM Corrective Action Plan

4. Within 270 calendar days of the effective date of this Order, the Commission shall submit a plan (the "CMOM Corrective Action Plan") that shall include the following:
   a. a list of any deficiencies identified by the CMOM Program Self-Assessment;
   b. a list of causes and contributing factors that lead to the overflows identified in response to this Order and the CMOM Program Self-Assessment Checklist;
   c. a description of the specific short and long-term actions that the Commission is taking, or plans to take, to address any of the deficiencies identified during the completion of the CMOM Program Self-Assessment Checklist; and
   d. a schedule for implementation of the CMOM Corrective Action Plan (the "CMOM Corrective Action Plan Implementation Schedule").
5. The CMOM Corrective Action Plan Implementation Schedule shall be incorporated and enforceable hereunder upon approval by, and as amended by, the EPA and MassDEP.

CMOM Program Document

6. Within one year of the effective date of this Order, the Commission shall consolidate all of the Collection System preventative and reactive maintenance programs and Collection System capital improvement plans into a single CMOM Program document. The CMOM Program document shall be maintained at a location that is readily accessible to the Commission's maintenance staff, and is available for inspection by the EPA and MassDEP.
7. Until further notice, beginning January 31, 2014, and each January 31st annually thereafter, the Commission shall submit a report (the "CMOM Program Implementation Annual Report"), detailing the actions taken by the Commission during the prior calendar year, or known by the Commission to have been taken by other parties, to resolve the deficiencies identified in the CMOM Corrective Action Plan and to comply with

Paragraphs III.3. through III.6. of this Order. The CMOM Program Implementation Annual Report shall also include:

a. a summary listing of all unauthorized discharges, overflows, spills, and releases that have occurred during the previous calendar year, including building/private property backups, that result from capacity limitations, blockages, or mechanical, electrical or structural failures in that portion of the Collection System owned by the Commission. The tabular listing shall be organized chronologically and shall include:

   i. the dates and times on which each event began and was stopped, or if it is continuing, a schedule for its termination;
   ii. the location (nearest address) of each such event;
   iii. the source of the notification (property owner, field crew, police);
   iv. the cause of the event, including but not limited to, whether it was caused by debris, fats, oils, and grease, or root blockages, collapsed pipes, mechanical, electrical and structural failures, hydraulic overloads, vandalism and/or illicit connections;
   v. the estimated gallons of wastewater released, and the method used to estimate the volume;
   vi. a clear statement of whether the release did or did not reach a storm water catch basin or any other portion of the Commission's Small MS4. If the release occurred to the ground or street, regardless of whether the discharge reached any portion of the Commission's Small MS4, the Commission shall provide the location of the nearest down-gradient stormwater catch basin and the name of the receiving water to which the catch basin discharges;
   vii. a clear statement of whether the release did or did not reach any surface water. If the release reached a surface water, the Commission shall include the name of the surface water;

viii. the estimated gallons of wastewater discharged to the Small MS4 or surface water and the method used to estimate the volume;

ix. the measures taken to stop the overflow and prevent future overflows at the same location;

x. the date that overflow was reported to the EPA and MassDEP;

xi. the date of the last overflow that occurred at the same location; and

xii. The location of each event included in the summary listing shall also be noted on a map of the Commission's Collection System (See Paragraph III.16.b.).

b. a description of the measures and programs implemented by the Commission to resolve any of the deficiencies identified pursuant to Paragraphs III.3. and III.4. of this Order and to reduce the frequency, duration and volume of unauthorized discharges, overflows, spills, and releases from the Commission's Collection System during the previous calendar year including copies of any contracts signed by the Commission to address any issues identified in the CMOM Corrective Action Plan. The report shall also include a description of the activities that the Commission has implemented to measure the effect and success of its efforts;

c. a description of the type of the Commission's Collection System mapping (i.e. GIS, paper) and the last date the map(s) was updated;

d. copies of the annual Collection System operation and maintenance budgets for the current and previous fiscal year noting the source of the funding – enterprise fund, general tax rate. Specifically indicate whether a capital replacement fund ("sinking fund") has been established to provide for replacement of aging wastewater Collection System infrastructure. Provide the Collection System maintenance staffing levels for the current fiscal year including:

i. budgeted positions;

ii. vacant positions; and

iii. a brief description of the responsibilities of each position clearly distinguishing Collection System maintenance responsibilities from responsibilities for the WWTF and other public works operations;

e. a description of any existing or proposed Commission programs designed to reduce the levels of extraneous flows that enter the Commission's Collection System and the specific measures that were taken by the Commission under these programs during the past calendar year including whether properties are inspected during the property transfer process to determine whether infiltration/inflow sources are tied into the Collection System and whether sanitary services have been tied into the Small MS4;

f. a description of any existing or proposed Commission easement maintenance programs for locating and uncovering lost or buried Collection System manholes and the specific measures that were taken by the Commission under these programs during the past calendar year; and

g. a projection of the measures that will be taken during the current calendar year to resolve any deficiencies identified in the CMOM Corrective Action Plan and to comply with this Order.

Third-Year CMOM Program Self-Assessment Checklist

8. An updated CMOM Program Self-Assessment Checklist shall be submitted in conjunction with the annual report required to be submitted by January 31, 2017 pursuant to Paragraph III.7. of this Order.

ILLICIT CONNECTION DETECTION AND ELIMINATION

9. By January 31, 2013, the Commission shall develop and submit to EPA for review and approval a comprehensive Illicit Discharge Detection and Elimination Plan ("IDDE Plan") for identifying and eliminating non-stormwater discharges to the Commission's Small MS4. The Commission shall develop the IDDE Plan by applying the EPA Region I's IDDE Protocol for the identification and elimination of illicit connections included as Attachment 3. The IDDE Plan shall address the Commission's entire Small MS4.

10. The Commission shall implement the IDDE Plan upon approval, conditional approval, or modification by EPA pursuant to Paragraph IV.9 of this Order. For those Small MS4 sub-catchment areas and associated Small MS4 outfalls subject to IDDE investigations, the IDDE Plan shall also include provisions for monitoring during both dry and wet weather to demonstrate the effectiveness of its illicit connection removal efforts. The IDDE Plan shall also include installation of signs at each Small MS4 outfall to allow each outfall to be readily identified in the field.

11. As part of the IDDE Plan the Commission shall track, for each calendar year and cumulative to date, the number of illicit discharges identified, their location, and the approximate flow removed by their elimination. This information shall be submitted as part of the Compliance Reports required by Paragraph III.16. of this Order.

12. As Part of the IDDE Plan, the Commission shall propose a program to publicize through local cable television, local newspapers, and inserts included with water and sewer bills a request that members of the public report to the Commission all Sanitary Sewer Overflows, whether to surface waters, streets, parklands or buildings and other property. The request shall identify a single point of contact at the Commission to which the reports shall be made.

13. The Commission shall report all such events to EPA and MassDEP. Events shall be reported within 24 hours via electronic mail (harding.george@epa.gov) to EPA, and shall be tabulated and submitted as part of the compliance reports required by Paragraph III.16. of this Order.

14. As a separate section of the IDDE Plan, the Commission shall provide an assessment of whether it has the resources to implement the IDDE Plan. Where it cannot be demonstrated to EPA's satisfaction that the Commission's in-house resources are adequate to execute the specific tasks of the IDDE Plan, the Commission shall execute a contract with a qualified contractor(s) to complete the specific tasks necessary to determine and remove the sources of non-stormwater pollutants in the Small MS4.

15. The Commission may be entitled to reimbursement from third parties for some of the work necessary to remove illicit connections. Nothing in this Order shall be construed to

make the Commission responsible for costs that would ordinarily be borne by third parties.

Reporting Requirements

16. On or before July 31, 2013, and quarterly until completion of all remedial measures required by the IDDE Plan, the Commission shall submit for review by EPA and MassDEP a Compliance Report that details actions taken during the previous calendar quarter by the Commission, or known by the Commission to have been taken by other parties, to comply with the terms and conditions of Paragraphs III.9-14 of this Order. Each Compliance Report shall include, at a minimum, the following items:

    a. a listing of all illicit connections identified during the previous calendar quarter, including the estimated flow from each connection, the actions taken by the Commission to remove each connection, the date each connection was removed, and the cost of removing each connection. The report shall estimate the wastewater volume removed from the Small MS4 under the IDDE Plan during the reporting period for each individual illicit connection, cumulative for all illicit connections during the reporting period, and cumulative for all illicit connections to date. The report shall include an appendix with a summary listing of the address, associated volume, and date eliminated for all illicit connections identified to date.
    b. a map or figure indicating the location of each illicit connection identified and each illicit connection removed, cumulative to date;
    c. a description of any activities undertaken during the previous calendar quarter to achieve compliance with Paragraphs III.9.-14. of this Order;
    d. a listing of all plans, reports, and other deliverables required by this Order that the Commission completed and submitted during the previous calendar quarter to comply with this Order;
    e. the activities expected to be undertaken during the current calendar quarter in order to achieve compliance with this Order; and
    f. all instances of noncompliance with this Order's requirements. If noncompliance

is reported, notification shall be provided in accordance with Paragraph V.2 and 3 of this Order.

IV. SUBMISSIONS REQUIRING EPA APPROVAL: THE COMMISSION'S OBLIGATION TO PROCEED

1. After review of any deliverable, plan, report, or other item ("submissions") which the Commission is required to submit for approval under this Order, EPA may: (a) approve, in whole or in part, the submission; (b) conditionally approve, in whole or in part the submission upon specified conditions; (c) disapprove the submission, in whole or in part, and notify the Commission of the deficiencies; or (d) disapprove the submission, in whole or in part, and modify the deliverable, plan, report, or other item itself, or portions thereof, to cure any deficiencies. In the event EPA that approves, conditionally approves, or modifies the submission, or portion thereof, the Commission shall perform all actions required by the submission or portion thereof, as approved, conditionally approved, or modified by EPA.
2. Upon receipt of a notice of disapproval with deficiencies (Paragraph IV.1.(c) above), the Commission shall correct the deficiencies and resubmit the affected document within **seven (7) days of receipt** or such other time period specified in the notice of disapproval. Notwithstanding a notice of disapproval, the Commission shall proceed to take any action required by any non-deficient portion of the submission. If EPA finds the submission as resubmitted is still deficient, the Commission shall be in violation of the Order.

V. NOTIFICATION PROCEDURES

1. Where this Order requires a specific action to be performed within a certain time frame, the Commission shall submit a written notice of compliance or noncompliance with each deadline. Notification shall be mailed within fourteen (14) days after each required deadline. The timely submission of a required report shall satisfy the requirement that a notice of compliance be submitted.

2. If noncompliance is reported, notification shall include the following information
   a. a description of the noncompliance;
   b. a description of any actions taken or proposed by the Commission to comply with the lapsed schedule requirements;
   c. a description of any factors that explain or mitigate the noncompliance; and
   d. an approximate date by which the Commission will perform the required action.
3. After a notification of noncompliance has been filed, compliance with the past requirement shall be reported by submitting any required documents or providing EPA with a written report indicating that the required action has been achieved. Submissions required by this Order shall be in writing and shall be mailed to the following addresses:

Office of Environmental Stewardship
U.S. Environmental Protection Agency
5 Post Office Square – Suite 100
Boston, MA 02109-3912
Attn: George Harding (OES 04-04)

Massachusetts Department of Environmental Protection
Northeast Regional Office
205 B Lowell Street
Wilmington, MA 01887
Attn: Kevin Brander

V. GENERAL PROVISIONS

1. The Commission may, if it desires, assert a business confidentiality claim covering part or all of the information requested, in the manner described by 40 C.F.R. § 2.203(b). Information covered by such a claim will be disclosed by EPA only to the extent set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is received by EPA, the information may be made available to the public by EPA without further notice to the Commission. The Commission should carefully read the above-cited regulations before asserting a business confidentiality claim since certain categories of information are not properly the subject of such a claim. For example, the Act provides

that "effluent data" shall in all cases be made available to the public. See Section 308(b) of the Act, 33 U.S.C. § 1318(b).

2. This Order does not constitute a waiver or a modification of the terms and conditions of the NPDES Permit and General Permit. The NPDES Permit and General Permit remains in full force and effect. EPA reserves the right to seek any and all remedies available under Section 309 of the Act, 33 U.S.C. § 1319, as amended, for any violation cited in this Order.

3. This Order shall become effective upon receipt by the Commission.

4. The Commission waives any and all claims for relief and otherwise available rights or remedies to judicial or administrative review which the Commission may have with respect to any issue of fact or law set forth in this Order on Consent, including, but not limited to, any right of judicial review of the Section 309(a)(3) Compliance Order on Consent under the Administrative Procedure Act, 5 U.S.C. §§ 701-708.

_____	_____
Date	Daniel F. O'Neill, P.E. Executive Director Lynn Water and Sewer Commission
_____	_____
Date	Susan Studlien, Director Office of Environmental Stewardship Environmental Protection Agency, Region I

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I - EPA NEW ENGLAND

DATE: Draft:
Final: 7/7/11
Revised:

SUBJ: Recon of storm water outfalls around Lake Quinsigamond, Worcester MA.

FROM: Douglas Koopman, Environmental Engineer
Water Technical unit

THRU: Denny Dart, Water Technical Branch Chief

TO: File

I. Background Information

Date of inspection: 6/29/11 to 7/1/11

Weather Conditions: all days were clear skies temps in the high 70's

Personnel in attendance: Doug Koopman EPA
Erin Trainor EPA Lab

II. Purpose of Inspection

Screen storm water outfalls in the area of Lake Quinsigamond. Inspectors were looking for storm water outfalls that had dry weather flow. Outfalls that had dry weather flow were sampled and tested for ammonia, chlorine and surfactants.

III. Description of Outfalls

Below is a list of storm water outfalls taken from the City of Worcester's Stormwater Management Plan Annual report (check marks were used to indicate which outfalls we had looked for).

Lake Quinsigamond

Outfall #	Address	Acres	size inches
lq09	83 Lake Avenue	109.1	36
lq10	365 Plantation Street	170.8	60
lq11	35 Bird Street	62.9	42
lq14	8 North Lake Ave.	205.3	60
lq19	382 Plantation Street	68.3	30
Outfall #	**Address**	**Acres**	**size inches**
lq01	292 Lake Avenue	10.4	15
lq02	395 Bridal Path	7.6	12+-
lq03	212 Lake Avenue	14.7	10
lq04	284 Lake Avenue	14.1	24
lq05	123 Westborough Street	2.0	12
lq06	98 Pineland Avenue	13.9	24
lq07	43 Pineland Avenue	28.8	12
lq08	5 Suntaug Road	20.4	21
lq12	10 North Lake Ave.	18.3	24
lq15	301 Bridal Path	3.5	12
lq17	4 Suntaug Road	15.0	21
lq18	8 Flint Pond Road	27.9	27
lq20	333 Bridal Path	47.3	30
lq21	25 Valente Drive	4.9	16
lq22	157 Lake Ave		24"
lq23	157 Lake Ave		8

O’Hara Brook

Outfall #	Address	Acres	size inche
ob01	376 Sunderland Road	80.2	18
ob07	9 Brandt Lane	42.3	36
ob09	20 Jolma Road	76.4	42
ob11	1038 Grafton Street	22.8	36+-
ob14	6 Crane Street	81.7	30
Outfall #	**Address**	**Acres**	**size inche**
ob02	20 Pine Hill Road	40.4	15
ob03	11 Whitla Drive	24.3	12
ob04	6 Ideal Terrace	4.0	12
ob05	10 Crane Street	12.8	12
ob06	430 Sunderland Road	19.5	12
ob10	35 Burghardt Street	4.1	15
ob13	37 Whitla Drive	2.2	12
ob15	4 O'Hara Circle	1.2	12

Broad Meadow Brook

jor		Outfall #	Address	Acres	size inches	lat
Δ	*	bmb04	76 Dunkirk Avenue ✓	419.0	60	
Δ		bmb07	61 Sandra Drive ✓	114.7	36+-	
nor		Outfall #	Address	Acres	size inches	lat
	Δ	bmb01	504 Massasoit Road ✓	6.4	12	
	Δ	bmb02	326 Southwest Cutoff ✓	11.9	12	
	Δ	bmb03	1 Tiffany Avenue ✓	4.0	15	
	Δ	bmb05	31 Vincent Circle ✓	11.1	12	
	Δ	bmb06	6 Woodcliffe Avenue ✓	23.5	30	
	Δ	bmb08	35 Vincent Circle ✓	4.6	12	
	Δ	bmb09	20 Balin Drive ✓	7.3	18	
	Δ	bmbt01	204 Granite Street	20.6	12+-	

* Illicit connection found going into this outfall, 2009

Δ Dry weather screening done in 2009

Notes from sampling reports:

bmb04 - some dead fish in brook

Fitzgerald Brook

major		Outfall #	Address	Acres	size inches	latest screenin
O	*	lq13*	240 Coburn Avenue ✓	670.3	60	8/17/2006

* Illicit connection found going into this outfall 2009

O Illicit " " " " " " 2008

IV. Inspection

During the night of 6/28/11 and early morning hours of 6/29/11 passing showers went thru the area. When the inspections began the morning of 6/29/11 the ground was dry and the sun was out. There was no precipitation on 6/30 or 7/1/2011.

Broad Medow Brook - we were only able to find the outfalls for 61 Sandra drive, and 35 Vincent drive. The remaining outfalls were not located due to their location in back yards and swampy overgrown areas.

O'Hara Brook

10 Crane Street.

6 Crane Street

6 Crane Street is a 30 inch pipe which had suds at the discharge. The discharge was flowing at roughly 5- 10 gal/min.

10 Crane Street is a 12 inch pipe. There was an orange coating on the rocks below the discharge. The discharge was flowing at roughly 10-15 gal/min.

Samples were taken at both of these storm drains.

Results #6 Cl
NH3
Surfactants

#10 Cl
NH3
Surfactants

An interesting note for the 9 Brandt Lane outfall. The land upstream of this location has been developed (stores and parking lots) which has altered the path of the Brook. Very little of the brook flows thru the pipe under 9 Brandt Lane. Instead it flows across the paved property of the homeowner and meets up with the outfall pipe coming from under the property. The two flows join back up and continue on in its natural path. This leads to a constant flow of water across this property and icing conditions in the winter.

Lake Quinsigamond

4 & 5 Suntuag Road – Samples were taken from these two outfalls that were flowing. the results are as follows:

Results #4 Cl .01 ppm
NH3 0 ppm
Surfactants greater than .25 ppm

#5 Cl .04 ppm
NH3 0 ppm
Surfactants greater than .25 ppm

382 Plantation Street

Samples were taken at this location. Foam was evident at the discharge as well as upstream and downstream.

Results #4 Cl .05 ppm
NH3 0 ppm
Surfactants less than .25 ppm

Fitzerald Brook

Samples were taken at the Fitzgerald Brook structure. A sample of the water flowing into the structure and a sample coming from a 6 inch pipe which was flowing at less than a gallon per minute.

The sample results were

Results 6 inch pipe	Cl .02 ppm	
	NH3 0 ppm	
	Surfactants	less than .25 ppm
Main flow	Cl .02 ppm	
	NH3 0 ppm	
	Surfactants	.25 ppm

Main structure

6 inch pipe inside(larger pipe)

Photo Log for Lake quinsigamond recon Recon done 6/29 to 7/1/2011

Doug Koopman and Erin Trainor

061 – 326 Southwest cutoff

062 063 61 Sandra Drive

064 76 dunkirk St

065 – 10 Crane Street

066-068 6 crane st

069 – 075 9 brandt lane

076 – 078 4 & 5 Suntaug Road

079 – 080 outlet of Fitzgerald brook

081 fitzerald brook flowing away from pipe

082 Stream coming into Fitzgerald brook structure

083 084 inlet to fitzgerald brook structure

085 water coming into structure from large pipe

086 2 pipes entering fitzgerald structure larger pipe has dry weather flow

087 looking out fitzgerald brook structure

088- 089 382 Plantation Ave

090 Further downstream of 382 stream still foaming

091 -094 storm grate located at 365 plantation ave had intermittent flow into the storm drain

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

May 16, 2014

Todd Borci - Mail Code OES04-4
Erin Trainor - EIA / OEME
US EPA New England R1

Project Number: 14040011
Project: MS4 Lawrence, MA / MS4 North Andover, MA
Analysis: HPLC/MS/MS Source Tracking Analysis
EPA Chemist: Peter Philbrook

Date Samples Received by the Laboratory: 04/17/2014

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIA-LCMS_STA.1.

The SOP is based on an EPA Regional Analytical Method developed at the EPA New England Laboratory.

Data were reviewed in accordance with the internal verification procedures described in the EPA New England Quality Manual for NERL.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Digitally signed by Dan Boudreau
DN: cn=Dan Boudreau, o=EPA, ou=EIA, email=boudreau.dan@epa.gov, c=US
Date: 2014.05.16 08:42:53 -04'00'

14040011$STA

Qualifiers

RL	Reporting limit
ND	Not Detected above reporting limit
NA	Not Applicable
NC	Not calculated since analyte concentration is ND
J1	Estimated value due to MS recovery outside accceptance criteria
J2	Estimated value due to LFB result outside acceptance criteria
J3	Estimated value due to RPD result outside acceptance criteria
J4	Estimated value due to LCS result outside acceptance criteria
B	Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 3 times the concentration in the blank.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Law 02-07:50	Lab Sample ID:	AB47609
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**3.6**	0.40	
103-90-2	Acetaminophen	**200**	2.0	
486-56-6	Atenolol	**4.3**	2.0	
611-59-6	1,7-Dimethylxanthine	**26**	2.0	
58-08-2	Caffeine	**190**	4.0	
298-46-4	Metoprolol	**5.2**	2.0	
56392-17-7	Carbamazepine	**2.1**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	84	54 - 110
Sulfamethazine 13C6	83	20 - 124

Comments:

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Sutton 01	Lab Sample ID:	AB47610
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**3.7**	0.40	
103-90-2	Acetaminophen	**8.0**	2.0	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**4.2**	2.0	
58-08-2	Caffeine	**45**	4.0	
298-46-4	Metoprolol	ND	2.0	
56392-17-7	Carbamazepine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	71	54 - 110
Sulfamethazine 13C6	70	20 - 124

Comments:

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Sutton 02	Lab Sample ID:	AB47611
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**4.0**	0.40	
103-90-2	Acetaminophen	**3.3**	2.0	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**2.5**	2.0	
58-08-2	Caffeine	**47**	4.0	
298-46-4	Metoprolol	ND	2.0	
56392-17-7	Carbamazepine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	60	54 - 110
Sulfamethazine 13C6	74	20 - 124

Comments:

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Sutton 06	Lab Sample ID:	AB47612
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**28**	0.40	
103-90-2	Acetaminophen	**460**	10	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**91**	2.0	
58-08-2	Caffeine	**140**	4.0	
298-46-4	Metoprolol	**2.6**	2.0	
56392-17-7	Carbamazepine	**0.69**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	64	54 - 110
Sulfamethazine 13C6	81	20 - 124

Comments: Acetaminophen is reported from a 5x dilution.

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	DMH 1013 A	Lab Sample ID:	AB47613
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**22**	0.40	
103-90-2	Acetaminophen	**260**	10	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**14**	2.0	
58-08-2	Caffeine	**38**	4.0	
298-46-4	Metoprolol	ND	2.0	
56392-17-7	Carbamazepine	**1.1**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	76	54 - 110
Sulfamethazine 13C6	92	20 - 124

Comments: Acetaminophen is reported from a 5x dilution.

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	DMH 1013 B	Lab Sample ID:	AB47614
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**6.1**	0.40	
103-90-2	Acetaminophen	**3.7**	2.0	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**250**	2.0	
58-08-2	Caffeine	**320**	4.0	
298-46-4	Metoprolol	**10**	2.0	
56392-17-7	Carbamazepine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	71	54 - 110
Sulfamethazine 13C6	87	20 - 124

Comments:

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	DMH 1027	Lab Sample ID:	AB47615
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**26**	0.40	
103-90-2	Acetaminophen	**460**	10	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**41**	2.0	
58-08-2	Caffeine	**120**	4.0	
298-46-4	Metoprolol	ND	2.0	
56392-17-7	Carbamazepine	**1.1**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	74	54 - 110
Sulfamethazine 13C6	87	20 - 124

Comments: Acetaminophen is reported from a 5x dilution.

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	DMH 1026	Lab Sample ID:	AB47616
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**24**	0.40	
103-90-2	Acetaminophen	**490**	10	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**43**	2.0	
58-08-2	Caffeine	**510**	20	
298-46-4	Metoprolol	ND	2.0	
56392-17-7	Carbamazepine	**1.0**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	80	54 - 110
Sulfamethazine 13C6	84	20 - 124

Comments: Acetaminophen and caffeine are reported from a 5x dilution.

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	DMH 1025	Lab Sample ID:	AB47617
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**4.6**	0.40	
103-90-2	Acetaminophen	**2.9**	2.0	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**240**	2.0	
58-08-2	Caffeine	**200**	4.0	
298-46-4	Metoprolol	**14**	2.0	
56392-17-7	Carbamazepine	**0.38**	0.40	L

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	66	54 - 110
Sulfamethazine 13C6	78	20 - 124

Comments: L = Estimated value is below the calibration range

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	DMH 1018	Lab Sample ID:	AB47618
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**10**	0.40	
103-90-2	Acetaminophen	**190**	2.0	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**11**	2.0	
58-08-2	Caffeine	**330**	4.0	
298-46-4	Metoprolol	ND	2.0	
56392-17-7	Carbamazepine	**0.89**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	71	54 - 110
Sulfamethazine 13C6	75	20 - 124

Comments:

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	DMH 1014	Lab Sample ID:	AB47619
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**10**	0.40	
103-90-2	Acetaminophen	**16**	2.0	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**160**	2.0	
58-08-2	Caffeine	**800**	20	
298-46-4	Metoprolol	**2.6**	2.0	
56392-17-7	Carbamazepine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	73	54 - 110
Sulfamethazine 13C6	89	20 - 124

Comments: Caffeine is reported from a 5x dilution.

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	DMH 1016	Lab Sample ID:	AB47620
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	**7.2**	0.40	
103-90-2	Acetaminophen	**82**	2.0	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	**6.7**	2.0	
58-08-2	Caffeine	**140**	4.0	
298-46-4	Metoprolol	ND	2.0	
56392-17-7	Carbamazepine	**1.0**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	74	54 - 110
Sulfamethazine 13C6	81	20 - 124

Comments:

MS4 Lawrence, MA / MS4 North Andover, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Law 02-12:35	Lab Sample ID:	AB47621
Date of Collection:	4/17/2014	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	ND	0.40	
103-90-2	Acetaminophen	**95**	2.0	
486-56-6	Atenolol	**8.7**	2.0	
611-59-6	1,7-Dimethylxanthine	**14**	2.0	
58-08-2	Caffeine	**150**	4.0	
298-46-4	Metoprolol	**2.5**	2.0	
56392-17-7	Carbamazepine	**2.3**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	79	54 - 110
Sulfamethazine 13C6	85	20 - 124

Comments:

MS4 Lawrence, MA / MS4 North Andover, MA

Laboratory Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	Water
Date of Preparation:	4/21/2014	Amount Prepared:	500 mL
Date of Analysis:	5/08/2014	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	N/A

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Cotinine	ND	0.40	
103-90-2	Acetaminophen	ND	2.0	
486-56-6	Atenolol	ND	2.0	
611-59-6	1,7-Dimethylxanthine	ND	2.0	
58-08-2	Caffeine	ND	4.0	
298-46-4	Metoprolol	ND	2.0	
56392-17-7	Carbamazepine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	83	54 - 110
Sulfamethazine 13C6	65	20 - 124

Comments:

MS4 Lawrence, MA / MS4 North Andover, MA

MATRIX SPIKE (MS) RECOVERY

Sample ID: AB47621

PARAMETER	SPIKE ADDED ng/L	SAMPLE CONCENTRATION ng/L	MS CONCENTRATION ng/L	MS % REC	QC LIMITS (% REC)
1,7-Dimethylxanthine	120.0	14	99.3	71	13 - 174
Acetaminophen	120.0	95	173	65	23 - 138
Atenolol	120.0	8.7	114	88	49 - 137
Caffeine	240.0	150	326	73	31 - 156
Carbamazepine	24.0	2.3	21.8	81	47 - 143
Cotinine	24.0	ND	26.4	110	46 - 121
Metoprolol	120.0	2.5	113	92	60 - 140

MS4 Lawrence, MA / MS4 North Andover, MA

Laboratory Duplicate Results

Sample ID: AB47610

PARAMETER	SAMPLE RESULT ng/L	SAMPLE DUPLICATE RESULT ng/L	PRECISION RPD %	QC LIMITS
1,7-Dimethylxanthine	4.2	2.9	36.6	50
Acetaminophen	8.0	6.2	25.4	50
Atenolol	ND	ND	ND	50
Caffeine	45	52	14.4	50
Carbamazepine	ND	ND	ND	50
Cotinine	3.7	3.5	5.56	50
Metoprolol	ND	ND	ND	50

MS4 Lawrence, MA / MS4 North Andover, MA

Laboratory Fortified Blank (LFB) Results

PARAMETER	LFB AMOUNT SPIKED ng/L	LFB RESULT ng/L	LFB RECOVERY %	QC LIMITS %
1,7-Dimethylxanthine	120	91.4	76	64 - 135
Acetaminophen	120	105	88	48 - 122
Atenolol	120	120	100	52 - 128
Caffeine	240	225	94	68 - 126
Carbamazepine	24	20.1	84	65 - 121
Cotinine	24	20.8	87	60 - 120
Metoprolol	120	110	92	60 - 140

Comments:

Samples in Batch: AB47609, AB47610, AB47611, AB47612, AB47613, AB47614, AB47615, AB47616, AB47617, AB47618, AB47619, AB47620, AB47621

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

14040011$CPF

PROJ. NO.: 1040011

PROJECT NAME: Lawrence MA MS4 / N. Andover, MA MS4

SAMPLERS: (Signature)

STA. NO.	DATE (Time)	TIME (Date)	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8270A						REMARKS
	0950	4/17/14		✓	LOW 02	1	✓						
	0925				Sumner 01								
	0935				Sumner 02								
	0930				Sumner 06								
	0945				DMH 1013A								
	0950				DMH 1013B								
	1020				DMH 1027								
	1030				DMH 1026								
	1045				DMH 1025								
	1125				DMH 1018								
	1145				DMH 1014								
	1205				DMH 1016								
	1230				LOW 02								

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	4/17/14 1340				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		ESAT	4/17/14 1340		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspec ion Type	Inspector	Fac Type
1 N 2	3 MAR041201 11	12 12/04/24 17	18 <	19 R	20

Inspection Type Description

Stormwater-MS4-sampling

Remarks

21 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 . 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)

Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station, identified as LAW01 (42.70861770 N, 71.13402411 W).
Outfall located on East Boxford Street, north of Lawrence High School, identified as LAW02 (42.69552796 N, 71.14615106 W)
Outfall located along south side of Merrimack River, north of New Balance factory, identified as LAW03 (42.70352069 N, 71.15579820 W).
Control sample collected upstream of sample identified as LAW03 to compare results, identified as LAW04 (42.70349669 N, 71.15589465 W).
Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse, identified as LAW05 (42.69218977 N, 71.17582728 W).
Outfall located on Shepard Street, northeast of Lawrence Riverfront Industrial Park, identified as LAW06 (42.68850280 N, 71.17926558 W).
Outfall located along north side of Merrimack River, off of Water Street, identified as LAW07 (42.69453064 N, 71.17665595 W).

Entry Time/Date	Permit Effective Date
7:45AM 4/24/2012	August 2003
Exit Time/Date	**Permit Expiration Date**
12:00PM 4/24/2012	August 2008

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

No contact with the City of Lawrence was made during this sampling inspection.

O her Facility Data

Receiving Water: Merrimack River
Shawsheen River (LAW02)

Name, Address of responsible Official/Title/Phone and Fax Number.

John Isensee
Director of Public Works
Phone: (978) 620-3090 Fax: (978) 722-9160

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Prevention	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Erin F. Trainor	US EPA / EIA / p. (617) 918-8382 / f. (617) 918-8282	4/24/2012
Todd Borci	US EPA / EIA / p. (617) 918-8382 / f. (617) 918-8282	4/24/2012
Signature of Management QA Reviewer	**Agency/Office/Phone and Fax Numbers**	**Date**

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspec ion Type	Inspector	Fac Type
1 N 2	3 MAR041201 11	12 12/06/27 17	18 <	19 R	20

Inspection Type Description

Stormwater-MS4-sampling

Remarks

21 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 1.0 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)

Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station, identified as LAW01 (42.70861770 N, 71.13402411 W).
Outfall located on East Boxford Street, north of Lawrence High School, identified as LAW02 (42.69552796 N, 71.14615106 W)
Outfall located along south side of Merrimack River, north of New Balance factory, identified as LAW03 (42.70352069 N, 71.15579820 W).
In-stream sample collected from the canal located upstream of LAW03, identified as LAW3up (42.70243609 N, 71.13576928 W).
Control sample collected from Merrimack River upstream of sample identified as LAW03 to compare results, identified as LAW04 (42.70349669 N, 71.15589465 W).
Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse, identified as LAW05 (42.69218977 N, 71.17582728 W).
Outfall located along north side of Merrimack River, off of Water Street, identified as LAW07 (42.69453064 N, 71.17665595 W).

Entry Time/Date: 8:25AM 6/27/2012
Permit Effective Date:
Exit Time/Date: 12:00PM 6/27/2012
Permit Expiration Date:

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

No contact with the City of Lawrence was made during this sampling inspection.

O her Facility Data

Receiving Water: Merrimack River
Shawsheen River (LAW02)

Name, Address of responsible Official/Title/Phone and Fax Number.

John Isensee
Director of Public Works
Phone: (978) 620-3090 Fax: (978) 722-9160

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Prevention	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Erin F. Trainor	US EPA / EIA / p. (617) 918-8382 / f. (617) 918-8282	7/13/2012
Todd Borci	US EPA / EIA / p. (617) 918-1358 / f. (617) 918-1810	7/13/2012
Signature of Management QA Reviewer	**Agency/Office/Phone and Fax Numbers**	**Date**

RARE Stormwater Outfall Inspection & Sampling Summary

Location				Outfall		Inspection										
													Surfact. (mg/l)			
Date	Town	Site Name	Time	Pipe Mat.	Dia. (in)	Est. Flow (gpm)	Odor	Color	Turbidity	Floatables	E.coli (MPN/100ml)	Entero (MPN/100ml)	Alpha	Field	DR-850	Alpha
8/19/09	Lawrence	SPR01	7:55	open stream	na	stream	None	None	Clear	None	96	NA	NA	ND	NA	NA
8/19/09	Lawrence	SPR02	8:00	open stream	na	stream	musty	None	Clear	None	96	NA	NA	0.10	NA	NA
8/19/09	Lawrence	SPR03	8:10	open stream	na	stream	None	None	Clear	some suds*	319	NA	NA	0.10	NA	NA
8/19/09	Lawrence	SPR04	8:15	k from concrete pipe			None	None	Clear	None	ND	NA	NA	ND	NA	NA
8/19/09	Lawrence	SPR05	8:55	concrete	18"	10	light sewag	None	Clear	None	1741	NA	NA	0.25	NA	NA
8/19/09	Lawrence	Shaw01	9:40	cement	(3) 15' x 15'		None	med tea	cloudy	e suds and le	157	NA	NA	0.10	NA	NA
8/19/09	Lawrence	UR012	9:40	cement	(3) 15' x 15'		None	med tea	cloudy	e suds and le	174	NA	NA	NA	NA	NA
8/19/09	Lawrence	SLE3	10:20	concrete	3'	strong, musty sewa		None	Clear	None	34	NA	NA	0.20	NA	NA

NH3 (mg/l)				Nitrate/Nitrite	P	PPCP ng/L									Cl2 (mg/l)				Flou
Field	Nessler	DR-850	Test St.	Alpha	EPA (µg/L)	Atenolol	Acetaminophen	Cotinine	1,7 Dimethylxanthine	Caffeine	Azithromycin	Primidone	Urobilin	Carbamazepine	Alpha Free	Alpha Total	Field	Test St.	Alpha
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.6	NA	NA	4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA

			Coordinates				YSI Meter				Weather		
ride	Potassium (mg/L)						Salinity	Temp	Cond uctivit	Rain Gauge	24hr s	48hrs	Wet/Dry ?
DR-850	Alpha	Field	GPS North(+)	GPS West (-)	Comments	Additional Location Information	ppt	C	uS	Location	inches	inches	
NA	NA	NA	42.70688	-71.1476552	downstream of waterf	confluence of canal &	0.1	26.5	188	Lawrence	0	0	Dry
NA	NA	NA	42.70703754	-71.14815826	some algae on stream	just down stream of ca	0.1	25.6	192.9	Lawrence	0	0	Dry
NA	NA	NA	42.70747755	-71.14846649	shallow 1' aglae on ro	Upstream (~50') of Sp	0.2	23.2	480	Lawrence	0	0	Dry
NA	NA	NA	42.70725878	-71.14809783	on Merrimack river sid	leaky pipe under Spic	0.1	22.6	230	Lawrence	0	0	Dry
NA	NA	NA	42.70991636	-71.15129912	tace hemoglobin off u	pipe off Lawrence Hos	1.2	22.6	2291	Lawrence	0	0	Dry
NA	NA	NA	42.70516882	-71.14005475	waded in, about 400'	mouth of Shawsheen	0.3	24.6	633	Lawrence	0	0	Dry
NA	NA	NA	42.70516882	-71.14005475	duplicate of Shaw01		na	na	na	Lawrence	0	0	Dry
NA	NA	NA	42.695971	-71.1455601	took additional photos	South Lawrence Elem	0.5	15.5	1072	Lawrence	0	0	Dry

RARE Stormwater Outfall Inspection & Sampling Summary

Location				Outfall		Inspection														
													Surfact. (mg/l)			NH3 (mg/l)				
Date	Town	Site Name	Time	Pipe Mat.	Dia. (in)	Est. Flow (gpm)	Odor	Color	Turbidity	Floatables	E.coli (MPN/100ml)	Entero (MPN/100ml)	Alpha	Field	DR-850	Alpha	Field	Nessler	DR-850	Test St.
9/22/09	Lawrence	SLE3	11:30	ncrete out	3'	na	light must	None	Clear	None	205	445	ND	~0.1	ND	ND	ND	0.4	ND	ND
9/22/09	Lawrence	UR018	11:30	ncrete out	3'	na	light must	None	Clear	None	279	249	ND	~0.1	ND	ND	ND	0.4	ND	ND
9/22/09	Lawrence	SPR05	12:30	concrete	18"	10	light must	None	Clear	Yes, pape	29870	19863	~0.05	0.25	0.05	7.02	>2	>3	2.26	6
3/24/10		Shaw01																		
6/10/10	Lawrence	SLE3	7:25	ncrete out	3'	NA	rong mus	hite/tan/gr	ghtly clou	amentous	1954	2359	NA	1	NA	NA	NA	NA	NA	ND
6/10/10	Lawrence	UR027	7:25	ncrete out	3'	NA	rong mus	none	ghtly clou	amentous	1741	1314	NA	0.2	NA	NA	NA	NA	NA	ND
6/10/10	Lawrence	SLE3	8:25	ncrete out	3'	NA	rong mus	none	ghtly clou	amentous	899	4884	NA	0.2	NA	NA	NA	NA	NA	ND
6/10/10	Lawrence	SLE3	9:00	ncrete out	3'	NA	rong mus	none	ghtly clou	amentous	806	2014	NA	0.5	NA	NA	NA	NA	NA	ND
6/10/10	Lawrence	SPR05	9:35	concrete	18"	10	none	none	very clea	none	NA	NA	NA	0.5	NA	NA	NA	NA	NA	ND
8/4/10	Lawrence	SPR05	7:35	concrete	18"	−5 - 10	lean sme	none	none	none	30	10	NA	0.2	NA	NA	NA	NA	NA	0.2
8/4/10	Lawrence	SPRLGH	7:40	Open stre	NA	NA	none	none	clear	none	1164	1529	NA	~0.1	NA	NA	NA	NA	NA	ND
8/4/10	Lawrence	Jackson	8:25	Open stre	NA	NA	none	light tea	some	sh and deb	606	512	NA	~0.1	NA	NA	NA	NA	NA	ND
8/4/10	Lawrence	Willow	9:00	Open stre	NA	NA	none	med tea	none	sh and deb	325	158	NA	~0.1	NA	NA	NA	NA	NA	ND
8/4/10	Lawrence	SLE3	9:30	concrete	3'		sharp punge	none	clear	nks of bac	1230	275	NA	~0.1	NA	NA	NA	NA	NA	ND
8/4/10	Lawrence	Shaw01	9:50	Open stre	NA	NA	none	l sheen, slight tea		leaves	208	86	NA	~0.1	NA	NA	NA	NA	NA	ND

E. coli - color key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, Black < 235 col/100ml

Entero - color key: Red ≥ 1000 col/100ml, Orange ≥ 350 Yellow ≥ 61 col/100ml, Black < 61 col/100ml

NH3 - color key: Red ≥ 6 mg/L, Orange ≥ 3 mg/L, Yellow ≥ 0.5 mg/L, Black < 0.5 mg/L

Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.25 mg/L, Black < 0.25 mg/L *** may give false positive at salinity greater than 1 ppt

Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yellow ≥ 0.02 mg/L, Black < 0.02 mg/L

Fluoride - color key: Red ≥ 2.0 mg/L, Orange ≥ 1.0 mg/L, Yellow ≥ 0.5 mg/L, Black < 0.5 mg/L

Potassium - Red ≥ 20.0 mg/L, Orange ≥ 10 mg/L, Yellow ≥ 6 mg/L, Black < 6 mg/L

REPORTING LIMITS

E. coli = 4 MPN/100mL
Enterococcus = 10 MPN/100mL
Surfactants Alpha = 0.05 mg/L (Except where otherwise noted)
Surfactants Field = 0.1 mg/L
Surfactant DR-850 = 0.02 mg/L
Ammonia (Alpha) = 0.075 mg/L
Ammonia Field = 0.1 mg/L
Ammonia Nessler = 0.2 mg/L
Ammonia DR-850 = 0.08 mg/L
Ammonia Test Strip = 0.1 mg/L

Total Phosphorus = 5 ug/L
CL2 (Total Residual) = 0.02 mg/L
CL2 (Residual Free) = 0.05 mg/L
CL2 Field = 0.02 mg/L
CL2 Test Strip =
Flouride Alpha= 0.20 mg/L
Flouride DR-850 = 0.05 mg/L (Except where otherwise noted)
Potassium = 2.5 mg/L
Potassium Field = 0.2 mg/L
Nitrogen, Nitrate/Nitrite = 0.10 mg/l

ND – not detected above the associated detection limit
NA – not applicable (analyte not tested for at that site at this time)
(~) – data reported as estimate

																		Coordi
P	PPCP ng/L									Cl2 (mg/l)				Flouride		Potassium (mg/L)		
EPA (µg/L)	Atenolol	Acetaminophen	Cotinine	1,7 Dimethylxanthine	Caffeine	Azithromycin	Primidone	Urobilin	Carbamazepine	Alpha Free	Alpha Total	Field	Test St.	Alpha	DR-850	Alpha	Field	GPS North(+)
9	ND (2.1)	11	ND (0.4)	ND (2.1)	17	ND (0.4)	ND (4.2)	82	6.3	ND	ND	0.11	ND	ND	0.14	5.5	2.35	42.695971
22	ND (2.0)	11	ND (0.4)	~2.5	20	ND (0.4)	ND (4.0)	64	6.1	ND	ND	0.09	ND	ND	0.1	5.8	2.30	42.695971
421	~310	6900	~1.6	~5600	5500	6.3	ND (4.0)	28000	2.4	ND	ND	0.04	ND	0.22	0.32	28	34.90	42.70991636
	920	8800	86	1800	12000	34	nd	79000	ND (0.5)									
NA	ND (4.0)	7.5	16	5.3	51	ND (0.8)	ND (8.0)	ND (8.0)	3.3	NA	NA	ND	ND	NA	NA	NA	3	42.70688
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	2.35	42.70688
NA	ND (4.0)	28	78	24	400	ND (0.8)	ND (8.0)	130	3.5	NA	NA	0.04	ND	NA	NA	NA	1.25	42.70688
NA	ND (5.0)	24	49	18	310	ND (1.0)	ND (10.0)	130	3	NA	NA	0.04	ND	NA	NA	NA	1.65	42.70688
NA	ND (2.5)	ND (2.5)	35	6	130	3.3	ND (5.0)	38	4.8	NA	NA	0.15	ND	NA	NA	NA	NA	42.70991636
12	ND (2.5)	ND (2.5)	3.7	ND (2.5)	54	ND (0.5)	ND (5.0)	ND (5.0)	ND (0.5)	NA	NA	0.04	ND	NA	NA	NA	NA	42.70991636
21	ND (2.0)	3	12	17	65	ND (0.4)	ND (4.0)	32	1.7	NA	NA	0.06	ND	NA	NA	NA	NA	42.70995636
6.3	ND (2.0)	ND (2.0)	10	6.6	26	ND (0.4)	ND (4.0)	ND (4.0)	1.5	NA	NA	0.07	ND	NA	NA	NA	NA	42.713273
24	ND (2.0)	ND (2.0)	9.3	4.7	32	ND (0.4)	ND (4.0)	ND (4.0)	1.2	NA	NA	0.03	ND	NA	NA	NA	NA	42.713893
52	5.8	22	2.3	15	150	ND (0.4)	ND (4.0)	18	2.6	NA	NA	0.05	ND	NA	NA	NA	NA	42.70688
23	ND (2.0)	ND (2.0)	6.3	12	45	ND (0.4)	ND (4.0)	5.1	2.1	NA	NA	0.04	ND	NA	NA	NA	NA	42.696984

nates			YSI Meter				Weather		
			Salinity	Temp	Cond uctivit	Rain Gauge	24hr s	48hrs	Wet/Dry ?
GPS West (-)	Comments	Additional Location Information	ppt	C	uS	Location	inche	inches	
-71.1455601	stream scoured, lots c	South Lawrence Elem	0.6	15.1	1158	Lawrence	0.01	0.01	Dry
-71.1455601	duplicate of SLE3		na	na	na	Lawrence	0.01	0.01	Dry
-71.15129912	video taken of what lo	pipe off Lawrence Hos	0.4	19.1	888	Lawrence	0.01	0.01	Dry
-71.1476552	SLE3a' significant whi	South Lawrence Elem	0.5	14.6	045/83	Lawrence	0.04	0.04	Dry
-71.1476552	significant white/tan/g	South Lawrence Elem	na	na	na	Lawrence	0.04	0.04	Dry
-71.1476552	SLE3b' Nitrate: 2. Nitr	South Lawrence Elem	0.5	14.83	984/790	Lawrence	0.04	0.04	Dry
-71.1476552	SLEc' Lawrence DPW	South Lawrence Elem	0.5	14.7	957/747	Lawrence	0.04	0.04	Dry
-71.15129912	samples sent for PCR	pipe off Lawrence Hos	0.1	18.8	12.18/1	Lawrence	0.04	0.04	Dry
-71.15129912	samples sent for PCR	pipe off Lawrence Hos	1.4	20.1	2644	Lawrence	0	0	Dry
-71.15139912	mainstem Spickett riv	lots of growth on botto	0.3	22.6	535	Lawrence	0	0	Dry
-71.158219	upstream of Jackson	heavy sedimentation o	0.3	23.1	530	Lawrence	0	0	Dry
-71.172624	mainstem Spickett riv	sampled at the end of	0.3	23.2	529	Lawrence	0	0	Dry
-71.1476552	significant white/tan/g	South Lawrence Elem	0.6	15.6	1120	Lawrence	0	0	Dry
-71.143777	Mainstem Shawsheen river sample		na	na	na	Lawrence	0	0	Dry

RARE Stormwater Outfall Inspection & Sampling Summary

Location				Outfall		Inspection										
													Surfact. (mg/l)			
Date	Town	Site Name	Time	Pipe Mat.	Dia. (in)	Est. Flow (gpm)	Odor	Color	Turbidity	Floatables	E.coli (MPN/100ml)	Entero (MPN/100ml)	Alpha	Field	DR-850	Alpha
6/23/08	Melrose	Otis	8:50								3266	NA	0.09	NA	NA	0.77
6/23/08	Winchester	62Sun	9:30								533	NA	ND	NA	NA	ND
6/23/08	Woburn	1Merrell	10:00	open stream	na	stream					2069	NA	0.10	NA	NA	0.76
6/23/08	Woburn	1Kraft	10:17								5654	NA	0.27	NA	NA	ND
6/23/08	Woburn	2Merrell	10:23								2190	NA	0.08	NA	NA	0.41
6/23/08	Stoneham	100A	11:00	open stream	na	stream					14400	NA	0.19	NA	NA	ND
6/23/08	Stoneham	1Linden	11:16								6932	NA	0.20	NA	NA	ND
6/23/08	Stoneham	1West	11:42	stone	2x3						14100	NA	0.29	NA	NA	0.410
6/23/08	Stoneham	2dLinden	12:02	open stream	na	stream					13700	NA	0.30	NA	NA	ND
6/23/08	Stoneham	2Linden	12:02	open stream	na	stream					9600	NA	0.32	NA	NA	ND
6/30/08	Methuen	Mer1	8:43								1162	1495 Fecal	0.05	NA	NA	ND
6/30/08	Salem, NH	Mer2	9:06	open stream	na	stream					288	694 Fecal	0.05	NA	NA	ND
6/30/08	Salem, NH	Mer3	9:35	open stream	na	stream					590	590 Fecal	0.07	NA	NA	ND
6/30/08	Salem, NH	Mer4	10:00								580	590 Fecal	0.06	NA	NA	ND
6/30/08	Salem, NH	Mer4d	10:00								631	811 Fecal	0.07	NA	NA	ND
6/30/08	Salem, NH	Mer5	10:27	open stream	na	stream					883	739 Fecal	0.06	NA	NA	ND
6/30/08	Salem, NH	Mer6A	10:55								802	847 Fecal	0.07	NA	NA	ND
6/30/08	Salem, NH	Mer6	11:05								775	955 Fecal	0.07	NA	NA	ND
6/30/08	Salem, NH	Mer7	11:30	CM	3-4 ft						775	955 Fecal	0.05	NA	NA	ND
6/30/08	Salem, NH	Mer8	11:51	open stream	na	stream					568	649 Fecal	0.05	NA	NA	ND
7/10/08	Woburn	Mys01	8:15	open stream	na	stream					7945	NA	0.09	NA	NA	2.37
7/10/08	Woburn	Mys02	8:45								1230	NA	0.08	NA	NA	3.70
7/10/08	Woburn	Mys03	9:11								6932	NA	0.08	NA	NA	ND
7/10/08	Woburn	Mys04	9:20								5199	NA	0.10	NA	NA	0.50
7/10/08	Woburn	Mys05	9:38								239	NA	ND	NA	NA	ND
7/10/08	Woburn	Mys06	9:56								2452	NA	0.08	NA	NA	0.73
7/10/08	Woburn	Mys07	10:18	open stream	na	stream					27230	NA	0.07	NA	NA	4.29
7/10/08	Woburn	Mys08	10:30	open stream	na	stream					41060	NA	0.06	NA	NA	4.57
7/10/08	Woburn	Mys8d	10:30	open stream	na	stream					41060	NA	0.06	NA	NA	4.52
7/10/08	Woburn	Mys09	10:45	open stream	na	stream					1549	NA	0.06	NA	NA	4.93
7/10/08	Woburn	Mys10	11:13								2452	NA	0.06	NA	NA	1.25
7/15/08	Stoneham	1West	7:57	stone	2x3						3266	NA	0.05	NA	NA	ND
7/15/08	Stoneham	2Linden	8:15	open stream	na	stream					689	NA	0.05	NA	NA	ND
7/15/08	Stoneham	2Lincul	8:20	clay	8"						430	NA	0.06	NA	NA	ND
7/15/08	Woburn	WashC	8:55								316	NA	0.07	NA	NA	1.32
7/15/08	Woburn	Burb	9:08								599	NA	0.06	NA	NA	ND
7/15/08	Woburn	Aber	9:20								408	NA	0.06	NA	NA	ND
7/15/08	Woburn	Sal	9:40								430	NA	0.09	NA	NA	1.84
7/15/08	Woburn	US1	9:55								125	NA	0.07	NA	NA	ND
7/15/08	Woburn	US2	10:05								740	NA	1.60	NA	NA	ND
7/15/08	Woburn	Olym	10:35								606	NA	0.09	NA	NA	ND
7/15/08	Woburn	Fit	10:55								152	NA	0.09	NA	NA	3.91
7/15/08	Woburn	Fitd	10:55								152	NA	0.08	NA	NA	3.94
7/15/08	Woburn	Mys01	11:15	open stream	na	stream					164	NA	0.08	NA	NA	3.46
7/21/08	Boston	Con	7:55								54750	NA	0.09	NA	NA	ND
7/21/08	Boston	Bos014	8:10								3266	NA	0.08	NA	NA	ND
7/21/08	Revere	Hadd	9:00								612	NA	0.15	NA	NA	ND
7/21/08	Chelsea	Mill1	9:35								9330	NA	0.18	NA	NA	ND
7/21/08	Chelsea	Mill2	9:55	concrete	~30 inches						9678	NA	0.18	NA	NA	1.33
7/21/08	Chelsea	Mill3	10:10								15530	NA	0.09	NA	NA	ND
7/21/08	Chelsea	Rev06	10:30								7945	NA	0.08	NA	NA	ND
7/21/08	Chelsea	Mill4	10:35								3266	NA	0.11	NA	NA	ND
7/21/08	Chelsea	IsEnd01	11:20								2595	NA	0.08	NA	NA	ND
7/21/08	Chelsea	IsEnd02	11:25	CM, semi-round	7'						3080	NA	0.19	NA	NA	ND
7/21/08	Chelsea	IsEnd04	11:30								>241960	NA	0.14	NA	NA	13.0
7/21/08	Chelsea	IsEnd04d	11:30								>241960	NA	0.15	NA	NA	13.5
7/21/08	Medford	Mhb	12:30								7945	NA	0.06	NA	NA	ND
7/21/08	Medford	Mhb2	12:40								9678	NA	NA	NA	NA	NA
7/28/08	Winchester	M01	7:35								2452	NA	0.09	NA	NA	ND
7/28/08	Winchester	M02	7:58								4813	NA	0.09	NA	NA	ND
7/28/08	Winchester	M03	8:14								3683	NA	0.09	NA	NA	ND
7/28/08	Winchester	M04	8:31								156	NA	0.07	NA	NA	ND
7/28/08	Winchester	M05	8:42								126	NA	0.06	NA	NA	ND
7/28/08	Winchester	M06	9:10								44	NA	0.06	NA	NA	ND
7/28/08	Winchester	M07	9:26								4813	NA	0.08	NA	NA	ND
7/28/08	Winchester	M08	9:40								64	NA	0.07	NA	NA	3.11
7/28/08	Winchester	M09	9:55								6212	NA	0.07	NA	NA	ND
7/28/08	Winchester	M10	10:16								5654	NA	0.06	NA	NA	ND
7/28/08	Winchester	M10a	10:30								162	NA	0.07	NA	NA	ND
7/28/08	Winchester	M11	10:48								241	NA	0.07	NA	NA	ND
7/28/08	Winchester	M11d	10:48								248	NA	0.09	NA	NA	ND
7/28/08	Winchester	M12	11:35								6932	NA	0.05	NA	NA	ND
7/28/08	Winchester	M13	12:31								248	NA	NA	NA	NA	NA
8/4/08	Lawrence	SP01	7:16								458	NA	0.08	NA	NA	ND
8/4/08	Lawrence	SP02	7:40								445	NA	0.08	NA	NA	ND
8/4/08	Lawrence	SP03	8:00								395	NA	0.07	NA	NA	ND
8/4/08	Lawrence	SP04	8:23								12	NA	0.24	NA	NA	ND
8/4/08	Lawrence	SP05	8:35								363	NA	0.07	NA	NA	ND
8/4/08	Methuen	SP06	9:05								342	NA	0.08	NA	NA	ND

8/4/08	Methuen	SP07	9:55								12	NA	0.05	NA	NA	ND
8/4/08	Methuen	Mer1	10:45								293	NA	0.07	NA	NA	ND
8/4/08	Salem, NH	SP08	11:43								464	NA	0.07	NA	NA	0.108
8/4/08	Salem, NH	SP08d	11:43								847	NA	0.07	NA	NA	ND
8/4/08	Salem, NH	Mer2	12:02	open stream	na	stream					302	NA	0.07	NA	NA	ND
8/12/08	Stoneham	2Linden	7:18	open stream	na	stream					8800	NA	0.14	NA	NA	0.37
8/12/08	Stoneham	1West	7:29	stone	2x3						4813	NA	NA	NA	NA	0.18
8/12/08	Woburn	US3	7:53	stone	~16inches	na					>241960	NA	0.18	NA	NA	0.14
8/12/08	Woburn	US4	8:03	CM	~24 inches	na					198630	NA	0.17	NA	NA	0.12
8/12/08	Woburn	Mys01	8:35	open stream	na	stream					3922	NA	NA	NA	NA	NA
8/12/08	Woburn	Mys07	8:46	open stream	na	stream					111990	NA	NA	NA	NA	NA
8/12/08	Woburn	Mys08	8:47	open stream	na	stream					1954	NA	0.06	NA	NA	16.40
8/12/08	Woburn	Mys8d	8:47	open stream	na	stream					1954	NA	0.05	NA	NA	16.90
8/12/08	Woburn	Mys81	9:10	open stream	na	stream					992	NA	0.06	NA	NA	15.10
8/12/08	Woburn	Mys 9	9:15								445	NA	NA	NA	NA	NA
8/12/08	Woburn	Mys72	9:45	open stream	na	stream					32550	NA	0.08	NA	NA	3.30
8/12/08	Woburn	Mys71	9:50	open stream	na	stream					57940	NA	0.16	NA	NA	106.00
8/12/08	Woburn	Mys10	10:00								4480	NA	NA	NA	NA	NA
8/12/08	Woburn	Olym1	10:45	open stream	na	stream					3922	NA	0.12	NA	NA	0.26
8/13/08	Methuen	MSPCA1	9:00								80	NA	NA	NA	NA	ND
8/13/08	Methuen	MSPCA3	9:30								81	NA	NA	NA	NA	ND
8/13/08	Methuen	MSPCA4	9:40								54	NA	NA	NA	NA	ND
8/13/08	Methuen	MSPCA5	9:55								136	NA	NA	NA	NA	ND
8/13/08	Methuen	MSPCA6	10:30								58	NA	NA	NA	NA	ND
8/13/08	Methuen	MSPCA7	10:40								20	NA	NA	NA	NA	ND
8/21/08	Revere	LinB	7:55								2190	NA	0.07	NA	NA	0.27
8/21/08	Revere	Rt1trib	8:10								351	NA	0.07	NA	NA	0.14
8/21/08	Revere	TLB1	8:25								3266	NA	0.08	NA	NA	0.30
8/21/08	Malden	TLB2	8:47								312	NA	0.10	NA	NA	1.44
8/21/08	Revere	trifone	9:20								14010	NA	0.06	NA	NA	0.11
8/21/08	Chelsea	Mill3	9:55								1844	NA	0.07	NA	NA	0.27
8/21/08	Chelsea	Mill3A	10:04								271	NA	0.06	NA	NA	ND
8/21/08	Chelsea	IsEnd04	10:35								2595	NA	ND	NA	NA	2.68
8/21/08	Everett	IsEnd03A	10:45								11870	NA	0.11	NA	NA	0.82
8/21/08	Everett	IsEnd03B	10:50								3266	NA	0.08	NA	NA	1.17
8/21/08	Everett	Floyd	11:15								48	NA	0.05	NA	NA	0.11
8/21/08	Everett	AF1	11:56								138	NA	0.14	NA	NA	0.41
8/21/08	Medford	Tufts	12:09								91	NA	0.06	NA	NA	0.19
8/25/08	Melrose	Mal1	7:53								774	NA	0.06	NA	NA	0.12
8/25/08	Melrose	OM2	8:15								25	NA	0.16	NA	NA	1.18
8/25/08	Melrose	OM1	8:20								80	NA	0.13	NA	NA	0.14
8/25/08	Melrose	OM3	8:25								12	NA	ND	NA	NA	ND
8/25/08	Melrose	Mal2	9:08								749	NA	0.06	NA	NA	0.10
8/25/08	Melrose	Mal3	10:15								1462	NA	0.06	NA	NA	0.11
8/25/08	Melrose	SP1	10:45								186	NA	ND	NA	NA	0.15
8/25/08	Melrose	Ell1	11:15								1741	NA	0.53	NA	NA	ND
8/25/08	Melrose	Ell1d	11:15								1462	NA	0.21	NA	NA	ND
8/25/08	Melrose	Ell2	11:20								716	NA	0.20	NA	NA	ND
8/25/08	Melrose	Ell3	11:35								23820	NA	0.07	NA	NA	0.09
8/25/08	Melrose	Otis	11:52								96	NA	0.33	NA	NA	ND
8/25/08	Melrose	Roo1	12:12								9678	NA	0.08	NA	NA	0.13
8/25/08	Winchester	M07	12:55								806	NA	0.07	NA	NA	0.24
9/4/08	Medford	WB01	7:08								6212	NA	0.07	NA	NA	0.40
9/4/08	Medford	Ship01	7:42								4	NA	ND	NA	NA	0.49
9/4/08	Medford	Kohl01	8:40								68	NA	0.09	NA	NA	0.50
9/4/08	Everett	IsEnd03A	9:57								86640	NA	0.11	NA	NA	1.03
9/4/08	Everett	IsEnd03B	9:58								9678	NA	0.09	NA	NA	0.56
9/4/08	Chelsea	Mill1A	10:52								406	NA	0.13	NA	NA	0.78
9/4/08	Chelsea	Mill	11:00								7945	NA	0.08	NA	NA	ND
9/4/08	Chelsea	Mill2	11:20	concrete	~30 inches						38	NA	0.24	NA	NA	4.12
9/4/08	Chelsea	Mill2d	11:20								54	NA	0.22	NA	NA	4.01
9/4/08	Winchester	M08A	12:15								408	NA	0.25	NA	NA	0.994
9/11/08	Watertown	Saw1	8:08								395	NA	0.09	NA	NA	ND
9/11/08	Watertown	Saw2	9:04								416	NA	0.09	NA	NA	ND
9/11/08	Watertown	LB1	9:41								2190	NA	0.05	NA	NA	ND
9/11/08	Watertown	Wat5	10:25	concrete	4'						222	NA	0.08	NA	NA	ND
9/11/08	Watertown	Wat6	10:27	concrete	5'						260	NA	0.12	NA	NA	ND
9/11/08	Waltham	Wal23	11:10								4185	NA	0.09	NA	NA	ND
9/11/08	Waltham	Pars	12:01								714	NA	0.07	NA	NA	ND
9/11/08	Waltham	BB1	12:05								2595	NA	0.12	NA	NA	ND
9/11/08	Waltham	CB1	12:59								310	NA	0.09	NA	NA	ND
9/11/08	Waltham	CB1d	12:59								319	NA	0.11	NA	NA	ND
9/11/08	Waltham	1st	13:28								455	NA	0.14	NA	NA	ND
9/15/08	Winchester	MO8	7:35								7945	NA	0.08	NA	NA	0.615
9/15/08	Winchester	MO8main	7:40								5654	NA	0.08	NA	NA	0.876
9/15/08	Winchester	MO5	8:00								373	NA	0.07	NA	NA	ND
9/15/08	Winchester	M12	8:25								7945	NA	0.09	NA	NA	0.63
9/15/08	Woburn	1Merrell	8:40	open stream	na	stream					6212	NA	0.08	NA	NA	0.776
9/15/08	Woburn	1Kraft	8:50								767	NA	0.09	NA	NA	ND
9/15/08	Woburn	McDO1	9:20								5654	NA	0.09	NA	NA	1.02
9/15/08	Stoneham	100A	9:42	open stream	na	stream					1642	NA	0.07	NA	NA	ND
9/15/08	Stoneham	1Linden	9:54								1549	NA	0.06	NA	NA	ND
9/15/08	Stoneham	1Lindend	9:54								1844	NA	0.05	NA	NA	ND
9/15/08	Woburn	US3	10:38	stone	~16inches	na					7945	NA	0.08	NA	NA	ND
9/15/08	Woburn	US4	10:41	CM	~24 inches	na					1164	NA	0.09	NA	NA	ND
9/15/08	Woburn	US5	10:47	open stream	na	stream					2595	NA	0.07	NA	NA	ND

9/15/08	Woburn	Olym2	11:20								568	NA	0.08	NA	NA	ND
9/15/08	Woburn	Olym1	11:31	open stream	na	stream					258	NA	0.08	NA	NA	ND
9/22/08	Woburn	US3	7:14	stone	~16inches	na					1140	NA	0.07	NA	NA	0.132
9/22/08	Woburn	US5	7:24	open stream	na	stream					1102	NA	0.08	NA	NA	0.109
9/22/08	Woburn	Olym2	7:46								1549	NA	0.09	NA	NA	0.196
9/22/08	Woburn	Mys07	8:09	open stream	na	stream					3080	NA	0.06	NA	NA	6.22
9/22/08	Woburn	Mys72	8:51	open stream	na	stream					395	NA	0.07	NA	NA	4.45
9/22/08	Woburn	Mys71	9:00	open stream	na	stream					3466	NA	0.18	NA	NA	124
9/22/08	Stoneham	2dLinden	9:56	open stream	na	stream					3266	NA	0.06	NA	NA	0.098
9/22/08	Stoneham	2Linden	9:56	open stream	na	stream					2747	NA	0.07	NA	NA	0.217
9/22/08	Stoneham	2Lincul	10:10	clay	8"						9678	NA	0.06	NA	NA	0.078
9/22/08	Stoneham	1West	10:45	stone	2x3						54750	NA	0.05	NA	NA	ND
9/22/08	Everett	IsEnd03A	11:40								6932	NA	0.14	NA	NA	0.542
9/22/08	Everett	IsEnd03B	11:42								1164	NA	0.11	NA	NA	0.48
5/13/09	Medford	MHB	8:07	CM			None	None	Clear	None	455	NA	NA	0.10	NA	NA
5/13/09	Medford	MHB2	8:07	CM	24	5-10	None	Yellowish	Light	None	117	NA	NA	ND	NA	NA
5/13/09	Somerville	MysRR	8:39				None	None	Clear	None	39	NA	NA	0.10	NA	NA
5/13/09	Somerville	SOM004	9:29	clay	12	trickle	None	None	Clear	None	39	NA	NA	0.10	NA	NA
5/13/09	Somerville	MWRA205	10:07	CM	4x4 box	me in, some	None	Murky	Light	None	NA	10462	NA	1.80	NA	NA
5/13/09	Winchester	Swan1	11:11	metal	12	50	None	None	Clear	None	98	NA	NA	0.08	NA	NA
5/13/09	Winchester	Swan03	11:19	metal	12		None	None	Clear	None	ND	NA	NA	ND	NA	NA
5/13/09	Stoneham	1West	11:45	stone	2x3		None	None	Clear	None	913	NA	NA	0.10	NA	NA
5/13/09	Stoneham	2Linden	12:05	open stream	na	stream	None	None	Clear	None	2190	NA	NA	0.20	NA	NA
5/13/09	Stoneham	Toms	12:27	tal w/asphalt bot	3'	20-30	None	None	Clear	None	242	NA	NA	0.10	NA	NA
5/13/09	Stoneham	Tomsd	12:27	tal w/asphalt bot	3'	20-30	None	None	Clear	None	186	NA	NA	NA	NA	NA
5/13/09	Stoneham	BearH	12:45	?	6	10-15	None	None	Clear	None	21	NA	NA	0.05	NA	NA
5/19/09	Woburn	Comm1	7:57	open stream	na	stream	none	tea	none	few	82	~20	0.07	0.2	NA	0.174
5/19/09	Woburn	Halls2	8:51	open stream	na	stream	none	light tea	none	None	606	~146	0.06	~0.1	NA	0.161
5/19/09	Woburn	DRR1	9:33	open stream	na	/2 that of halls	none	light tea	cloudy	None	626	~171	~0.05	~0.1	NA	8.50
5/19/09	Woburn	Mys07	10:01	open stream	na	stream	none	tea	heavy	None	518	~63	0.06	~0.1	NA	4.88
5/19/09	Woburn	Mys08	10:20	open stream	na	stream	none	med tea	none	None	~4	~10	~0.05	~0.1	NA	15.80
5/19/09	Woburn	Mys08d	10:20	open stream	na	stream	none	med tea	none	None	12	ND	~0.05	~0.1	NA	15.50
5/20/09	Woburn	Mys01	7:36	open stream	na	low flow	None	None	Clear	None	~250	NA	NA	0.10	NA	NA
5/20/09	Woburn	Mys01a	8:05	CM	18-24	15-20	None	None	Clear	None	458	NA	NA	0.25	NA	NA
5/20/09	Woburn	DRR1	8:35	open stream	na	stream	None	lightly cloud	Clear	None	126	NA	NA	0.10	NA	NA
5/20/09	Woburn	Halls2	8:35	open stream	na	stream	None	None	Clear	None	406	NA	NA	0.10	NA	NA
5/20/09	Woburn	Mys78	9:06	open stream	na	stream	None	None	Clear	None	160	NA	NA	0.10	NA	NA
5/20/09	Woburn	Comm1	9:30	open stream	na	stream	None	None	Clear	None	68	NA	NA	0.05	NA	NA
5/20/09	Woburn	Comm2	9:30	CM	3x6 box	50-100	ong petrole	None	Clear	None	442	NA	NA	0.10	NA	NA
5/20/09	Reading	WestS	10:15	CM	30	10-15	None	tea	Clear	None	8	NA	NA	NA	NA	NA
5/20/09	Reading	WestW	10:15	CM	5 foot		slight musty	tea	Clear	some suds	52	NA	NA	NA	NA	NA
5/20/09	Reading	Ivale	10:37	open stream	na	stream	None	None	Clear	Some	155	NA	NA	0.15	NA	NA
5/20/09	Reading	Birch	11:06	stone	5x3 ft		None	light tea	Clear	None	1379	NA	NA	0.05	NA	NA
5/20/09	Reading	BirchD	11:06	stone	5x3 ft		None	light tea	Clear	None	1642	NA	NA	0.05	NA	NA
5/20/09	Reading	RHSN	11:32	CM	24		None	None	Clear	None	52	NA	NA	0.20	NA	NA
5/20/09	Reading	RRR1	12:03	CM	4x4 box		None	None	Clear	None	621	NA	NA	NA	NA	NA
5/26/09	Somerville	MWRA205	7:57	CM	4x4 box	na	none	light tea	none	None	77010	1989	0.22	2	NA	1.93
5/26/09	Chelsea	Mill2	10:06	concrete	~30 inches	5-10gal/min	strong odor	clear	none	some suds	44	20	0.19	1.5	NA	4.31
5/26/09	Chelsea	Mill2B	10:45	CM	~24 inches	1-2gal/min	strong odor	ay/black clou	med	None	100	ND	0.21	1	NA	4.92
5/26/09	Chelsea	Mill2A	11:10	CM	~24 inches	1 gal/min	none	clear	none	None	~4	ND	0.39	1	NA	7.02
5/26/09	Stoneham	SPB0	12:50	open stream	na	stream	none	clear	none	None	21	31	ND	ND	NA	ND
5/26/09	Stoneham	SPB0d	12:50	open stream	na	stream	none	clear	none	None	16	~10	~0.05	ND	NA	ND
5/27/09	Quincy	WollB1	7:58	CM	4x4 box	50-100	sewage odo	None	Clear	Some suds	NA	~12997	NA	1.00	NA	NA
5/27/09	Quincy	WollB2	8:20		18 feet		None	None	Clear	None	NA	~19863	NA	3.00	NA	NA
5/27/09	Quincy	WollB3	8:40	open stream	na	stream	None	None	Clear	None	~2190	NA	NA	0.25	NA	NA
5/27/09	Quincy	WollB4	8:52	open stream	na	stream	None	None	Clear	None	~1045	NA	NA	0.20	NA	NA
5/27/09	Quincy	SAG1	9:15	cement	10x10box		None	tea	cloudy	Yes	~6212	NA	NA	1.00	NA	NA
5/27/09	Boston	Bos090	9:42	CM	10x10box		strong petrole	light tea	very cloudy	None	NA	~1725	NA	1.80	NA	NA
5/27/09	Boston	Bos090d	9:42	CM	10x10box		strong petrole	light tea	very cloudy	None	NA	~10462	NA	NA	NA	NA
5/27/09	Dorcester	Ten1	10:10	Pipe Mat.	24-30		slight petroleu	tan	very muddy	None	NA	~41	NA	1.20	NA	NA
5/27/09	Quincy	Holbel	11:14	CM	30		None	tea	Clear	None	~1741	NA	NA	0.25	NA	NA
5/27/09	Milton	CunPk	11:40	open stream	na	stream	None	light tea	Clear	None	~2908	NA	NA	0.10	NA	NA
5/27/09	Milton	Pine1	12:11	open stream	na	stream	None	tea	Clear	None	~308	NA	NA	0.05	NA	NA
6/2/09	Medford	MHB	7:25	CM	40	low	gas	lightly cloud	none	None	534	78	ND	~0.1	ND	0.2
6/2/09	Medford	MHBup	8:07	open stream	na	stream	none	clear	none	None	48	142	ND	ND	NA	0.086
6/2/09	Belmont	WinB	9:10	open stream	na	stream	none	clear	none	None	6212	2908	ND	0.2	NA	0.21
6/2/09	Belmont	WinBd	9:10	open stream	na	stream	none	clear	none	None	6212	2452	ND	0.2	0.024	0.172
6/2/09	Arlington	91Mys	10:20	open stream	na	stream	musty	cloudy	none	None	>241960	13734	1.3	1.25	0.665	1.53
6/2/09	Arlington	MillB	10:50	CM	10x15ft	na	musty	very cloudy	none	None	550	445	0.06	0.2	0.031	0.206
6/3/09	Methuen	SP06	7:38	open stream	na	stream	None	None	Clear	None	124	NA	NA	0.10	NA	NA
6/3/09	Methuen	SP07	8:10	open stream	na	stream	None	None	Clear	None	86	NA	NA	ND	NA	NA
6/3/09	Methuen	SP071	8:12	Pipe Mat.	12	30	None	None	Clear	None	ND	NA	NA	ND	NA	NA
6/3/09	Methuen	Mer1	8:57	open stream	na	stream	None	tea	very	None	58	NA	NA	0.10	NA	NA
6/3/09	Salem, NH	Mer2	9:22	open stream	na	stream	None	reddish	med	None	48	NA	NA	0.10	NA	NA
6/3/09	Salem, NH	Mer3	9:46	open stream	na	stream	None	tea	Clear	None	75	NA	NA	0.05	NA	NA
6/3/09	Salem, NH	Mer5	10:45	open stream	na	stream	None	tea	Clear	None	465	NA	NA	0.15	NA	NA
6/3/09	Salem, NH	Mer6a	11:13				None	tea	Clear	None	293	NA	NA	0.20	NA	NA
6/3/09	Salem, NH	Mer6b	11:20				None	light tea	Clear	None	142	NA	NA	0.25	NA	NA
6/3/09	Salem, NH	Mer7	11:46	CM	3-4 ft		None	light tea	Clear	None	166	NA	NA	0.05	NA	NA
6/3/09	Salem, NH	Mer7d	11:46	CM	3-4ft		None	light tea	Clear	None	114	NA	NA	NA	NA	NA
6/3/09	Salem, NH	Mer8	12:07	open stream	na	low flow	None	None	Clear	None	126	NA	NA	ND	NA	NA
6/3/09	Salem, NH	Mer8a	12:08	Pipe Mat.	12	5	strong	orange-ish	Clear	None	4	NA	NA	0.05	NA	NA
6/9/09	Quincy	WollB1	7:35	CM	4x4 box	50-100	thick musty	clear	none	some suds	420	1741	ND	1.5	ND	0.187
6/9/09	Quincy	WollB5	8:25	CM	16	10-15gal/min	none	clear	none	None	ND	ND	ND	0.2	0.046	0.624
6/9/09	Dorchester	Ten1	9:35	Pipe Mat.	24-30	na	none	tan	very, very	None	96	21	0.08	2	0.048	1.28
6/9/09	Boston	Bos090	9:57	CM	10x10 box	na	musty	tea/tan	some	None	54750	149	0.14	2	0.091	0.823

6/9/09	Dorchester	CantB	11:35	open stream	na	stream	husty/sewag	blue/grayish	some	None	198630	34658	1.6	1.5	1.03	4.66
6/9/09	Dorchester	CantBD	11:35	open stream	na	stream	husty/sewag	blue/grayish	some	None	173290	48392	1.5	1.5	1.05	4.75
6/10/09	Haverhill	Broad	8:30	open stream	na	stream	None	None	Clear	None	250	NA	NA	ND	NA	NA
6/10/09	Haverhill	Coffin	8:48	metal	24	60	None	None	Clear	None	30	NA	NA	ND	NA	NA
6/10/09	Groveland	Main1	9:17	open stream	na	stream	None	tea	Clear	None	112	NA	NA	0.15	NA	NA
6/10/09	Groveland	Main2	9:26	open stream	na	stream	None	None	Clear	None	84	NA	NA	ND	NA	NA
6/10/09	Haverhill	Wash1	10:30	metal	12	5-10gal/min	None	None	some suds	None	154	NA	NA	0.75	NA	NA
6/10/09	Haverhill	LR1	10:48	CM	15ft 1/2 circle		musty	tea/tan	light	None	953	NA	NA	0.20	NA	NA
6/10/09	Haverhill	LR2	11:30	open stream	na	stream	None	None	cloudy	None	318	NA	NA	ND	NA	NA
6/10/09	Haverhill	LR2D	11:30	open stream	na	stream	None	None	Clear	None	445	NA	NA	NA	NA	NA
6/10/09	Lawrence	Shaw1	12:30	open stream	na	stream	musty	tea	yes	None	353	NA	NA	0.05	NA	NA
6/10/09	Lawrence	SLE1	12:58	open stream	na	stream	None	light tea	Clear	None	251	NA	NA	0.10	NA	NA
6/10/09	Lawrence	SLE2	13:02	open stream	na	stream	None	light tea	Clear	None	328	NA	NA	0.05	NA	NA
6/10/09	Lawrence	SLE3	13:11	concrete	3'		strong musty o	None	Clear	None	616	NA	NA	0.10	NA	NA
6/16/09	Danvers	Fish004	7:55	open stream	na	stream	none	light tan	none	None	250	468	~0.05	0.2	0.028	ND
6/16/09	Danvers	Fish005	8:35	open stream	na	stream	none	clear	none	None	333	714	ND	~0.1	0.022	ND
6/16/09	Marblehead	Stram01	10:05	open stream	na	stream	none	very light tea	none	None	489	434	~0.05	ND	0.029	0.37
6/16/09	Marblehead	Stram02	10:40	open stream	na	stream	none	very light tea	none	None	494	452	~0.05	ND	0.04	0.193
6/16/09	Lynn	Stacey	11:25	CM	4'x8'	>100	musty	NS	none	None	>241960	22398	0.31	0.4	0.216	1.04
6/16/09	Lynn	StaceyD	11:25	CM	4'x8'	>100	musty	NS	none	None	>241960	24066	0.29	0.4	0.208	0.949
6/17/09	Peabody	Pro01	8:00	nnelized stream	15-20ft		none	None	Clear	None	80	NA	NA	ND	NA	NA
6/17/09	Peabody	Strong01	8:02	nnelized stream	3-4ft		None	None	Clear	None	242	NA	NA	ND	NA	NA
6/17/09	Peabody	Pro02A	8:20	open stream	na	stream	None	tea	Clear	None	142	NA	NA	0.10	NA	NA
6/17/09	Peabody	Pro02	8:30	nnelized stream	na		none	tea	some suds	None	30	NA	NA	0.10	NA	NA
6/17/09	Peabody	Strong02	8:55	culverted stream	na		NS	light tannin	NS	NS	568	NA	NA	ND	NA	NA
6/17/09	Salem	Der01P	9:35	Pipe	2-2.5ft	5-10	sewage odo	None	Clear	NS	NA	223	NA	1.50	NA	NA
6/17/09	Salem	NorR01P	10:05	Concrete pipe	2-3ft	5-10	ht, musty od	NS	low	NS	NA	4106	NA	1.80	NA	NA
6/17/09	Marblehead	GO01	10:56	cement	36in	50	None	None	Clear	None	471	NA	NA	0.10	NA	NA
6/17/09	Marblehead	GO02	11:03	open stream	na	stream	ht, musty od	None	Clear	None	542	NA	NA	0.20	NA	NA
6/17/09	Marblehead	GO03	11:15	open stream	na	stream	None	ght tea/orang	some suds	None	933	NA	NA	0.20	NA	NA
6/17/09	Lynn	StaceyS	12:11	CM	4'x8'		NS	None	Clear	None	NA	14136	NA	0.70	NA	NA
6/17/09	Swampscot	StaceyN	12:45	CM	4'x8'	40-50	musty sewa	NS	low	None	NA	ND	NA	0.50	NA	NA
6/17/09	Swampscot	StaceyND	12:45	CM	4'x8'	40-50	musty sewa	NS	low	None	NA	ND	NA	NA	NA	NA
7/14/09	Milton	UNB016	8:36	open stream	na	stream	none	clear	none	None	599	109	ND	~0.1	ND	0.304
7/14/09	Milton	UNB002	9:02	CM bridge	3'x6' box	na	none	clear	none	None	152	69	ND	~0.1	0.077	0.37
7/14/09	Quincy	WollB2	9:50	open stream	na	ery strong flo	none	tea	yes	None	265	~8	ND	2	0.029	0.094
7/14/09	Quincy	WollB1A	11:08	CM	3'x3' box	10-15gal/min	strong must	clear	none	he trash in w	3080	1844	ND	0.75	0.023	0.19
7/14/09	Quincy	UR001	11:27	CM	4x4 box	50-100	sulfur odor	clear	none	None	1741	5654	ND	NA	0.033	0.196
7/14/09	Quincy	WollB1	11:27	CM	4x4 box	50-100	sulfur odor	clear	none	None	2190	6932	~0.05	0.25	0.04	0.125
7/15/09	Winchester	UMLake1	7:50	open stream	na	stream	none	light tea	yes	none	~258	NA	NA	0.10	NA	NA
7/15/09	Winchester	Water1	8:02	open stream	na	stream	none	dark tea	cloudy	None	~410	NA	NA	0.13	NA	NA
7/15/09	Winchester	Swan1a	8:17	open stream	na	stream	none	light tea	Clear	None	~510	NA	NA	0.20	NA	NA
7/15/09	Winchester	Witt1	8:33	open stream	na	stream	none	light tea	Clear	None	~34	NA	NA	0.10	NA	NA
7/15/09	Woburn	1Merrell	8:55	open stream	na	stream	none	light tea	lightly turbi	None	~494	NA	NA	0.10	NA	NA
7/15/09	Woburn	Mys01bb	9:25	open stream	na	stream	None	None	Clear	None	~93	NA	NA	0.20	NA	NA
7/15/09	Woburn	Mys01a	9:35	CM	18-24	20-40	None	None	Clear	None	~12	NA	NA	0.40	NA	NA
7/15/09	Woburn	Halls2	9:50	open stream	na	stream	None	light tea	Clear	None	~448	NA	NA	0.10	NA	NA
7/15/09	Woburn	DRR1	9:52	open stream	na	stream	None	light tea	Clear	None	~268	NA	NA	0.10	NA	NA
7/15/09	Woburn	UR002	9:52	open stream	na	stream	None	light tea	Clear	None	NA	NA	NA	0.10	NA	NA
7/15/09	Reading	ArnoldA	11:00	open stream	na	stream	None	light tea	Clear	None	~1164	NA	NA	0.10	NA	NA
7/15/09	Reading	Birch	11:35	stone	5x3 ft		None	light tea	Clear	None	~125	NA	NA	0.20	NA	NA
7/15/09	Reading	RHSN	11:53	CM	24		None	light tea	Clear	ht scum on	~90	NA	NA	0.20	NA	NA
7/21/09	Stoneham	1West	9:20	stone	2x3	50-100	lightly must	clear	none	None	~64880	~2318	~0.28	0.6	0.148	0.117
7/21/09	Stoneham	2Linden	9:35	open stream	na	stream	none	light tea	none	None	~7945	~1302	~0.32	0.75	0.142	0.206
7/21/09	Stoneham	Elm1	10:10	open stream	na	40-50	lightly must	med tea	none	None	~51720	~5654	~0.12	0.3	0.083	0.578
7/21/09	Stoneham	Toms	10:30	tal w/asphalt bot	3'	50	lightly must	clear	none	None	~16070	~5818	~0.43	0.75	0.176	0.204
7/21/09	Stoneham	UR003	10:30	tal w/asphalt bot	3'	50	lightly must	clear	none	None	~2069	~924	~0.43	0.75	0.189	0.198
7/21/09	Stoneham	Toms	11:30	tal w/asphalt bot	3'	250-500	strong must	gray	cloudy	s, sticks, pa	~3080	~690	~0.08	0.6	0.169	0.193
7/22/09	Winchester	Russ1	7:55	Stone (instream)	4'X4'		slightly must	None	Clear	some suds*	1954	NA	NA	0.10	NA	NA
7/22/09	Winchester	HPB2	8:00	open stream	na	stream	None	light tea	cloudy	None	30	NA	NA	0.05	NA	NA
7/22/09	Woburn	OF119	8:25	rugated black pla	12"	5-6	sewage odo	None	Clear	None	875	NA	NA	0.20	NA	NA
7/22/09	Woburn	OF118	8:30	concrete	30"	30	musty	None	cloudy	some suds	2452	NA	NA	0.24	NA	NA
7/22/09	Woburn	UR004	8:30	large concrete		30	musty	None	cloudy	some suds	3466	NA	NA	NA	NA	NA
7/22/09	Woburn	OF119a	9:05	rugated black pla	12"	10	ht sewage o	None	Clear	None	146	NA	NA	0.15	NA	NA
7/22/09	Woburn	OF118up	9:28	metal	18"-20"	20	None	None	Clear	None	5199	NA	NA	0.30	NA	NA
7/22/09	Woburn	Cumming1	9:55	open stream	na	stream	None	light tea	Clear	e trash and o	650	NA	NA	0.15	NA	NA
7/22/09	Woburn	Cumming2	10:16	open stream	na	stream	None	med tea	Clear	e trash and o	542	NA	NA	0.10	NA	NA
7/22/09	Woburn	LB1	10:17	Concrete pipe	3'	30	None	None	Clear	None	688	NA	NA	0.10	NA	NA
7/22/09	Woburn	LB2	10:35	stone	2'x3'	60-75	None	light tea	Clear	None	396	NA	NA	0.20	NA	NA
7/22/09	Woburn	SGB1	10:50	cement	7'across		None	light tea	lightly turbi	None	566	NA	NA	0.10	NA	NA
7/22/09	Woburn	SGB2	11:10	stone	2'x2'	20-30	None	None	Clear	None	326	NA	NA	0.20	NA	NA
7/28/09	Chelsea	Mill2	8:05	concrete	~30 inches	15	sharp sewa	clear	none	None	310	12	0.23	0.8	0.126	3.84
7/28/09	Everett	IsEnd03A	9:05		open stream	na	odor; slight	ayish/yellow	none	None	9678	388	0.1	0.8	0.054	0.831
7/28/09	Chelsea	IsEnd02	9:25	CM, semi-round	7'		strong petroleum	tea/tan	cloudy	None	5654	122	0.16	0.6	0.068	0.252
7/28/09	Chelsea	IsEnd03	9:26	CM, semi-round	12'		strong petroleum	blue/grayish	cloudy	ome soap su	16740	368	0.09	1.5	0.055	1.76
7/28/09	Chelsea	UR005	9:26	CM, semi-round	12'		strong petroleum	blue/grayish	cloudy	ome soap su	15850	435	0.09	1.5	0.05	1.64
7/28/09	Somerville	MWRA205	11:08	CM	4x4 box		slight sewage o	gray/green	e suspende	None	9678	1211	0.24	1.2	0.154	2.65
7/29/09	Chelsea	Mill2	8:30	concrete	~30 inches	10	strong odor	clear	none	none	NA	52	NA	0.70	NA	NA
7/29/09	Chelsea	Mill2A	8:40			3	dor - chemi	None	none	None	NA	10	NA	0.75	NA	NA
7/29/09	Revere	SD08A	9:45	NS	NS	15-20	ht sewage o	NS	NS	None	NA	10	NA	0.60	NA	NA
7/29/09	Revere	SD10A	10:00	plastic	12"	3	ht sewage o	NS	NS	gnificant foa	NA	20	NA	0.25	NA	NA
7/29/09	Revere	WashN01	10:10	concrete	24		none	NS	NS	None	NA	2282	NA	0.75	NA	NA
7/29/09	Revere	SalesN	10:15	NS	NS		none	NS	NS	None	NA	295	NA	0.75	NA	NA
7/29/09	Revere	SalesE	10:25	NS	24"+		none	tan	y turbid; clo	None	NA	95	NA	0.70	NA	NA
7/29/09	Revere	Green01	11:11	NS	NS		slight musty	None	cloudy	None	NA	14136	NA	0.70	NA	NA
7/29/09	Revere	UR006	11:11	NS	NS		slight musty	None	cloudy	None	NA	14136	NA	NA	NA	NA

7/29/09	Revere	Wonder01	11:50	CM	4'		None	None	none	None	NA	185	NA	0.40	NA	NA
7/29/09	Revere	STRACC1	12:05	NS	NS		None	NS	NS	NS	NA	605	NA	0.40	NA	NA
7/29/09	Everett	IsEnd03B	12:40	NS	NS	20	slight musty	orange	very cloudy	None	NA	ND	NA	0.25	NA	NA
8/4/09	Winchester	Russ1	8:00	Stone (instream)	4'X4'	na	musty	grayish	ightly cloud	None	147	196	~0.05	0.2	0.025	0.108
8/4/09	Winchester	UR007	8:00	stone	3'x4' box	na	musty	grayish	ightly cloud	None	176	118	ND	0.2	0.028	ND
8/4/09	Woburn	US3	8:50	stone	~16inches	na	none	light tea	ightly cloud	None	587	140	~0.05	ND	0.029	0.14
8/4/09	Woburn	US4	8:55	CM	~24 inches	na	none	light tan	ightly cloud	None	806	222	~0.05	ND	0.026	0.167
8/4/09	Woburn	US5	9:05	open stream	na	stream	none	light tea	clear	None	542	184	ND	ND	0.032	0.133
8/4/09	Woburn	Olym1	9:55	open stream	na	stream	none	light tan	clear	None	2069	205	~0.05	0.2	0.02	0.076
8/5/09	Norwood	HABout01	7:38	CM	36in	30-40gal/min	None	light tannin	Clear	None	714	NA	NA	0.05	NA	NA
8/5/09	Norwood	HAB01	7:40	open stream	na	stream	None	None	Clear	None	92	NA	NA	ND	NA	NA
8/5/09	Norwood	HAB02	8:20	open stream	na	stream	None	heavy tea	Clear	some suds	25	NA	NA	0.05	NA	NA
8/5/09	Norwood	Htrib01	8:22	open stream	na	stream	None	light tea	Clear	None	445	NA	NA	0.10	NA	NA
8/5/09	Norwood	Htribout1	8:35	concrete	4'		None	None	ightly cloud	None	225	NA	NA	ND	NA	NA
8/5/09	Norwood	Htrib03	9:01	open stream	na	stream	None	light tea	Clear	None	818	NA	NA	ND	NA	NA
8/5/09	Norwood	Htrib03a	9:04	Concrete pipe	12"		None	None	ightly cloud	None	21	NA	NA	0.20	NA	NA
8/5/09	Norwood	Htrib04	9:14	open stream	na	stream	None	light tannin	Clear	None	714	NA	NA	0.10	NA	NA
8/5/09	Norwood	MB01	9:45	open stream	na	stream	None	None	Clear	some suds	740	NA	NA	0.25	NA	NA
8/5/09	Norwood	MB02	10:10	cement	4'		slight sewage c	None	ightly cloud	None	15760	NA	NA	0.25	NA	NA
8/5/09	Norwood	UR008	10:10	cement	4'		slight sewage c	None	ightly cloud	None	15650	NA	NA	0.25	NA	NA
8/5/09	Norwood	PB01	11:06	open stream	na	stream	None	light tea	Clear	None	953	NA	NA	0.10	NA	NA
8/5/09	Norwood	PB02	11:24		2-3ft	20	y and natur	None	Clear	None	4185	NA	NA	0.15	NA	NA
8/11/09	Quincy	Canal1	7:55	concrete	6'x8' box	na	slight musty	clear	none	None	1844	417	~0.05	0.15	0.038	0.22
8/11/09	Quincy	SAG1	8:25	concrete	10x10 box	na	slight musty	brown	very turbid	None	3922	1230	ND	2	0.025	0.4
8/11/09	Quincy	SAG2	8:50	ground seep		3-5	Strong sulfu	clear	none	None	ND	ND	NA	0.7	NA	NA
8/11/09	Quincy	WollB1B	9:40	concrete	3-4'	15	musty	clear	none	None	133	12	ND	2.2	ND	ND
8/11/09	Quincy	WollB1A	9:45	CM	3'x3' box	na	musty/sulfu	clear	none	None	437	161	ND	1.5	0.026	0.136
8/11/09	Quincy	UR009	10:25	concrete	4x4 box	30-40	Strong sulfu	mostly clear	none	None	489	363	ND	0.6	0.028	0.076
8/11/09	Quincy	WollB1	10:25	concrete	4x4 box	30-40	Strong sulfu	mostly clear	none	None	626	518	ND	0.7	0.024	ND
8/12/09	Milton	CunPk	8:05	open stream	na	stream	None	None	Clear	None	2069	NA	NA	0.20	NA	NA
8/12/09	Milton	CunPk02	8:12	cement	2, 2'	30	None	None	Clear	None	3466	NA	NA	0.30	NA	NA
8/12/09	Quincy	FBP02A	8:37	seep below pipe		3	None	None	Clear	None	12	NA	NA	0.20	NA	NA
8/12/09	Quincy	FBP02	8:40	open stream	na	stream	None	None	Clear	None	4813	NA	NA	0.20	NA	NA
8/12/09	Quincy	FBP03	9:10	cement	2, 3'		None	None	Clear	None	2069	NA	NA	0.10	NA	NA
8/12/09	Quincy	FBP04	9:20	k block w/ granite	5' x 5 box'		None	None	Clear	None	714	NA	NA	0.05	NA	NA
8/12/09	Quincy	Broad1	9:46	cement	3' x 3' box		Odor*	light brown	ightly cloud	some suds	NA	578	NA	1.50	NA	NA
8/12/09	Quincy	SAG1	10:20	cement	10x10box		petroleum od	very brown	y turbid; clo	some suds	NA	2359	NA	2.00	NA	NA
8/12/09	Quincy	SAG2	10:22	seep	na	3 gal/min	strong sulfu	None	Clear	None	NA	ND	NA	0.60	NA	NA
8/12/09	Quincy	WollB1A	10:50	CM	3'x3' box		musty/sulfur	gray	cloudy	None	NA	2755	NA	2.00	NA	NA
8/12/09	Quincy	WolB1B	10:52	cement	3-4 ft		slight musty/su	None	clear	None	NA	262	NA	2.00	NA	NA
8/12/09	Quincy	WollB1	11:00	CM	4x4 box		sulfur	None	Clear	None	NA	1720	NA	0.75	NA	NA
8/12/09	Quincy	Canal1	11:30	cement	6' x 8' box		None	None	Clear	None	2747	NA	NA	0.15	NA	NA
8/12/09	Quincy	UR010	11:30	cement	6' x 8' box		None	None	Clear	None	4185	NA	NA	0.10	NA	NA
8/18/09	Plymouth	Eel1	9:20	open stream	na	stream	none	light tan	clear	None	30	82	ND	ND	ND	ND
8/18/09	Plymouth	Eel2	9:30	open stream	na	stream	none	light tan	clear	None	70	82	ND	ND	ND	ND
8/18/09	Plymouth	UR011	9:30	open stream	na	stream	none	light tan	clear	None	140	82	ND	ND	ND	ND
8/18/09	Plymouth	Eel3	9:40	open stream	na	stream	none	light tan	clear	None	1741	452	ND	ND	ND	0.092
8/18/09	Plymouth	SandRd1	10:00	clay	16	4	none	light tan	clear	None	265	172	ND	~0.1	0.021	ND
8/18/09	Plymouth	SandRd2	11:40	clay	12	2	none	light tan	clear	None	373	61	NA	~0.1	NA	0.088
8/19/09	Lawrence	SPR01	7:55	open stream	na	stream	None	None	Clear	None	96	NA	NA	ND	NA	NA
8/19/09	Lawrence	SPR02	8:00	open stream	na	stream	musty	None	Clear	None	96	NA	NA	0.10	NA	NA
8/19/09	Lawrence	SPR03	8:10	open stream	na	stream	None	None	Clear	some suds*	319	NA	NA	0.10	NA	NA
8/19/09	Lawrence	SPR04	8:15	k from concrete pipe			None	None	Clear	None	ND	NA	NA	ND	NA	NA
8/19/09	Lawrence	SPR05	8:55	concrete	18"	10	light sewag	None	Clear	None	1741	NA	NA	0.25	NA	NA
8/19/09	Lawrence	Shaw01	9:40	cement	(3) 15' x 15'		None	med tea	cloudy	e suds and le	157	NA	NA	0.10	NA	NA
8/19/09	Lawrence	UR012	9:40	cement	(3) 15' x 15'		None	med tea	cloudy	e suds and le	174	NA	NA	NA	NA	NA
8/19/09	Lawrence	SLE3	10:20	concrete	3'		strong, musty sewa	None	Clear	None	34	NA	NA	0.20	NA	NA
8/19/09	Andover	Huss01	10:50	stone box	10' x 5'	na	None	light tea	Clear	None	2595	NA	NA	0.10	NA	NA
8/19/09	Andover	Bal01	11:11	concrete	12"		None	orange	Clear	None	ND	NA	NA	0.10	NA	NA
8/19/09	Andover	Bal02	11:15	concrete	12"		None	None	Clear	None	ND	NA	NA	0.20	NA	NA
8/19/09	Andover	York1	11:45	cement	3' x 3' box		None	None	Clear	None	16	NA	NA	ND	NA	NA
8/19/09	Andover	Plaza	12:15	cement	2.5'		None	None	Clear	None	8	NA	NA	0.10	NA	NA
8/25/09	Boston	Dent285	7:50	concrete	6 feet	50-75	usty/sewag	None	ightly cloud	None	33000	3683	0.22	0.4	0.133	0.4
8/25/09	Boston	Blueup	8:00	open stream	na	stream	none	tan	clear	None	226	64	~0.05	~0.1	0.028	ND
8/25/09	Boston	Mother	9:05	open stream	na	stream	none	light tea	clear	None	129	56	0.06	ND	0.046	ND
8/25/09	Boston	NR204	10:00	concrete	3 feet	15	g sewage/la	None	ightly cloud	hite/gray pa	>241960	>48392	8.7	>3	0.975	20.1
8/25/09	Boston	NR162	11:00	concrete	36 inches	3	ht sewage c	None	clear	None	198630	5226	0.89	3	0.6	13.2
8/25/09	Boston	UR013	11:00	concrete	36 inches	3	ht sewage c	None	clear	None	241960	5510	0.92	2.75	0.635	12.4
8/25/09	Boston	NR160	12:00	concrete	2'	3	musty	None	clear	None	1741	149	~0.05	0.25	0.023	0.598
8/25/09	Boston	Esp01	12:02	open stream	na	stream	none	tea	clear	None	241	58	0.07	~0.1	0.03	0.1
8/26/09	Milton	Milt01	8:10	open stream	na	stream	None	None	Clear	None	689	NA	NA	ND	NA	NA
8/26/09	Milton	Milt02	8:35	open stream	na	stream	None	None	Clear	None	407	NA	NA	ND	NA	NA
8/26/09	Boston	Milt03	8:36	concrete	18"	0.5	lightly must	None	Clear	None	32550	NA	NA	0.50	NA	NA
8/26/09	Boston	UR014	8:36	concrete	18"		slightly must	None	Clear	None	46110	NA	NA	0.50	NA	NA
8/26/09	Milton	Milt04	8:50	open stream	na	stream	None	light tea	Clear	some suds	302	NA	NA	0.05	NA	NA
8/26/09	Milton	Milt05A	9:15	clay tile	12"	5	None	None	Clear	None	132	NA	NA	ND	NA	NA
8/26/09	Milton	Milt05	9:20	open stream	na	stream	None	light tea	Clear	None	232	NA	NA	0.10	NA	NA
8/26/09	Boston	Bos5049	9:50	cement	24"	12	slight Cl2	None	Clear	None	ND	NA	NA	ND	NA	NA
8/26/09	Boston	NR285	10:40	cement	6'x4' semi-circle	30	g sewage/la	None	ightly cloud	Suds	9678	NA	NA	>3	NA	NA
8/26/09	Boston	MB03	12:00	open stream	na	stream	None	red/orange	cloudy	im on surfac	345	NA	NA	1.25	NA	NA
8/26/09	Boston	Mother01	12:05	open stream	na	stream	None	light tannin	Clear	None	80	NA	NA	ND	NA	NA
8/26/09	Boston	NR160	12:35	cement	2'	3	sewage odo	None	Clear	None	518	NA	NA	0.10	NA	NA
8/26/09	Boston	NR160A	12:40	cement	2'	5	None	None	Clear	some suds	113	NA	NA	ND	NA	NA
9/1/09	Woburn	Halls2	7:35	open stream	na	stream	None	light brown	clear	None	2595	602	ND	~0.1	0.029	0.218
9/1/09	Woburn	DRR1	7:45	open stream	na	stream	None	light brown	clear	None	4185	12976	ND	0.25	0.035	8.99
9/1/09	Woburn	Mys08	9:30	open stream	na	stream	None	light brown	clear	None	363	150	ND	0.25	0.027	14.3

9/1/09	Woburn	UR015	9:30	open stream	na	stream	None	light brown	clear	None	422	148	ND	NA	0.021	14
9/1/09	Woburn	Mys78	10:15	open stream	na	stream	light oil sme	None	clear	None	5199	10344	ND	0.25	0.031	10.1
9/1/09	Woburn	Mys09	10:45	open stream	na	stream	None	None	clear	None	205	82	ND	~0.1	ND	16
9/8/09	Watertown	SawB01	8:45	open stream	na	50-100	g petroleum	Orange	cloudy	some suds	1642	104	~0.05	0.2	0.032	0.308
9/8/09	Watertown	SawB01b	9:05	cast iron	12"	5	ht sewage o	None	clear	None	~4	ND	NA	0.25	NA	NA
9/8/09	Newton	Hyde01	9:45	concrete	4x8 box	100	None	None	clear	None	5654	1424	ND	0.2	ND	ND
9/8/09	Newton	Laund01	10:25	concrete	6x8 box	na	None	light tea	clear	some suds	1462	492	ND	~0.1	ND	ND
9/8/09	Newton	UR016	10:25	concrete	6x8 box	na	None	light tea	clear	some suds	1954	544	~0.05	~0.1	ND	ND
9/8/09	Newton	Chee01	11:11	open stream	na	50-70	None	None	clear	None	992	~38	ND	0.22	ND	ND
9/8/09	Waltham	Beav01	11:35	concrete	3x10 box	na	None	None	ightly cloud	some suds	713	292	~0.05	0.2	0.023	0.162
9/8/09	Lexington	WF01	12:26	concrete	3'	20-30	slight musty	None	clear	None	44	40	~0.05	ND	0.03	0.266
9/8/09	Lexington	Vine01	13:00	concrete	3x3 box	na	Musty	rust/brown	cloudy	None	29090	2752	0.08	NA	0.19	1.12
9/15/09	Lowell	Beaver1a	7:37	concrete	4'	15	None	None	clear	None	8	75	ND	0.25	ND	ND
9/15/09	Lowell	Beaver1	7:40	open stream	na	stream	None	light tea	clear	None	117	63	NA	~0.1	NA	NA
9/15/09	Lowell	Suffolk1	8:40	open stream	na	stream	None	light tea	clear	None	208	41	ND	ND	0.024	ND
9/15/09	Lowell	Central1	9:15	open stream	na	stream	None	None	clear	some suds	58	~10	ND	~0.1	0.024	0.088
9/15/09	Lowell	RMB1	10:10	open stream	na	stream	None	light tea	clear	some suds	1844	281	~0.05	0.25	0.022	ND
9/15/09	Lowell	UR017	10:10	open stream	na	stream	None	light tea	clear	some suds	2069	465	~0.05	0.25	0.046	ND
9/15/09	Lowell	NewH1	10:50	open stream	na	stream	None	light tea	clear	some suds	164	275	NA	0.2	NA	NA
9/15/09	Lowell	BlackB1	11:25	open stream	na	stream	None	None	murky	None	154	798	0.07	0.25	0.028	0.443
9/15/09	Lowell	BlackB2	12:00	open stream	na	stream	None	None	clear	None	182	97	NA	0.2	NA	NA
9/22/09	Reading	RRR1	8:10	CM	4x4 box	na	None	None	clear	None	21	20	ND	0.25	0.022	ND
9/22/09	Andover	RogerD	9:00	concrete	5'	na	musty odor	rk tea staini	clear	some suds	442	657	~0.05	~0.1	0.67	0.098
9/22/09	Andover	Rogerup	9:32	open stream	na	stream	no odor	med tea	clear	some suds	44	6488	~0.05	0.2	1.31	ND
9/22/09	Andover	Huss01	10:20	stone box	10' x 5'	na	None	light tea	clear	some suds	2319	987	ND	0.2	0.036	0.079
9/22/09	Andover	Huss02	10:50	open stream	na	stream	None	light tea	clear	None	39	ND	NA	ND	NA	NA
9/22/09	Lawrence	SLE3	11:30	concrete	3'	na	slight musty	None	Clear	None	205	445	ND	~0.1	ND	ND
9/22/09	Lawrence	UR018	11:30	concrete outfall	3'	na	slight musty	None	Clear	None	279	249	ND	~0.1	ND	ND
9/22/09	Lawrence	SPR05	12:30	concrete	18"	10	slight musty	None	Clear	Yes, paper	29870	19863	~0.05	0.25	0.05	7.02
9/22/09	Lowell	RMB1	13:20	open stream	na	stream	None	light tea	Clear	None	1642	199	ND	~0.1	0.031	0.138
9/29/09	Milton	CunPk02	8:30	concrete	18"	2	d sewage sr	None	Mild	Leave, bubb	1954	6131	0.06	0.18	0.041	0.291
9/29/09	Milton	CunPk03	9:30	open stream	na	stream	None	None	Clear	Foam	1164	2098	0.06	~0.1	0.038	0.206
9/29/09	Norwood	PB02A	10:45		18"	5	None	None	Clear	None	68	98	ND	0.15	ND	0.1
9/29/09	Norwood	PB02B	11:00	open stream	na	stream	None	light brown	Clear	None	1379	1396	~0.05	~0.1	0.875	0.139
9/29/09	Norwood	PB02	12:00		18"	3	Septic	Cloudy	very turbid	None	68670	6131	0.07	0.25	0.05	0.695
9/29/09	Norwood	UR019	12:00		18"	3	Septic	Cloudy	very turbid	None	48840	5475	0.09	0.25	0.061	0.556
4/21/10	Arlington	91Mys	8:00	open stream	na	stream	none	heavy tea	cloudy	some suds	152	41	NA	~0.1	NA	NA
4/21/10	Arlington	MillB	8:10	CM	10x15ft	na	strong must	heavy tea	fairly clear	suds	395	52	0.06	~0.1	NA	0.124
4/21/10	Arlington	MBike	8:50	Stone (instream)	10'X8'	stream	moderate	med tea	clear	none	268	233	NA	~0.1	NA	NA
4/21/10	Arlington	AHS	9:05	open stream	na	stream	none	light tea	clear	some	666	213	0.06	ND	NA	ND
4/21/10	Arlington	UR020	9:05	open stream	na	stream	none	light tea	clear	some	1549	173	0.06	ND	NA	ND
4/21/10	Arlington	Grove01	9:40	Stone (instream)	6'	stream	natural gas	light tea	fairly clear	some suds	4480	529	0.06	~0.1	NA	0.079
4/21/10	Arlington	GroveS	9:45	concrete	40"	10-15	none	none	clear	none	744	7701	NA	0.2	NA	NA
4/21/10	Arlington	Quinn2	10:30	concrete	12"	19.0040741	fresh	none	clear	none	ND	ND	0.05	0.3	NA	ND
4/21/10	Arlington	RyMill	11:05	concrete	2'X3'	4.00407407	fresh	none	clear	none	1302	404	0.16	0.3	NA	0.677
4/21/10	Arlington	RyMill2	11:10	hole in wall	na	2.00407407	none	none	clear	none	ND	ND	NA	0.2	NA	NA
4/21/10	Arlington	RyderE	11:20	concrete	30"	29.0040741	none	none	clear	none	271	336	0.16	0.25	NA	0.13
4/21/10	Arlington	RyderW	11:30	concrete	36"	20-30	none	none	clear	none	30	20	ND	ND	NA	ND
4/21/10	Arlington	30Park	12:25	open stream	na	stream	none	light tea	clear	none	1741	8164	0.08	ND	NA	ND
4/28/10	Winchester	ABR006	8:30	open stream	na	stream	none	none	fairly clear	leaves/bran	899	199	0.09	0.2	NA	0.528
4/28/10	Winchester	Wfield	8:50	open stream	na	stream	none	none	lightly turbi	some	839	317	NA	0.22	NA	NA
4/28/10	Winchester	Vern01	9:15	open stream	na	stream	none	none	lightly turbi	leaves/bran	643	108	NA	0.22	NA	NA
4/28/10	Winchester	Wedge01	9:32	open stream	na	stream	none	none	lightly turbi	some	58	10	NA	~0.1	NA	NA
4/28/10	Winchester	Skill01	9:50	oncrete (instrean	3'	stream	none	blueish/gray	turbid	some	913	148	0.1	0.25	NA	0.844
4/28/10	Winchester	UR021	9:50	oncrete (instrean	3'	stream	none	blueish/gray	turbid	some	1642	132	0.1	0.25	NA	0.837
4/28/10	Winchester	Skill02	9:55	concrete	12"	5-10	none	none	fairly clear	none	75	30	NA	~0.1	NA	NA
4/28/10	Winchester	Swan1	10:45	open stream	na	stream	none	light tea	lightly turbi	some suds	740	171	0.08	0.25	NA	0.887
4/28/10	Winchester	Russ1	11:05	Stone (instream)	4'X4'	stream	none	light tea	clear	some suds	384	359	0.07	0.25	NA	0.083
4/28/10	Woburn	OF118	11:35	concrete	30"	50	none	none	clear	some suds	154	52	0.07	0.3	NA	0.381
4/28/10	Woburn	OF159A	12:04	Cor.Metal	18"	5-10	none	none	clear	none	268	156	NA	0.3	NA	NA
4/28/10	Woburn	OF159	12:05	Cor.Metal	24-30"	20-30	light sewag	none	clear	none	318	109	0.1	0.25	NA	1.38
4/28/10	Woburn	OF161	12:15	Cor. Metal	5'	stream	slight musty	none	lightly turbi	some	1642	148	ND	0.3	NA	0.153
5/5/10	Arlington	Grove01a	8:10	Stone (instream)	6'	stream	natural gas	light tea	fairly clear	some suds	2747	520	0.07	~0.1	NA	0.101
5/5/10	Arlington	GroveS	8:10	concrete	40"	10-15	slight gas	none	clear	none	202	15531	NA	0.22	NA	NA
5/5/10	Arlington	UR022	8:10	Stone (instream)	6'	stream	natural gas	light tea	fairly clear	some suds	2069	583	0.07	~0.1	NA	0.218
5/5/10	Arlington	Robin	8:45	pose joint grey til	24"	10-15	ght natural g	none	clear	none	9678	295	NA	0.4	NA	NA
5/5/10	Arlington	Brattle	9:10	open stream	na	stream	none	tea	very turbid	some	1462	776	NA	~0.1	NA	NA
5/5/10	Arlington	RyMill	9:25	concrete	2'X3'	3	emical/mus	none	fairly clear	none	2190	301	NA	~0.1	NA	NA
5/5/10	Arlington	RyderE	9:32	concrete	30"	29.0040741	none	none	clear	none	49	30	NA	0.2	NA	NA
5/5/10	Arlington	Ryder01	9:35	Stone (instream)	6'	stream	none	light tea	fairly clear	some suds	1954	350	0.07	~0.1	NA	0.135
5/5/10	Arlington	30Park	10:10	open stream	na	stream	none	light tea	clear	none	1302	350	0.07	ND	NA	0.164
5/5/10	Arlington	1395MA	10:30	open stream	na	stream	none	light tea	lightly turbi	none	689	323	0.06	ND	NA	0.133
5/5/10	Arlington	Drake01	10:55	open stream	na	stream	none	med tea	lightly turbi	none	2318	960	0.1	ND	NA	0.257
5/5/10	Arlington	ArlRes	11:05	concrete	3'	stream	none	light tea	clear	some suds	183	74	NA	ND	NA	NA
5/5/10	Lexington	WF01	11:25	Stone (instream)	4'X4'	stream	none	none	cloudy	some scum	16	52	0.07	ND	NA	ND
5/5/10	Lexington	Vine01	11:55	open stream	na	stream	none	heavy tea	lightly turbi	some leaves	1302	393	NA	~0.1	NA	NA
5/12/10	Woburn	Halls2	8:00	open stream	na	stream	none	light brown	na	none	212	109	NA	~0.1	NA	NA
5/12/10	Woburn	DRR1	8:15	open stream	na	stream	none	light brown	clear	none	182	448	NA	~0.1	NA	NA
5/12/10	Woburn	Mys07	9:05	open stream	na	stream	hulch/sewag	dark brown	very murky	algae	131	145	NA	~0.1	NA	NA
5/12/10	Woburn	Mys08	9:10	open stream	na	stream	t mulch/sew	light brown	clear	none	92	ND	NA	ND	NA	NA
5/12/10	Woburn	Torr01	10:00	open stream	na	stream	none	light brown	clear	none	223	120	NA	0.25	NA	NA
5/12/10	Woburn	UR023	10:00	open stream	na	stream	none	light brown	clear	none	182	52	NA	0.25	NA	NA
5/12/10	Woburn	Dart1	10:30	open stream	na	stream	none	dark brown	clear	some suds	64	31	NA	0.2	NA	NA
5/12/10	Woburn	School01	11:05	open stream	na	stream	none	dark brown	clear	none	109	20	NA	0.25	NA	NA
5/19/10	Quincy	FBP02	8:15	open stream	na	stream	none	none	clear	none	4813	3873	NA	0.25	NA	NA
5/19/10	Quincy	UR024	8:15	open stream	na	stream	none	none	clear	none	3922	3654	NA	0.3	NA	NA

5/19/10	Quincy	FBP03	8:55	open stream	na	stream	septic smel	light brown	nild	none	5654	5172	NA	0.4	NA	NA
5/19/10	Quincy	Broad1	9:25	open stream	na	stream	none	none	clear	none	3466	2755	NA	2	NA	NA
5/19/10	Quincy	Sag1A	10:15		4ft		slight septic sn	light brown	clear	none	13340	2098	NA	1.7	NA	NA
5/19/10	Quincy	WollB1A	10:40	CM	3'x3' box	0.5L/min	sewage	none	clear	none	4480	3282	NA	0.5	NA	NA
5/19/10	Quincy	WollB1	11:00	CM	4x4 box	1	sewage	none	clear	none	2747	6131	NA	0.75	NA	NA
5/19/10	Quincy	Sag1B	11:45		5x6ft	slowly	sewage	light brown	mild	none	20980	3654	NA	0.5	NA	NA
5/26/10	Belmont	UR025	9:10	open stream	na	stream	g musty/se	med tea	lightly turbi	none	29090	7701	NA	0.2	NA	NA
5/26/10	Belmont	WEB013	9:10	open stream	na	stream	g musty/se	med tea	lightly turbi	none	11620	6488	NA	0.2	NA	NA
5/26/10	Arlington	ARL043	9:58	concrete	18-24	5	none	none	clear	none	79	109	NA	~0.1	NA	NA
5/26/10	Arlington	ARL137	10:25	clay	16	20-30	none	none	clear	none	12	10	NA	ND	NA	NA
5/26/10	Arlington	ARL207	11:07	seep	na	1-2	brassica	na	na	na	25	20	NA	~0.1	NA	NA
5/26/10	Arlington	Drake01	11:25	open stream	na	stream	none	med tea	lightly turbi	none	1230	663	NA	~0.1	NA	NA
5/26/10	Arlington	ArlRes	11:30	concrete	3'	stream	none	med tea	lightly turbi	none	479	548	NA	~0.1	NA	NA
5/26/10	Lexington	Bow01A	12:00	concrete	12	<1	none	none	clear	none	12	ND	NA	0.2	NA	NA
5/26/10	Lexington	Bow01	12:05	open stream	na	stream	none	med tea	lightly turbi	none	643	809	NA	~0.1	NA	NA
5/26/10	Lexington	Fott01	12:35	open stream	na	stream	none	med tea	lightly turbi	none	124	199	NA	ND	NA	NA
5/26/10	Lexington	GMS01	12:55	open stream	na	stream	none	heavy tea	very murky	thick film	72	52	NA	0.2	NA	NA
6/2/10	Revere	UR026	8:01	concrete	24	NA	none	brown	turbid	none	20640	9606	NA	0.4	NA	NA
6/2/10	Revere	WashN01	8:01	concrete	24	NA	none	brown	turbid	none	17250	16070	NA	0.3	NA	NA
6/2/10	Revere	Sales01	8:10	open stream	na	stream	none	light brown	fairly clear	trash	4813	2359	NA	0.4	NA	NA
6/2/10	Revere	Green01	8:40	open stream	na	stream	musty	grey	turbid	trash	>241960	31300	NA	0.75	NA	NA
6/2/10	Boston	29M049	9:10	concrete	3ft	30-40	none	none	lightly turbi	none	714	3873	NA	3	NA	NA
6/2/10	Boston	25L058	9:50	concrete	6x6ft box	na	musty	grey	turbid	trash	2069	3448	NA	2	NA	NA
6/2/10	Boston	Bos017	10:20	concrete	72"	na	none	none	cloudy	particulates	612	203	NA	2	NA	NA
6/2/10	Boston	29J212	10:22	concrete	60"	na	none	none	cloudy	particulates	568	52	NA	2	NA	NA
6/2/10	Chelsea	Mill2A	11:20	concrete	24	<5	usty/chemic	none	clear	trash	58	175	NA	0.8	NA	NA
6/10/10	Lawrence	SLE3	7:25	concrete	3'	NA	strong must	vhite/tan/gra	ightly cloud	ilamentous	1954	2359	NA	1	NA	NA
6/10/10	Lawrence	UR027	7:25	concrete outfall	3'	NA	strong must	none	ightly cloud	ilamentous	1741	1314	NA	0.2	NA	NA
6/10/10	Lawrence	SLE3	8:25	concrete	3'	NA	strong must	none	ightly cloud	ilamentous	899	4884	NA	0.2	NA	NA
6/10/10	Lawrence	SLE3	9:00	concrete	3'	NA	strong must	none	ightly cloud	ilamentous	806	2014	NA	0.5	NA	NA
6/10/10	Lawrence	SPR05	9:35	concrete	18"	10	none	none	very clear	none	NA	NA	NA	0.5	NA	NA
6/16/10	Concord, M	PRIS01	11:00	concrete	2ft	2	sewage	none	clear	none	16160	10462	NA	0.8	NA	NA
6/30/10	Falmouth	MBR001	8:52								25	ND	NA	0.5	NA	NA
6/30/10	Falmouth	6IN001	9:00								152	669	NA	0.75	NA	NA
6/30/10	Falmouth	12IN01	9:05								ND	ND	NA	0.75	NA	NA
6/30/10	Falmouth	COIL01	9:20								ND	10	NA	0.2	NA	NA
6/30/10	Falmouth	24IN01	9:30								25	ND	NA	0.25	NA	NA
6/30/10	Falmouth	INF01	9:30								461100	290900	NA	1	NA	NA
6/30/10	Falmouth	12INWA	9:40								ND	ND	NA	0.75	NA	NA
6/30/10	Falmouth	STE01	9:45								547500	186000	NA	0.75	NA	NA
6/30/10	Falmouth	UR099	9:45								686700	119800	NA	0.75	NA	NA
7/7/10	Manchester	Dunbar	8:20	Stone culvert	3x4	150	ng petroleu	oil sheen	turbid	rash & debri	1089	422	NA	ND	NA	NA
7/7/10	Manchester	Granite	9:00	concrete	4ft	35	rong sewag	none	clear	none	125	110	NA	0.5	NA	NA
7/7/10	Manchester	047N	9:40	concrete	4ft	15-20	rong sewag	none	ightly cloud	none	4	ND	NA	0.25	NA	NA
7/7/10	Manchester	047	10:00	concrete	4ft	NA	e, musty (s	med tea	cloudy	some	64	52	NA	~0.1	NA	NA
7/7/10	Concord, NH	Mer4120	10:45	brick	48" semi-circle	NA	none	none	ightly cloud	rash & debri	218	399	NA	1	NA	NA
7/7/10	Concord, NH	Mer4120a	10:45	concrete	36"	10	ilightly mus	none	ightly cloud	e leaves & d	25	ND	NA	0.5	NA	NA
7/7/10	Concord, NH	UR028	10:45	brick	48" semi-circle	NA	none	none	ightly cloud	rash & debri	263	448	NA	1	NA	NA
7/7/10	Concord, NH	Clinton	11:55	open stream	na	low	none	none	clear	none	806	341	NA	0.75	NA	NA
7/7/10	Concord, NH	Pleasant	12:15	open stream	na	low	none	none	clear	none	1089	1722	NA	0.25	NA	NA
7/14/10	Boston	29J212	7:17	concrete	60"	na	none	none	clear	none	3683	199	NA	3	NA	NA
7/14/10	Boston	Bos017	7:17	concrete	72"	na	musty	none	ightly cloud	some	129970	2489	NA	2.5	NA	NA
7/14/10	Boston	UR029	7:17	concrete	60"	na	none	none	clear	none	3922	256	NA	3	NA	NA
7/14/10	Swampscot	StaceyN	8:20	CM	4'x8'	100-150	Cl2 strong	none	clear	rubber glove	109	161	NA	0.2	NA	NA
7/14/10	Lynn	StaceyS	8:20	CM	4'x8'	300-400	musty	none	cloudy	me suds/tra	38730	68670	NA	0.2	NA	NA
7/14/10	Salem	Palmer1	9:05	clay	18-24	15-20	slight musty	none	clear	none	13540	17329	NA	3	NA	NA
7/14/10	Beverly	Lynch1	9:35	concrete	12"	25	none	none	clear	none	689	1178	NA	0.2	NA	NA
7/14/10	Beverly	Brac01	10:04	concrete/stone	4'box	na	Sulfur	none	clear	some suds	2452	1725	NA	2	NA	NA
7/14/10	Beverly	Brac02	10:31	open stream	na	stream	none	med tea	turbid	some	2595	3130	NA	ND	NA	NA
7/14/10	Beverly	Lynch02	10:50	plastic	8"	~4	none	none	clear	none	2069	4352	NA	2	NA	NA
7/21/10	Winchester	Swan01	7:25	open stream	na	stream	None	grey	very cloudy	some suds	452	305	NA	~0.1	NA	NA
7/21/10	Winchester	Wash01	7:50	open stream	na	stream	None	grey	very cloudy	some suds	484	512	NA	~0.1	NA	NA
7/21/10	Winchester	Wash02	7:55	concrete	24"	na	None	grey	very cloudy	some suds	857	318	NA	0.2	NA	NA
7/21/10	Woburn	Mer01up	8:30	open stream	na	stream	None	greyish	very cloudy	none	448	199	NA	0.2	NA	NA
7/21/10	Woburn	Sweet	8:35	open stream	na	stream	none	none	clear	some suds	518	148	NA	0.22	NA	NA
7/21/10	Woburn	Salem	9:25	open stream	na	stream	none	greyish	very cloudy	some	996	301	NA	0.15	NA	NA
7/21/10	Woburn	Mys01	9:56	open stream	na	stream	none	bluish	ightly cloud	rash & debri	238	110	NA	0.2	NA	NA
7/21/10	Woburn	Mys01b	10:00	concrete	16-18"	10-15	none	none	clear	none	4	20	NA	0.3	NA	NA
7/21/10	Woburn	Mys01c	10:10	plastic	4"	1/2	none	none	cloudy	none	ND (4)	ND (10)	NA	ND	NA	NA
7/21/10	Woburn	Halls2	10:55	open stream	na	stream	none	none	clear	none	2190	816	NA	ND	NA	NA
7/21/10	Woburn	DRR1	11:00	open stream	na	stream	none	grey	cloudy	none	1549	288	NA	~0.1	NA	NA
7/21/10	Woburn	UR030	11:00	open stream	na	stream	none	grey	cloudy	none	744	253	NA	~0.1	NA	NA
7/28/10	Boston	29J212	7:15	concrete	60"	na	lightly must	none	clear	none	890	ND	NA	3	NA	NA
7/28/10	Boston	Bos017	7:16	concrete	72"	na	lightly must	none	clear	some	120330	2613	NA	3	NA	NA
7/28/10	Dorchester	CantB	8:28	open stream	na	stream	na	grey./green	lightly coud	rash & debri	169	86	NA	0.3	NA	NA
7/28/10	Dorchester	UR031	8:28	open stream	na	stream	na	grey./green	lightly coud	rash & debri	146	51	NA	0.3	NA	NA
7/28/10	Boston	15F288	9:02	Brick	5'	~10	sharp musty	none	clear	none	205	109	NA	0.2	NA	NA
7/28/10	Boston	Mudd1	9:55	stone	bridge	NA	none	na	cloudy	none	2318	703	NA	0.15	NA	NA
7/28/10	Brookline	VillB	10:40	stone	5'	NA	musty	green	cloudy	ves &sedim	258	52	NA	~0.1	NA	NA
7/28/10	Boston	OF233	11:00	concrete	20-30"		slightly must	ght oil shee	clear	e trash & de	198630	24196	NA	ND	NA	NA
7/28/10	Boston	Jpond	11:25	bubbling up from ground			none	none	none	none	43	ND	NA	ND	NA	NA
8/4/10	Lawrence	SPR05	7:35	concrete	18"	~5 - 10	clean smell	none	none	none	30	10	NA	0.2	NA	NA
8/4/10	Lawrence	SPRLGH	7:40	open stream	na	stream	none	none	clear	none	1164	1529	NA	~0.1	NA	NA
8/4/10	Lawrence	Jackson	8:25	open stream	na	stream	none	light tea	some	ash and deb	606	512	NA	~0.1	NA	NA
8/4/10	Lawrence	Willow	9:00	open stream	na	stream	none	med tea	none	ash and deb	325	158	NA	~0.1	NA	NA
8/4/10	Lawrence	SLE3	9:30	concrete	3'		sharp punge	none	clear	nks of bact	1230	275	NA	~0.1	NA	NA

8/4/10	Lawrence	Shaw01	9:50	open stream	na	stream	none	oil sheen, slight tea		leaves	208	86	NA	~0.1	NA	NA
8/4/10	Andover	Huss01	10:35	stone box	10' x 5'	na	none	none	clear	surface suds	7945	109	NA	ND	NA	NA
8/4/10	Andover	Huss02	11:00	open stream	na	stream	cloudy	ight oil shee	ightly cloud	scum	34	ND (10)	NA	~0.1	NA	NA
8/4/10	Andover	URO32	11:00	open stream	na	stream	cloudy	ight oil shee	ightly cloud	scum	8	20	NA	~0.1	NA	NA
8/11/10	Stoneham	100A	7:42	open stream	na	stream	ght musty o	light tea	clear	none	22820	323	NA	0.35	NA	NA
8/11/10	Stoneham	1West	8:03	stone	2x3	50-100	moldy mus	light film	clear	surface suds	7945	2613	NA	0.2	NA	NA
8/11/10	Stoneham	2Linden	8:25	open stream	na	stream	petroleum	lightly cloud	clear	none	713	285	NA	0.2	NA	NA
8/11/10	Stoneham	2Lincul	8:30	clay	8"	~1 -2	none	none	clear	none	173290	6131	NA	0.2	NA	NA
8/11/10	Stoneham	Elm2	9:00	ert with metal gra	2' x 4'	~30 - 40	musty	none	clear	none	41060	6867	NA	0.2	NA	NA
8/11/10	Stoneham	URO33	9:00	ert with metal gra	2' x 4'	~30 - 40	musty	none	clear	none	41060	4352	NA	0.2	NA	NA
8/11/10	Stoneham	Toms	9:50	tal w/asphalt bot	3'	~5 -7	phault/ petro	none	nge flocc o	none	212	10	NA	0.15	NA	NA
8/11/10	Woburn	Halls2	10:35	open stream	na	low	none	light tea	nsome trash and		1379	717	NA	~0.1	NA	NA
8/11/10	Woburn	Halls3	10:50	concrete	~12	< 1	or a few mir	none	clear	suds	4	ND (10)	NA	0.6	NA	NA
8/11/10	Stoneham	31Sixth	11:21	concrete	18"		none	none	clear	light film on	183	86	NA	0.3	NA	NA
8/11/10	Stoneham	2ndRd	11:50	open stream	na	stream	none	med tea	clear	none	430	226	NA	~0.1	NA	NA
8/18/10	Warwick, RI	CBW	8:10	Beach	NA	outgoing tide	none	none	clear	none	28 fecal	ND	NA	3	NA	NA
8/18/10	Warwick, RI	UNKBK	8:22	open stream	na	~ 0.3cfs	none	none	ightly cloud	none	504 fecal	4352	NA	2	NA	NA
8/18/10	Warwick, RI	MC01	8:25	open stream	na	stream	none	none	can't see bo	none	484 fecal	311	NA	2	NA	NA
8/18/10	Warwick, RI	BB08	8:50	open stream	na	stream	none	none	cloudy	none	1340 fecal	1014	NA	~0.1	NA	NA
8/18/10	Warwick, RI	BB08P	8:57	concrete	~16	~ 1	none	none	clear	none	1610 fecal	135	NA	1	NA	NA
8/18/10	Warwick, RI	LK04	9:20	open stream	na	stream	none	none	clear	and some o	1710 fecal	906	NA	~0.1	NA	NA
8/18/10	Warwick, RI	BB07	9:30	open stream	na	stream	none	none	clear	none	2870 fecal	1046	NA	0.2	NA	NA
8/18/10	Warwick, RI	WR02	9:45	double culvert			none	none	clear	he oil on sur	300 fecal	148	NA	0.15	NA	NA
8/18/10	Warwick, RI	LK02	10:55	open stream	na	stream	none	none	clear	some trash	7100 fecal	1374	NA	0.25	NA	NA
8/18/10	Warwick, RI	Emerson	11:11	erforated aluminu	2'	~1 -2	none	none	clear	none	580 fecal	31	NA	ND	NA	NA
8/18/10	Warwick, RI	MB01	11:30	stone	2'x2'box	~50	none	none	clear	none	484 fecal	161	NA	ND	NA	NA
8/18/10	Warwick, RI	SweetF	11:45	concrete	~16	~15 - 20	ong musty o	grey	cloudy	d grayish gro	ND fecal	ND	NA	0.2	NA	NA
8/18/10	Warwick, RI	URO34	11:45	concrete	~16	~15 - 21	ong musty o	grey	cloudy	d grayish gro	ND fecal	62	NA	0.2	NA	NA
8/25/10	Laconia, NH	Beach RT	8:30	Beach	NA	NA	none	none	clear	none	21	ND	NA	0.2	NA	NA
8/25/10	Laconia, NH	996-F	8:50	concrete	16	~10	none	none	clear	none	353	52	NA	0.4	NA	NA
8/25/10	Laconia, NH	Beach RT	10:30	Beach	NA	NA	none	none	clear	none	16	ND	NA	0.25	NA	NA
8/25/10	Laconia, NH	GovB	10:40	Swale	NA	stagnant	none	light orange	ightly cloud	some scum	192	98	NA	0.2	NA	NA
8/25/10	Laconia, NH	GovB01	11:00	tone w/metal lining		~30	none	none	clear	none	857	1223	NA	0.22	NA	NA
8/25/10	Laconia, NH	996-F	11:11	concrete	16	~20	none	none	clear	some suds	6932	19863	NA	0.2	NA	NA
8/25/10	Laconia, NH	UR035	11:11	concrete	16	~20	none	none	clear	some suds	6978	17329	NA	0.2	NA	NA
8/25/10	Laconia, NH	Swale	11:40	concrete	16-18	~10	none	none	clear	none	17200	26030	NA	0.2	NA	NA
8/25/10	Laconia, NH	CBAdmin	11:50	concrete	18	~50	ght musty o	none	clear	none	621	1553	NA	0.2	NA	NA
8/25/10	Concord, NH	Mer4120	12:45	brick	48" semi-circle	NA	musty	grey	cloudy	he suds & de	38730	51720	NA	0.25	NA	NA
9/1/10	Revere	Green01	8:10	open stream	na	stream	musty	none	clear	none	27550	6867	NA	0.25	NA	NA
9/1/10	Chelsea	Mill2A	8:30	concrete	24	<5	usty/chemic	none	clear	trash	8	ND	NA	0.6	NA	NA
9/1/10	Chelsea	Mill2	8:55	concrete	~30 inches	15	sharp sewa	clear	none	None	282	41	NA	0.5	NA	NA
9/1/10	Revere	Amelia	9:30	open stream	na	stream	none	light tea	suspended	some suds	3466	1430	NA	0.6	NA	NA
9/1/10	Revere	Sargent	9:55	concrete	36	NA	slight musty	none	clear	none	875	201	NA	0.2	NA	NA
9/1/10	Marblehead	DLaunch	11:10	concrete	4ft	40	none	none	clear	none	31300	2481	NA	0.75	NA	NA
9/1/10	Marblehead	UR036	11:10	concrete	4ft	40	none	none	clear	none	30760	3076	NA	0.75	NA	NA
9/1/10	Marblehead	Mneck02	11:35	concrete	24	5	none	ht green/yel	clear	ome fine suc	81640	120330	NA	0.2	NA	NA
9/1/10	Marblehead	GO01	12:00	concrete	36in	50	None	None	Clear	None	310	145	NA	0.2	NA	NA
9/1/10	Marblehead	StramB	12:30	Beach	NA	NA	none	none	clear	None	211	ND	NA	2	NA	NA
10/5/10	Watertown	SawB01	8:15	open stream	na	stream	none	med tea	clear	e leaves & d	899	156	NA	0.2	NA	NA
10/5/10	Watertown	UR037	8:15	open stream	na	stream	none	med tea	clear	e leaves & d	890	122	NA	0.2	NA	NA
10/5/10	Watertown	ARLEast	8:35	open stream	na	stream	none	none	clear	none	7946	823	NA	0.25	NA	NA
10/5/10	Watertown	ARL01	8:40	concrete	4'x4' box	na	none	none	clear	none	9678	1014	NA	NA	NA	NA
10/5/10	Watertown	ARL02	8:42	concrete	4'x4' box	na	none	none	clear	none	9678	738	NA	NA	NA	NA
10/5/10	Watertown	ARL03	8:45	concrete	5'x4' box	na	none	none	clear	none	3080	173	NA	NA	NA	NA
10/5/10	Watertown	Wat13	9:20	concrete	16"	1	none	none	clear	none	92080	2142	NA	0.25	NA	NA
10/5/10	Watertown	Wat12	9:30	concrete	36"	na	none	none	clear	none	111990	14136	NA	0.6	NA	NA
10/5/10	Watertown	Wat11	9:40	concrete	4'x3' box	na	none	med tea	turbid	none	19350	1723	NA	0.3	NA	NA
10/5/10	Watertown	LB01	10:35	concrete	10'x7'box	100	none	none	clear	none	6212	583	NA	0.2	NA	NA
10/5/10	Watertown	Wat5	11:07	concrete	4'	1	none	none	clear	none	64	20	NA	0.25	NA	NA
10/5/10	Watertown	Wat6	11:11	concrete	5'	na	none	none	clear	none	510	122	NA	0.25	NA	NA
10/13/10	Marblehead	DLaunch	8:15	concrete	4ft	40	none	none	clear	none	1376	860	NA	2	NA	NA
10/13/10	Marblehead	UR038	8:15	concrete	4ft	40	none	none	clear	none	871	723	NA	2	NA	NA
10/13/10	Marblehead	MH19	8:38	stormdrain	na	~20	ong musty o	none	clear	none	TNTC	24196	NA	0.5	NA	NA
10/13/10	Marblehead	MH32	9:10	stormdrain	na	~15	none	none	clear	none	118	10	NA	~0.1	NA	NA
10/13/10	Marblehead	MH48	9:30	stormdrain	na	~15	lightly must	none	clear	none	8	ND	NA	~0.1	NA	NA
10/13/10	Marblehead	MH29A	9:55	plastic stormdrair	18-24	~10	none	none	clear	none	689	41	NA	~0.1	NA	NA
10/13/10	Marblehead	MH2336	10:30	stormdrain	na	na	none	none	clear	small white	5654	2489	NA	0.25	NA	NA
10/13/10	Marblehead	MH2203	10:55	stormdrain	na	~15	musty	none	clear	none	5654	5475	NA	0.3	NA	NA
10/13/10	Marblehead	MHWinslow	11:11	stormdrain	na	na	musty	lightly yellov	clear	none	2452	118	NA	0.4	NA	NA
10/13/10	Marblehead	MHWinslowA	11:28	stormdrain	18"	~5-10	resh smellin	none	clear	none	43	98	NA	0.2	NA	NA
10/27/10	Quincy	WollB1	8:05	CM	4x4 box	50	musty	none	clear	none	147	197	NA	1.25	NA	NA
10/27/10	Quincy	WollB1A	8:10	CM	3'x3' box	30-40	musty/sulfu	none	ightly cloud	oily film	192	121	NA	2	NA	NA
10/27/10	Quincy	WollB1B	8:18	concrete	3-4'	30-40	musty/sulfu	none	ightly cloud	some suds	58	20	NA	2.5	NA	NA
10/27/10	Dorchester	Ten1	8:55	Pipe Mat.	24-30	na	none	Tan/brown	very turbid	none	132	20	NA	1.5	NA	NA
10/27/10	Boston	10L094	9:20	concrete	(2) 6'x6'	na	sewage	grey	cloudy	none	4813	14136	NA	0.6	NA	NA
10/27/10	Boston	UR039	9:20	concrete	(2) 6'x6'	na	sewage	grey	cloudy	none	41060	9208	NA	0.8	NA	NA
10/27/10	Boston	10L094A	9:25	metal	24"	5	musty	grey	cloudy	none	34480	14136	NA	1.5	NA	NA
10/27/10	Quincy	Sag1A	10:15	open stream	na	stream	slight musty	rk/med brov	very turbid	some suds	5630	2909	NA	0.75	NA	NA
10/27/10	Quincy	SagA2	10:20	seep	12	1	none	none	clear	none	ND	ND	NA	ND	NA	NA
10/27/10	Quincy	Sag1B	10:30	concrete	6'x6'	na	none	brown	silty/turbid	none	4480	2851	NA	0.5	NA	NA
10/27/10	Quincy	Sag1C	10:58	metal	30"	na	natural gas	light brown	clear	none	2452	2723	NA	0.6	NA	NA
10/27/10	Quincy	Bay1	11:40	Seep/pool	NA	NA	sewage	rk brown/gr	cloudy	none	173290	365400	NA	NA	NA	NA
10/27/10	Quincy	BayBch	11:45	Beach	NA	NA	none	none	cloudy	none	25	ND	NA	3	NA	NA
10/27/10	Quincy	WollBch2	12:30	Beach	NA	NA	none	none	cloudy	none	21	ND	NA	2	NA	NA
10/27/10	Quincy	WollBch1	12:35	Beach	NA	NA	none	none	cloudy	none	113	ND	NA	3	NA	NA

NH3 (mg/l)				Nitrate/Nitrite	P	PPCP ng/L									Cl2 (mg/l)				Flou
Field	Nessler	DR-850	Test St.	Alpha	EPA (µg/L)	Atenolol	Acetaminophen	Cotinine	1,7 Dimethylxanthine	Caffeine	Azithromycin	Primidone	Urobilin	Carbamazepine	Alpha Free	Alpha Total	Field	Test St.	Alpha
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	~0.02	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	~0.02	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	181	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	196	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA

NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
>3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10	NA	NA
0.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10	NA	NA
0.55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	NA	NA
0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.09	NA	NA
1.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
NA	NA	NA	0.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
NA	NA	NA	0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08	NA	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	NA	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	NA	NA	~0	NA	NA	ND (1.0)	11	ND (0.2)	9.1	56	ND (0.2)	ND (2.0)	31	~0.76	ND	ND	0.08	ND	ND
ND	NA	NA	ND	NA	NA	ND (1.0)	34	ND (0.2)	38	2600	ND (0.2)	ND (2.0)	96	2.2	ND	ND	0.05	ND	ND
1.5	NA	NA	1	NA	NA	ND (1.0)	7.7	ND (0.2)	9.3	36	ND (0.2)	8	150	~1.5	ND	ND	0.14	ND	0.53
1.5	NA	NA	NA	NA	NA	ND (1.0)	4.7	ND (0.2)	~4.8	18	~0.4	10	150	1.8	ND	ND	0.03	ND	ND
0.75	NA	NA	NA	NA	NA	ND (1.1)	7.6	ND (0.2)	~6.2	13	1.4	ND (2.2)	74	1.5	ND	ND	ND	ND	1.1
0.5	NA	NA	NA	NA	NA	ND (1.0)	7.7	ND (0.2)	~5.5	15	ND (0.2)	ND (2.0)	86	1.5	ND	ND	0.04	ND	1.1
1.10	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
2.00	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.09	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
>2.0	NA	NA	5.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
>2.0	NA	NA	>6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	na	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.5	NA	NA	0.25	NA	315	~30	1500	~2.9	650	2800	14	ND (2.0)	13000	26	ND	ND	0.04	ND	0.67
0.25	NA	NA	3	NA	155	ND (2.0)	3.8	ND (0.2)	~7.7	19	ND (2.0)	5.9	ND (20.0)	ND (0.2)	ND	ND	0.10	0.1/0.1	0.50
1.5	NA	NA	3	NA	~135	ND (2.0)	3.7	ND (0.2)	72	110	ND (2.0)	3.2	52	ND (0.2)	ND	ND	ND	ND	0.52
>2	NA	NA	6	NA	170	~1.8	21	~46	~67	1600	ND (2.0)	ND (2.0)	1100	9.8	ND	ND	0.05	ND	0.22
ND	NA	NA	ND	NA	11	ND (2.0)	ND (1.0)	ND (0.2)	~7	9.9	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.2)	ND	ND	ND	ND	0.23
ND	NA	NA	ND	NA	12	ND (2.0)	ND (1.0)	ND (0.2)	~3.8	11	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.2)	ND	ND	ND	ND	0.28
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.10	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.35*	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.60	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.60	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.2	NA	0.2	ND	NA	23.0	~6.9	170.0	ND (0.4)	21.0	33.0	~2.1	ND (4.0)	230.0	6.0	ND	ND	~0.02	ND	ND
~0.1	NA	NA	~0.10	NA	21	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	15	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	ND	ND	ND
ND	NA	NA	ND	NA	78	~4.2	1700	ND (0.4)	120	200	~1.0	ND (4.0)	2500	12	ND	ND	~0.01	ND	ND
~0.1	NA	0.14	0.25	NA	84	~4.9	1600	~0.34	130	240	~1.6	ND (4.0)	3300	7.5	ND	ND	ND	ND	ND
~0.75	NA	NA	3	NA	328	~150	13000	ND (8.0)	2600	22000	12	ND (80.0)	55000	200	ND	ND	NA	ND	ND
ND	NA	0.23	ND	NA	35	~5.9	73	~0.74	87	360	~1.1	ND (4.0)	320	10	ND	ND	NA	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.10	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.71	0.50	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	ND	ND	NA	87	~1.9	55	~0.63	47	71	ND (0.2)	ND (2.0)	78	0.58	ND	ND	ND	ND	0.46
NA	NA	0.15	0.6	NA	34	ND (1.0)	5.8	~0.29	12	34	ND (0.2)	ND (2.0)	2.5	1.5	ND	ND	0.07	ND	ND
NA	NA	0.41	3	NA	90	~1.0	33	~1.3	19	110	ND (0.2)	ND (2.0)	11	1.5	ND	ND	0.04	ND	0.54
NA	NA	0.19	~0.10	NA	174	~27	2600	~2.3	530	1100	8.7	ND (2.0)	600	3.2	NA	NA	ND	ND	0.81

>2	NA	1.08	5.5	NA	586	~150	27000	~13	3500	5000	61	ND (2.0)	17000	5.1	ND	ND	0.04	ND	0.37
NA	NA	1.1	6	NA	491	~140	24000	~12	3300	4500	48	ND(2.0)	14000	4.9	ND	ND	0.07	ND	0.36
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
1.7 nessle	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.5 nessle	NA	NA	ND	NA	NA										NA	NA	NA	ND	NA
0.5 nessle	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.5 nessle	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.4 nessle	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.5 nessle	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.6 nessle	NA	NA	ND	NA	NA										NA	NA	NA	ND	NA
ND	NA	ND	ND	NA	33	ND (1.0)	ND (1.0)	ND (0.2)	~5	16	ND (0.2)	ND (2.0)	2	ND (0.2)	ND	ND	~0.02	ND	ND
ND	NA	ND	ND	NA	29	ND (1.0)	ND (1.0)	ND (0.2)	~2.8	9.9	ND (0.2)	ND (2.0)	ND (2.0)	1.5	ND	ND	ND	ND	ND
~0	NA	ND	~0.10	NA	46	ND (1.0)	ND (1.0)	ND (0.2)	ND (1.0)	5.2	ND (0.2)	ND (2.0)	ND (2.0)	ND (0.2)	ND	ND	~0.01	ND	ND
ND	NA	ND	~0.10	NA	43	ND (1.0)	57	ND (0.2)	17	30	ND (0.2)	ND (2.0)	12	ND (0.2)	ND	ND	ND	ND	ND
~1.0	NA	0.24	3	NA	1080	ND (100.0)	6200	ND (20.0)	1600	4300	ND (20.0)	ND (200.0	7710	ND (20.0)	ND	ND	0.04	ND	0.3
~1.0	NA	0.31	2	NA	380	ND (100.0)	5500	ND (20.0)	1400	4200	ND (20.0)	ND (200.0	7200	ND (20.0)	ND	ND	ND	ND	0.29
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	5.00	NA	NA	ND (5.0)	3200	~29	1600	4800	ND (1.0)	ND (10.0)	1600	ND (1.0)	NA	NA	NA	ND	NA
NA	NA	NA	6.00	NA	NA	ND (5.0)	12000	~8.7	1800	890	ND (1.0)	ND (10.0)	5500	ND (1.0)	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.25	NA	NA	0.75	NA	NA										NA	NA	NA	ND	NA
NA	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	NA	~0.08	ND	NA	26	ND (1.0)	9.7	ND (0.2)	~9.9	~9.5	ND (0.2)	ND (2.0)	250	0.52	ND	ND	0.06	ND	ND
ND	NA	0.22	ND	NA	83	ND (1.0)	10	ND (0.2)	~7.3	~9.9	ND (0.2)	ND (2.0)	270	2.6	ND	ND	0.09	ND	ND
ND	NA	ND	ND	NA	72	ND (1.0)	2.9	ND (0.2)	~4.9	~11	ND (0.2)	ND (2.0)	9.2	0.56	ND	ND	ND	ND	0.75
~0.1	NA	ND	ND	NA	154	3.1	26	0.43	~22	58	ND (0.2)	ND (2.0)	290	4	ND	ND	0.53	ND	0.39
NA	NA	ND	NA	NA	69	7	17	1.1	60	59	ND (0.2)	ND (2.0)	1900	0.46	ND	ND	NA	ND	0.36
ND	NA	ND	ND	NA	66	6.3	15	0.93	55	58	ND (0.2)	ND (2.0)	2500	0.48	ND	ND	0.10	ND	0.38
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	6.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	>6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	>6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0.1	NA	ND	ND	NA	48	ND (5.0)	120	2	110	710	ND (1.0)	ND (10.0)	680	ND (1.0)	na	na	~0.0	ND	ND
~0.1	0.9	ND	ND	NA	56	~27	350	~3.1	94	710	ND (1.0)	33	17	ND (1.0)	na	na	~0.0	ND	ND
0.5	1	0.24	1.5	NA	84	~62	1100	~3.7	500	980	39	5	2800	7.4	na	na	~0.0	ND	ND
ND	0.7	0.24	ND	NA	47	ND (5.0)	95	~2.4	60	790	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	na	na	~0.02	ND	ND
ND	0.8	ND	ND	NA	49	ND (5.0)	96	~3.0	69	900	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	NA	NA	ND	ND	ND
0.3	0.6	0.22	0.3	NA	203	ND (5.0)	77	~2.3	67	540	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	NA	NA	ND	ND	ND
NA	NA	NA	ND	NA	NA										NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.15	NA	NA	ND	NA	NA										NA	NA	ND	ND	NA
0.4	NA	NA	0.20	NA	NA										NA	NA	0.13	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.1	NA	NA	ND	NA	NA										NA	NA	0.08	ND	NA
0.5	NA	NA	2.00	NA	NA										NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA										NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.15	NA	NA	ND	NA	NA										NA	NA	~0.02	ND	NA
0.15	NA	NA	ND	NA	NA										NA	NA	0.03	ND	NA
1.5	>3.0	1.11	6	NA	144	ND (10.0)	ND (10.0	ND (2.0)	ND (10.0)	ND (20.0	ND (2.0)	ND (20.0)	40	ND (2.0)	ND	ND	~0.01	ND	0.44
0.3	2.3	0.19	3	NA	80	~11	470	~2.5	150	430	1.9	8.7	1100	2.2	ND	ND	ND	ND	0.6
1	1.6	ND	0.2	NA	52	~3.0	200	~0.89	37	110	0.69	ND (4.0)	250	1.4	ND	ND	0.08	ND	0.45
0.5	2	0.51	1	NA	72	~20	280	~1.6	120	360	2.4	ND (4.0)	680	2.9	ND	ND	ND	ND	0.62
0.5	2.5	0.49	0.3	NA	73	~24	310	~2.0	120	320	2.3	ND (4.0)	670	2.6	ND	ND	0.05	ND	0.66
0.5	>3.0	0.96	1	NA	300	~94	4100	~18	970	5000	31	ND (4.0)	20000	340	ND	ND	0.16	ND	0.48
1.1	NA	NA	6.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~1.1	NA	NA	>6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
2	NA	NA	6.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
2	NA	NA	6.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0	NA	NA	6.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

0.2	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0	NA	NA	2.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0.2	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	0.2	ND	ND	NA	18	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	15	~2.9	ND	ND	~0.01	ND	ND
ND	0.2	ND	ND	NA	19	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	12	~2.2	ND	ND	0.09	ND	ND
~0.1	0.6	ND	0.75	NA	45	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	14	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.08	ND	ND
0.2	0.7	~0.08	0.6	NA	64	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	11	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.08	ND	ND
ND	0.6	ND	0.5	NA	44	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	14	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.06	ND	ND
~0.1	0.65	ND	ND	NA	50	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	7.8	ND (0.4)	ND (4.0)	ND (4.0)	~0.71	ND	ND	0.04	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	1.00	NA	NA	ND (2.0)	ND (2.0)	ND (0.4)	6.4	9.7	ND (0.4)	ND (4.0)	28	3.9	NA	NA	NA	ND	NA
NA	NA	NA	0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	4.00	NA	NA	~80	1400	~4.8	280	960	40	24	6500	28	NA	NA	NA	ND	NA
NA	NA	NA	2.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	0.2	ND	ND	NA	17	ND (2.0)	15	~0.46	7.1	56	ND (0.4)	ND (4.0)	100	4.7	ND	ND	0.14	ND	ND
~0.25	1.6	ND	0.75	NA	92	~3.3	81	ND (0.4)	14	100	0.55	ND (4.0)	700	2.9	ND	ND	0.11	ND	0.58
1.75	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.21	ND	NA
clear	1.35	ND	ND	NA	98	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	7	0.56	ND	ND	0.38	ND	0.75
~0.1	0.9	ND	ND	NA	73	ND (2.0)	3.8	ND (0.4)	ND (2.0)	20	ND (0.4)	ND (4.0)	23	3.2	ND	ND	0.15	ND	0.44
0.2	0.6	ND	~0.10	NA	68	ND (2.0)	40	~0.78	6.6	28	1.6	ND (4.0)	260	0.54	ND	ND	~0.02	ND	0.47
0.2	0.7	ND	~0.10	NA	69	ND (2.0)	41	~0.82	7	31	1.6	ND (4.0)	250	0.6	ND	ND	~0.02	ND	0.47
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.00	NA	NA										NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.60	NA	NA										NA	NA	NA	ND	NA
NA	NA	NA	2.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	5.00	NA	NA										NA	NA	NA	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0.1	0.5	0.09	0.2	NA	110	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	~1.2	ND (4.0)	13	1.6	ND	ND	0.19	ND	ND
ND	0.4	ND	ND	NA	64	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	~0.88	ND (4.0)	14	1.4	ND	ND	0.18	ND	ND
ND	0.5	ND	ND	NA	68	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	~1.2	ND (4.0)	15	1.5	ND	ND	NA	ND	ND
ND	0.8	~0.08	0.25	NA	77	ND (2.0)	ND (2.0)	ND (0.4)	4.4	ND (4.0)	ND (0.4)	ND (4.0)	ND (4.0)	1.2	ND	ND	0.11	ND	ND
~0.1	0.6	0.1	0.4	NA	101	ND (2.0)	ND (2.0)	ND (0.4)	53	5200	~0.52	ND (4.0)	ND (4.0)	17	ND	ND	0.10	ND	ND
ND	0.8	ND	0.5	NA	89	ND (2.0)	ND (2.0)	ND (0.4)	6.5	260	ND (0.4)	ND (4.0)	ND (4.0)	19	NA	NA	0.13	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.6	NA	NA	4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0.1	1.1	0.13	0.75	NA	148	~49	280	~4.7	100	230	7.7	ND (8.0)	3800	5.7	ND	ND	0.05	ND	ND
ND	0.3	ND	ND	NA	42	ND (4.0)	10	ND (0.8)	10	96	ND (0.8)	ND (8.0)	39	4.1	ND	ND	0.07	ND	ND
ND	0.4	ND	ND	NA	46	ND (4.0)	ND (4.0)	ND (0.8)	5.5	56	ND (0.8)	ND (8.0)	12	14	ND	ND	0.03	ND	ND
>2	>3	23.1	>6	NA	4420	~1800	65000	~51	11000	66000	280	ND (440.0	340000	140	ND	ND	ND	ND	0.56
>2	>3	15	>6	NA	3630	ND (200.0)	590000	ND (40.0	7300	4400	ND (40.0)	ND (400.0	110000	ND (40.0)	ND	ND	ND	ND	0.55
>2	>3	14.7	>6	NA	3390	ND (200.0)	600000	ND (40.0	7500	4700	ND (40.0)	ND (400.0	110000	ND (40.0)	ND	ND	ND	ND	0.62
0.25	1.4	0.18	2	NA	201	ND (20.0)	69	~4.0	280	180	ND (4.0)	ND (40.0)	5900	ND (4.0)	ND	ND	0.04	ND	ND
ND	0.3	ND	ND	NA	46	ND (3.8)	9.9	ND (0.8)	8.2	39	ND (0.8)	ND (7.7)	12	4.6	ND	ND	0.05	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	1.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31	ND	NA
NA	NA	NA	4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	0.8	ND	ND	NA	45	ND (2.0)	820	4	23	1400	ND (0.4)	ND (4.0)	180	~2.2	ND	ND	ND	ND	ND
>2	>3	9.3	6	NA	31	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	24	~1.2	ND	ND	0.08	ND	0.62
2	>3	14.7	>3	NA	18	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	10	~1.1	ND	ND	0.08	ND	1.2

NA	NA	13.8	NA	NA	23	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	15	~0.55	ND	ND	NA	ND	1.2
2	>3	9.8	>3	NA	45	ND (2.2)	ND (2.2)	ND (0.4)	ND (2.2)	ND (4.4)	ND (0.4)	ND (4.4)	14	~1.3	ND	ND	~0.0	ND	0.64
2	>3	16.7	>3	NA	25	ND (2.2)	ND (2.2)	ND (0.4)	ND (2.2)	ND (4.4)	ND (0.4)	ND (4.4)	7.5	~1.1	ND	ND	0.07	ND	1.2
ND	0.8	0.11	0.35	NA	42	~4.4	250	~0.79	62	170	1.4	ND (4.0)	480	5.5	ND	ND	0.08	ND	0.29
~0.1	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
~0.1	0.4	0.31	ND	NA	27	ND (2.0)	38	ND (0.4)	4.4	16	ND (0.4)	ND (4.0)	440	6	ND	ND	~0.02	ND	ND
ND	0.4	ND	ND	NA	49	ND (2.0)	69	ND (0.4)	26	850	2.7	ND (4.0)	240	3.5	ND	ND	0.10	ND	ND
ND	0.4	ND	ND	NA	47	ND (2.0)	57	ND (0.4)	24	820	2.2	ND (4.0)	270	3.8	ND	ND	0.10	ND	ND
ND	0.4	0.1	ND	NA	20	ND (2.0)	3.1	ND (0.4)	7	30	ND (0.4)	ND (4.0)	61	5	ND	ND	0.06	ND	ND
ND	0.4	ND	ND	NA	39	ND (2.0)	93	ND (0.4)	14	17	ND (0.4)	ND (4.0)	66	2.5	ND	ND	0.07	ND	ND
~0.1	1.1	ND	0.50	NA	211	ND (2.2)	ND (2.2)	ND (0.4)	3.8	27	ND (0.4)	ND (4.3)	76	ND (0.4)	ND	ND	0.06	ND	ND
2	2.2	ND	2.00	NA	121	~4.7	600	ND (0.5)	100	750	2.9	ND (4.6)	1300	4.6	ND	ND	0.03	ND	ND
ND	0.2	ND	ND	NA	~243	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	0.32
ND	0.4	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
ND	0.8	ND	~0.10	NA	56	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	~0.01	ND	ND
ND	0.9	ND	0.50	NA	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.10	ND	ND
ND	0.8	ND	ND	NA	38	na	na	na	na	na	na	na	na	na	ND	ND	~0.02	ND	ND
ND	0.8	ND	ND	NA	36	na	na	na	na	na	na	na	na	na	ND	ND	0.08	ND	ND
ND	0.8	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	~0.02	ND	NA
ND	1.6	0.22	2.00	NA	35	na	na	na	na	na	na	na	na	na	ND	ND	0.03	ND	ND
0.8	2.6	NA	5.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.25	ND	NA
ND	0.3	ND	ND	NA	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	~0.01	ND	ND
ND	0.7	ND	ND	NA	78	ND (2.0)	19	ND (0.4)	~8	25	ND (0.4)	ND (4.0)	42	1.1	ND	ND	0.03	ND	ND
~0.1	0.6	ND	ND	NA	65	na	na	na	na	na	na	na	na	na	ND	ND	0.08	ND	ND
ND	0.4	ND	ND	NA	20	ND (2.0)	240	ND (0.4)	~20	40	ND (0.4)	ND (4.0)	16000	4.9	ND	ND	0.09	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	0.4	ND	ND	NA	9	ND (2.1)	11	ND (0.4)	ND (2.1)	17	ND (0.4)	ND (4.2)	82	6.3	ND	ND	0.11	ND	ND
ND	0.4	ND	ND	NA	22	ND (2.0)	11	ND (0.4)	~2.5	20	ND (0.4)	ND (4.0)	64	6.1	ND	ND	0.09	ND	ND
>2	>3	2.26	6	NA	421	~310	6900	~1.6	~5600	5500	6.3	ND (4.0)	28000	2.4	ND	ND	0.04	ND	0.22
ND	0.6	ND	~0.10	NA	28	ND (2.1)	10	ND (0.4)	~10	45	~0.28	ND (4.2)	280	3.4	ND	ND	0.06	ND	ND
ND	0.2	ND	~0.1	NA	48	ND (1.0)	3.8	ND (0.2)	2.4	15	ND (0.2)	11	~210	ND (0.2)	ND	ND	0.04	ND	ND
ND	~0.1	ND	~0.30	NA	25	na	na	na	na	na	na	na	na	na	ND	ND	0.05	ND	ND
ND	~0.1	ND	ND	NA	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
ND	ND	ND	ND	NA	39	na	na	na	na	na	na	na	na	na	ND	ND	0.13	ND	ND
ND	1	0.15	0.50	NA	109	~27	500	~0.95	480	710	6.4	89	~8700	ND (0.2)	ND	ND	0.17	ND	ND
ND	1.6	0.17	0.70	NA	103	~30	550	~0.92	560	770	6.4	100	~9400	ND (0.2)	ND	ND	0.05	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	1.1	28	4.1	~20	3.1	6	34	0.7	ND (4.0)	490	1.4	ND	ND	NA	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	0.95	37	4.8	190	4.6	12	70	1.2	ND (4.0)	1400	0.93	ND	ND	NA	ND	ND
NA	NA	NA	ND	0.96	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND	ND
NA	NA	NA	ND	0.78	47	12	280	4.7	30	170	2.9	ND (4.0)	2700	ND (0.4)	ND	ND	NA	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	3	9.1	ND (2.0)	ND (2.0)	0.86	ND (2.0)	5.4	ND (0.4)	ND (4.0)	15	1.2	ND	ND	NA	ND	ND
NA	NA	NA	3	1.6	185	250	15000	3.3	170	520	67	ND (5.0)	15000	ND (0.5)	ND	ND	0.08	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	1.6	21	ND (2.0)	ND (2.0)	1.1	5.8	11	0.43	5.4	230	1.3	ND	0.18	0.26	ND	ND
NA	NA	NA	ND	1.1	52	ND (2.5)	ND (2.5)	1	ND (2.5)	ND (5.0)	ND (0.5)	ND (5.0)	14	ND (0.5)	ND	ND	0.05	ND	ND
NA	NA	NA	ND	0.57	56	14	76	4.3	14	120	1.6	ND (4.0)	1900	0.43	ND	ND	NA	ND	ND
NA	NA	NA	2	1.2	28	2.3	21	21	7.9	170	ND (0.4)	ND (4.0)	360	0.85	ND	ND	0.06	ND	ND
NA	NA	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	3	1.4	25	ND (2.0)	27	23	6.4	220	1.4	ND (4.0)	370	0.61	ND	ND	ND	ND	ND
NA	NA	NA	3	1.4	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
NA	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	3	1.4	23	ND (2.0)	29	19	6.5	250	0.63	ND (4.0)	330	0.65	ND	ND	0.04	ND	ND
NA	NA	NA	ND	1.4	22	ND (2.5)	2.8	8.2	ND (2.5)	44	ND (0.5)	ND (5.0)	75	1.8	ND	ND	ND	ND	ND
NA	NA	NA	0.5	2	23	ND (2.0)	5.8	6.7	ND (2.0)	37	ND (0.4)	6.5	1300	4.8	ND	ND	0.04	ND	ND
NA	NA	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	1	0.59	36	ND (2.0)	7.9	10	ND (2.0)	35	ND (0.4)	16	1000	1.2	ND	ND	ND	ND	ND
NA	NA	NA	ND	2.7	28	3.2	120	8.1	19	85	ND (0.5)	7.2	1500	8.6	ND	ND	0.06	ND	ND
NA	NA	NA	ND	0.59	58	8.5	53	10	12	130	ND (0.4)	ND (4.0)	750	0.42	ND	ND	0.09	ND	ND
NA	NA	NA	2	NA	NA	ND (2.0)	2900	5.8	470	190	13	ND (4.0)	810	1.9	NA	NA	NA	ND	NA
NA	NA	NA	ND	0.6	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.04	ND	ND
NA	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.25	0.37	54	9.1	100	7.7	13	73	0.65	ND (4.0)	1200	0.6	ND	ND	0.05	ND	ND
NA	NA	NA	ND	0.35	54	10	14	6.7	9	72	0.6	ND (4.0)	920	0.5	ND	ND	ND	ND	ND
NA	NA	NA	ND	0.31	55	8	5.4	5.7	7.3	35	ND (0.4)	ND (4.0)	590	ND (0.4)	ND	ND	0.04	ND	ND
NA	NA	NA	0.75	0.52	129	32	23	12	19	98	0.84	ND (4.0)	2700	1.9	ND	ND	ND	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	1.4	93	ND (2.5)	2.6	1.5	ND (2.5)	5.8	ND (0.5)	ND (5.0)	390	ND (0.5)	ND	ND	ND	ND	ND
NA	NA	NA	3	NA	NA	4.3	43	2.1	14	93	1.4	ND (5.0)	1700	2.9	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.5)	ND (2.5)	9.3	8.3	300	ND (0.5)	ND (5.0)	160	1.4	NA	NA	ND	ND	NA
NA	NA	NA	4	NA	29	ND (2.0)	2.3	1.5	ND (2.0)	6.7	ND (0.4)	ND (4.0)	96	0.72	NA	NA	ND	ND	NA
NA	NA	NA	4	NA	22	ND (2.5)	ND (2.5)	1.3	ND (2.5)	5.6	ND (0.5)	ND (5.0)	100	0.77	NA	NA	0.06	ND	NA
NA	NA	NA	4	NA	19	ND (2.0)	3.3	1.7	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	29	0.63	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	38	ND (2.0)	ND (2.0)	7.5	5.9	140	ND (0.4)	ND (4.0)	80	1.4	NA	NA	ND	ND	NA
NA	NA	NA	0.1	NA	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
NA	NA	NA	0.25	NA	73	ND (2.0)	2.5	17	6.4	61	ND (0.4)	ND (4.0)	230	1.2	NA	NA	0.11	ND	NA
NA	NA	NA	0.1	NA	58	3.7	30	17	7.7	190	1.3	ND (5.0)	560	0.67	NA	NA	ND	ND	NA
NA	NA	NA	0.1	NA	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA

NA	NA	NA	ND	NA	49	5	64	18	11	160	ND (0.5)	ND (5.0)	600	0.68	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	69	ND (2.0)	53	17	7.5	180	ND (0.4)	ND (4.0)	1300	0.84	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	70	7.1	210	19	41	380	1.7	ND (4.0)	2700	3.6	NA	NA	0.15	ND	NA
NA	NA	NA	0.1	NA	108	21	56	16	54	190	9.3	ND (4.0)	3900	1.4	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	70	6.2	130	13	60	720	ND (0.4)	ND (4.0)	15000	ND (0.4)	NA	NA	0.07	ND	NA
NA	NA	NA	1	NA	118	64	350	22	140	530	17	ND (4.0)	6100	3	NA	NA	0.05	ND	NA
NA	NA	NA	0.25	NA	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
NA	NA	NA	0.25	NA	79	45	1200	11	300	1100	4.8	ND (5.0)	12000	4.3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.25	NA	23	ND (2.0)	ND (2.0)	4.3	4.2	39	ND (0.4)	ND (4.0)	37	ND (0.4)	NA	NA	0.71	1/0.3	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	2	NA	205	43	99	14	67	230	1.3	ND (4.0)	3000	3.3	NA	NA	0.06	ND	NA
NA	NA	NA	2	NA	180	33	100	11	47	190	1	ND (4.0)	2000	2.8	NA	NA	~0.02	ND	NA
NA	NA	NA	0.25	NA	NA	ND (2.5)	ND (2.5)	2.4	ND (2.5)	11	ND (0.5)	7.4	30	6.6	NA	NA	0.11	ND	NA
NA	NA	NA	ND	NA	84	3.1	19	2.8	5.1	22	0.63	ND (4.0)	440	ND (0.4)	NA	NA	0.08	ND	NA
NA	NA	NA	1	NA	93	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	0.06	ND	NA
NA	NA	NA	0.25	NA	36	ND (2.0)	ND (2.0)	0.45	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
NA	NA	NA	6	NA	NA	14	4900	80	400	1900	13	ND (4.0)	24000	1.8	NA	NA	0.04	ND	NA
NA	NA	NA	0.7	NA	NA	4.7	210	53	26	180	0.56	ND (4.0)	1200	1.8	NA	NA	0.03	ND	NA
NA	NA	NA	2	NA	NA	140	3900	100	850	1800	3.5	ND (4.0)	24000	13	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	8	6.6	5.9	54	ND (0.4)	ND (4.0)	78	1.3	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	3.4	50	63	26	510	1.3	ND (4.0)	90	1.4	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	4.3	33	14	17	180	ND (0.5)	ND (5.0)	120	1.3	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	5.4	68	14	26	200	0.7	ND (5.0)	510	3.2	NA	NA	0.05	ND	NA
NA	NA	NA	6	NA	NA	ND (2.0)	8.7	33	9.7	220	ND (0.4)	ND (4.0)	47	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (4.0)	7.5	16	5.3	51	ND (0.8)	ND (8.0)	ND (8.0)	3.3	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (4.0)	28	78	24	400	ND (0.8)	ND (8.0)	130	3.5	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	ND (5.0)	24	49	18	310	ND (1.0)	ND (10.0)	130	3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.5)	ND (2.5)	35	6	130	3.3	ND (5.0)	38	4.8	NA	NA	0.15	ND	NA
NA	NA	NA	0.75	NA	NA	41	81	62	280	940	ND (0.5)	ND (5.0)	1800	5	NA	NA	0.6	ND	NA
NA	NA	NA	6	NA	NA	610	1300	1100	2000	27000	320	ND (10.0)	17000	240	NA	NA	0.13	ND	NA
NA	NA	NA	0.75	NA	NA	450	14	19	31	170	1.3	ND (4.0)	870	170	NA	NA	ND	ND	NA
NA	NA	NA	1	NA	NA	850	99	ND (0.5)	6.1	20	1.3	ND (5.0)	17	170	NA	NA	0.06	ND	NA
NA	NA	NA	0.25	NA	NA	15	ND (2.0)	2.9	5.5	17	ND (0.4)	ND (4.0)	ND (4.0)	87	NA	NA	0.07	ND	NA
NA	NA	NA	1	NA	NA	670	140	ND (0.4)	2.1	5.8	0.89	ND (4.0)	31	240	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	1800	41000	1300	7300	33000	510	ND (20.0)	550000	280	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	410	ND (2.0)	3.7	6.9	24	0.64	ND (4.0)	14	180	NA	NA	0.18	ND	NA
NA	NA	NA	6+	NA	NA	1400	44000	1900	6300	51000	760	ND (20.0)	580000	300	NA	NA	ND	ND	NA
NA	NA	NA	6+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	36	ND (2.0)	6.1	6.7	ND (2.0)	5.9	ND (0.4)	ND (4.0)	73	ND (0.4)	NA	NA	0.17	ND	NA
NA	NA	NA	0.25	NA	30	ND (2.5)	9.1	47	3.8	150	2.1	ND (5.0)	10	4.5	NA	NA	0.1	ND	NA
NA	NA	NA	ND	NA	34	ND (2.0)	ND (2.0)	0.99	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	10	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	28	18	ND (2.0)	1.8	2.8	6.3	2.1	ND (4.0)	49	3.9	NA	NA	0.22	ND	NA
NA	NA	NA	ND	NA	17	ND (2.0)	4.5	5.5	4.7	40	1	ND (4.0)	3000	ND (4.0)	NA	NA	ND	ND	NA
NA	NA	NA	6+	NA	152	ND (2.0)	ND (2.0)	2.8	ND (2.0)	7.3	0.43	ND (4.0)	17	ND (0.4)	NA	NA	0.11	ND	NA
NA	NA	NA	ND	NA	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.09	ND	NA
NA	NA	NA	ND	NA	30	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	80	ND (0.4)	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	31	ND (2.5)	ND (2.5)	1.4	ND (2.5)	ND (5.0)	ND (0.5)	ND (5.0)	170	ND (0.5)	NA	NA	0.04	ND	NA
NA	NA	NA	0.25	NA	119	10	ND (2.0)	2	2.2	28	3	ND (4.0)	300	300	NA	NA	ND	ND	NA
NA	NA	NA	1	NA	173	32	1100	30	360	1200	1.9	ND (4.0)	4700	13	NA	NA	0.03	ND	NA
NA	NA	NA	0.5	NA	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	ND	NA
NA	NA	NA	3	NA	342	29	490	27	95	1200	0.56	ND (5.0)	2600	2.7	NA	NA	0.56	ND	NA
NA	NA	NA	0.75	NA	97	ND (2.0)	62	27	5.1	350	0.66	ND (4.0)	8000	2.1	NA	NA	0.03	ND	NA
NA	NA	NA	2	NA	112	23	87	12	18	200	4.6	ND (4.0)	790	1.3	NA	NA	ND	ND	NA
NA	NA	NA	2	NA	32	ND (2.0)	ND (2.0)	3.3	ND (2.0)	110	ND (0.4)	ND (4.0)	22	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	45	ND (2.5)	ND (2.5)	1.8	ND (2.5)	6.3	ND (0.5)	ND (5.0)	60	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	0.3	NA	59	ND (2.0)	ND (2.0)	1.3	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	92	ND (0.4)	NA	NA	0.05	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	ND	NA
NA	NA	NA	0.3	NA	46	ND (2.0)	ND (2.0)	8.9	ND (2.0)	5.6	ND (0.4)	ND (4.0)	210	1.6	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	32	ND (2.0)	ND (2.0)	9.9	ND (2.0)	8.6	ND (0.4)	ND (4.0)	35	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2	ND	NA
NA	NA	NA	0.4	NA	27	ND (2.0)	ND (2.0)	8.7	ND (2.0)	7.3	ND (0.4)	ND (4.0)	27	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	53	30	5.3	31	18	82	3.9	4.6	270	10	NA	NA	0.15	ND	NA
NA	NA	NA	4	NA	27	ND (2.0)	ND (2.0)	11	ND (2.0)	55	ND (0.4)	ND (4.0)	45	0.42	NA	NA	0.08	ND	NA
NA	NA	NA	>6	NA	23	ND (2.0)	ND (2.0)	11	ND (2.0)	79	ND (0.4)	ND (4.0)	67	ND (4.0)	NA	NA	0.07	ND	NA
NA	NA	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	26	ND (2.5)	11	8.6	13	470	ND (0.5)	ND (5.0)	35	1.2	NA	NA	0.08	ND	NA
NA	NA	NA	5	NA	35	ND (2.5)	ND (2.5)	2.7	ND (2.5)	ND (5.0)	ND (0.5)	ND (5.0)	470	ND (0.5)	NA	NA	0.07	ND	NA
NA	NA	NA	6	NA	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	ND	NA
NA	NA	NA	ND	NA	121	ND (2.5)	ND (2.5)	1.2	ND (2.5)	6.6	0.5	ND (5.0)	6.3	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	2	NA	152	46	610	23	200	1400	1.2	ND (4.0)	2000	12	NA	NA	ND	ND	NA
NA	NA	NA	5	NA	151	76	1700	71	270	1200	ND (0.4)	ND (4.0)	3800	ND (0.4)	NA	NA	0.37	ND	NA
NA	NA	NA	5	NA	147	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.37	ND	NA
NA	NA	NA	0.75	NA	74	29	11	3.9	53	40	ND (0.4)	ND (4.0)	750	1.3	NA	NA	0.04	ND	NA
NA	NA	NA	5	NA	166	8.7	63	23	41	160	ND (0.4)	ND (4.0)	790	4.5	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	141	4.7	59	17	28	130	ND (0.4)	ND (4.0)	24	3.5	NA	NA	0.06	ND	NA
NA	NA	NA	2	NA	234	230	3900	35	430	3400	11	ND (4.0)	38000	15	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	25	ND (2.5)	ND (2.5)	16	ND (2.5)	17	ND (0.5)	ND (5.0)	20	ND (0.5)	NA	NA	0.06	ND	NA
NA	NA	NA	0.2	NA	12	ND (2.5)	ND (2.5)	3.7	ND (2.5)	54	ND (0.5)	ND (5.0)	ND (5.0)	ND (0.5)	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	21	ND (2.0)	3	12	17	65	ND (0.4)	ND (4.0)	32	1.7	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	6.3	ND (2.0)	ND (2.0)	10	6.6	26	ND (0.4)	ND (4.0)	ND (4.0)	1.5	NA	NA	0.07	ND	NA
NA	NA	NA	ND	NA	24	ND (2.0)	ND (2.0)	9.3	4.7	32	ND (0.4)	ND (4.0)	ND (4.0)	1.2	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	52	5.8	22	2.3	15	150	ND (0.4)	ND (4.0)	18	2.6	NA	NA	0.05	ND	NA

NA	NA	NA	ND	NA	23	ND (2.0)	ND (2.0)	6.3	12	45	ND (0.4)	ND (4.0)	5.1	2.1	NA	NA	0.04	ND	NA
NA	NA	NA	0.3	NA	51	11	12	7.9	110	410	ND (0.4)	ND (4.0)	11000	0.55	NA	NA	0.2	ND	NA
NA	NA	NA	0.1	NA	40	ND (2.5)	ND (2.5)	3.3	4.7	36	ND (0.5)	ND (5.0)	44	1.8	NA	NA	0.09	ND	NA
NA	NA	NA	ND	NA	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	100	39	4.6	42	30	490	ND (0.4)	8.1	4.4	2.4	NA	NA	0.09	ND	NA
NA	NA	NA	0.75	NA	84	15	14	20	280	330	ND (0.4)	ND (4.0)	1400	1.4	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	25	91	31	32	31	140	ND (0.5)	ND (5.0)	48	2.3	NA	NA	ND	ND	NA
NA	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	ND	NA
NA	NA	NA	4	NA	93	320	240	77	700	1300	13	5.9	1100	5.7	NA	NA	0.05	ND	NA
NA	NA	NA	4	NA	95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.4	NA	34	ND (2.0)	9.9	22	27	750	ND (0.4)	ND (4.0)	4	ND (0.4)	NA	NA	0.13	ND	NA
NA	NA	NA	ND	NA	33	ND (2.0)	ND (2.0)	3.6	18	470	ND (0.4)	ND (4.0)	ND (4.0)	0.4	NA	NA	0.04	ND	NA
NA	NA	NA	3	NA	NA	ND (4.0)	17	35	41	210	ND (0.8)	ND (8.0)	ND (8.0)	ND (0.8)	NA	NA	0.07	ND	NA
NA	NA	NA	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08	ND	NA
NA	NA	NA	ND	NA	47	ND (2.5)	ND (2.5)	3.4	ND (2.5)	8.1	ND (0.5)	ND (5.0)	ND (5.0)	0.76	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	ND	NA
NA	NA	NA	4	NA	NA	ND (2.0)	ND (2.0)	3.8	5.2	18	3.6	ND (4.0)	11	1.8	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	7.1	15	73	1.9	ND (4.0)	ND (4.0)	4.3	NA	NA	0.05	ND	NA
NA	NA	NA	ND	NA	72	ND (2.0)	ND (2.0)	7.8	15	110	ND (0.4)	6	ND (4.0)	6.6	NA	NA	0.11	ND	NA
NA	NA	NA	4	NA	NA	ND (2.0)	16	14	10	44	ND (0.4)	6.5	12	18	NA	NA	0.06	ND	NA
NA	NA	NA	0.1	NA	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	33	ND (2.5)	ND (2.5)	11	17	100	ND (0.5)	5.4	ND (5.0)	4.8	NA	NA	0.08	ND	NA
NA	NA	NA	ND	NA	25	ND (2.5)	ND (2.5)	2.3	5.6	24	ND (0.5)	17	ND (5.0)	7.3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	21	2.1	29	41	85	240	1.9	ND (4.0)	42	4.9	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	ND	NA
NA	NA	NA	1	NA	40	19	ND (2.0)	1.3	4.8	11	ND (0.4)	130	ND (4.0)	3.7	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	NA	NA
NA	NA	NA	0.25 (0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	12	ND (2.0)	ND (2.0)	1.3	10	7.9	ND (2.0)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	0.03	ND	NA
NA	NA	NA	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	55	ND (2.0)	ND (2.0)	ND (0.4)	2.7	ND (4.0)	ND (2.0)	ND (4.0)	ND (4.0)	0.74	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	68	ND (2.0)	ND (2.0)	ND (0.4)	11	7.8	ND (2.0)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	0.1	NA	62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	58	ND (2.0)	ND (2.0)	ND (0.4)	12	12	ND (2.0)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	55	ND (2.5)	ND (2.5)	ND (0.5)	11	4.5	ND (2.5)	ND (5.0)	ND (5.0)	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	97	ND (2.5)	ND (2.5)	16	24	110	ND (2.5)	ND (5.0)	7.3	0.76	NA	NA	ND	ND	NA
NA	NA	NA	2	NA	285	ND (2.0)	550	82	40	290	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	>6	NA	53	ND (2.0)	ND (2.0)	31	15	110	ND (0.4)	ND (4.0)	ND (4.0)	5.6	NA	NA	ND	ND	NA
NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	66	ND (2.0)	7	4.5	11	33	ND (0.4)	ND (4.0)	4.6	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	65	ND (2.5)	ND (2.5)	0.65	5.2	ND (5.0)	ND (0.5)	ND (5.0)	ND (5.0)	13	NA	NA	0.03	ND	NA
NA	NA	NA	0.25	NA	90	14	340	8.4	220	3000	ND (0.4)	ND (4.0)	980	6.5	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.75	NA	57	ND (2.0)	ND (2.0)	0.75	4.4	5.6	ND (0.4)	ND (4.0)	7.1	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	89	ND (2.0)	ND (2.0)	3.8	11	46	ND (0.4)	ND (4.0)	ND (4.0)	1.3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	69	ND (2.5)	ND (2.5)	1.9	39	48	ND (0.5)	ND (5.0)	ND (5.0)	ND (0.5)	NA	NA	0.07	ND	NA
NA	NA	NA	0.25	NA	NA	ND (20.0)	99	21	99	550	ND (4.0)	ND (40.0)	ND (40.0)	ND (4.0)	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.3	NA	NA	19	190	13	260	730	ND (0.8)	ND (8.0)	ND (8.0)	6.8	NA	NA	0.04	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	5	NA	NA	150	610	150	1400	940	ND (0.4)	ND (4.0)	120	11	NA	NA	0.08	ND	NA
NA	NA	NA	4	NA	NA	190	1100	43	980	12000	ND (4.0)	ND (40.0)	1200	200	NA	NA	ND	ND	NA
NA	NA	NA	0.1	NA	NA	ND (10.0)	490	16	160	270	ND (2.0)	ND (20.0)	54	18	NA	NA	0.14	ND	NA
NA	NA	NA	ND	NA	NA	6.3	46	14	42	510	ND (0.5)	ND (4.7)	92	3.6	NA	NA	0.11	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	0.52	4.8	23	ND (0.4)	ND (4.0)	ND (4.0)	6.6	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	5.4	37	3.7	19	82	ND (0.4)	ND (4.2)	36	3.2	NA	NA	0.08	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	14	1.8	12	44	ND (0.4)	ND (4.0)	8.5	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	4	NA	NA	120	4500	37	2100	4300	ND (4.0)	ND (40.0)	~1500	82	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	2.4	8.4	6.6	210	120	ND (0.5)	ND (4.8)	~97	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	0.84	2.8	ND (4.0)	ND (0.4)	ND (4.0)	~4.3	0.52	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	2.2	21	1	9.4	50	ND (0.5)	ND (4.8)	~15	0.66	NA	NA	0.03	ND	NA
NA	NA	NA	0.75	NA	NA	13	310	19	1100	~48000	ND (0.4)	ND (4.0)	~29	68	NA	NA	0.03	ND	NA
NA	NA	NA	0.4	NA	NA	46	630	13	470	790	ND (0.8)	ND (8.0)	~81	ND (0.8)	NA	NA	ND	ND	NA
NA	NA	NA	0.3	NA	NA	ND (2.0)	110	16	90	130	ND (0.4)	ND (4.0)	ND (4.0)	1.7	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	ND (10.0)	120	8.1	46	~130	ND (2.0)	ND (20.0)	ND (20.0)	ND (2.0)	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	ND (10.0)	~6.7	2.4	12	~22	ND (2.0)	ND (20.0)	20	ND (2.0)	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	NA	ND (10.0)	ND (10.0	2.6	10	ND (20.0)	ND (2.0)	ND (20.0)	ND (20.0)	ND (2.0)	NA	NA	ND	ND	NA
NA	NA	NA	3	NA	NA	ND (10.0)	47	16	13	~130	14	ND (20.0)	20	ND (2.0)	NA	NA	0.04	ND	NA
NA	NA	NA	3	NA	NA	ND (10.0)	1800	190	400	~2700	4.3	ND (20.0)	180	ND (2.0)	NA	NA	ND	ND	NA
NA	NA	NA	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	3	NA	NA	ND (10.0)	270	970	170	~4100	ND (2.0)	ND (20.0)	ND (20.0)	ND (2.0)	NA	NA	0.03	ND	NA
NA	NA	NA	6	NA	NA	ND (10.0)	330	260	130	~4100	84	34	910	ND (2.0)	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	1	NA	NA	ND (10.0)	320	99	110	~2000	ND (2.0)	ND (20.0)	410	3.8	NA	NA	ND	ND	NA
NA	NA	NA	0.5	NA	NA	ND (10.0)	81	280	100	~3200	38	ND (20.0)	64	ND (2.0)	NA	NA	0.06	ND	NA
NA	NA	NA	>6	NA	NA	2200	29000	360	12000	~69000	200	ND (1000.0	20000	ND (100.0)	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	1.9	~1.6	~16	ND (0.4)	ND (4.0)	~2.9	0.5	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	2.2	4.7	~11	ND (0.4)	ND (4.0)	4.4	0.46	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	2.2	2.4	7.5	~52	ND (0.4)	16	ND (4.0)	ND (0.4)	NA	NA	0.04	ND	NA

			Coordinates				YSI Meter				Weather		
ride	Potassium (mg/L)						Salinity	Temp	Cond uctivit	Rain Gauge	24hrs	48hrs	Wet/Dry?
DR-850	Alpha	Field	GPS North(+)	GPS West (-)	Comments	Additional Location Information	ppt	C	uS	Location	inches	inches	
NA	NA	NA	42.461342	71.075691	Corner of Otis and Ch	4 gal/min flow est, Mu	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.4733306	71.1187503	unnamed stream in W	No odor	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.4764251	71.1182001	Aberjona mainstem in	No odor	na	na	na	Bedford	0.18	0.18	Wet
NA	NA	NA	42.4770646	71.1175936	Sweetwater Brook jus	strong strawberry jello	na	na	na	Bedford	0.18	0.18	Wet
NA	NA	NA	42.477141	71.1176671	Aberjona upstream o	strong strawberry jello	na	na	na	Bedford	0.18	0.18	Wet
NA	NA	NA	42.4787841	71.1131562	Sweetwater Brook we	Slight musty odor	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.4824877	71.1060371	Sweetwater Brook @	No odor	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.4826072	71.1046187	Unnamed tributary to	Medium sewage odor	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @	Duplicate	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @	Slight odor coming fro	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.743207	71.208453	walked in from small	Dry weather during sa	na	na	na		0.43		Wet
NA	NA	NA	42.755268	71.207933	Walked in behind autoparts/glass stor on righ		na	na	na		0.43		Wet
NA	NA	NA	42.762503	71.222746	Parked at Lancelot Court apartments behind		na	na	na		0.43		Wet
NA	NA	NA	42.763121	71.232673	Parked at Uncle Bob's storage on left off So.		na	na	na		0.43		Wet
NA	NA	NA	42.763121	71.232673	Parked at Uncle Bob's storage on left off So.		na	na	na		0.43		Wet
NA	NA	NA	42.767438	71.223016	Parked behind Kohl's		na	na	na		0.43		Wet
NA	NA	NA	42.774045	71.224331	Parked at Salem Man	No noticable odor to s	na	na	na		0.43		Wet
NA	NA	NA	42.774065	71.224326	Parked at Salem Man	No noticable odor to s	na	na	na		0.43		Wet
NA	NA	NA	42.778121	71.227147	Parked across from n	No noticable odor to s	na	na	na		0.43		Wet
NA	NA	NA	42.776593	71.231045	West side of Rt 38 wh	No noticable odor to s	na	na	na		0.43		Wet
NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis	culvert to right not flov	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.513504	71.138870	74 Commerce Way (N	No odor	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.515744	71.136289	Marshall's shipping lo	Marshalls shipping lo	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.516016	71.136885	Across Street from las	some geese swimmin	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.517193	71.141968	Turn on Atlantic Ave p	No odor	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.513758	71.144110	where hulls brook crosses under New Boston		na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.518563	71.146526	New Boston St where	water very turbid sligh	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.518739	71.146411	Opposite stream from	Very turbid, foul odor	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.518739	71.146411	Duplicate	Duplicate	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.520981	71.147709	Just upstream from M	were stream exits outf	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.517881	71.150535	Just upstream from M	walked in about 1-2 m	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.4826072	71.1046187	Unnamed tributary to	Musty odor	na	na	na	Boston-Logan	0.07	0.07	Dry
NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @	No odor	na	na	na	Boston-Logan	0.07	0.07	Dry
NA	NA	NA	42.484141	71.103935	Inside culvert upstrea	sampled largest pipe -	na	na	na	Boston-Logan	0.07	0.07	Dry
NA	NA	NA	42.485896	71.120882	Wash Cir, just off Wa	downstream side	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.491300	71.127027	Operator of AMR gran	Lots of seeds in the w	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.493138	71.124117	Washington street corner of Salem St		na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.491580	71.128834	1921yr culvert	Downstream side	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.495445	71.134031	behind United Station	Lots of trash in the ar	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.495411	71.133994	closer to culvert than	Very turbid water, bro	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.500145	71.141333	Olympia Ave	On N. side grass clipp	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.501121	71.134909	near 60 Olympia Ave	Pretty clear water	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.501121	71.134909	Duplicate	Duplicate	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis	Sampled main stream	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.383054	71.030131	Condor Urban Wild, o	Sewage odor, plaque	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.382423	71.027076	Upstream of Condor U	White plaque coverin	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.402480	71.010704	Revere Beach Parkwa	White PVC beside br	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.403156	71.018129	Broadway at New Cro	Outfall on opposite st	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.403340	71.020587	(Gillooly) Cabot St be	Sewage odor (Gillool	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.407977	71.027112	Downstream of Rev06	Plaque covering outfa	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.409914	71.028297	Downstream of Mill04 - walked culvert		na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.410125	71.028722	Head of Millcreek		na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.394445	71.049817	End of beachum and	(closest to road) stron	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.394436	71.049780	End of beachum and	(midpoint from road) s	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.394405	71.049676	End of beachum and	(farthest from road) s	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.394405	71.049676	Duplicate	Duplicate	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.419214	71.117619	Mystic Valley Pkwy (W	Pretty clear	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.419214	71.117619	Culvert off Meeting H	Strong sewage odor c	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.441521	71.149149	Sandy Beach Location		na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.442878	71.142845	Mystic River pkwy, un	Downstream	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.444363	71.138845	commuter rail station	bacon street bridge M	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.455647	71.137980	Main street bridge bet	between car lot and g	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.456789	71.138966	bridge across from W	Wedge Pond inlet	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.464865	71.151279	Horn Pond outlet, lake	lake ave, near water	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.456149	71.136269	ambient stream samp	Near Super Stop & S	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.456399	71.136447	small pipe exiting ball	small pipe	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.460935	71.137149	down street from Abe	2 pipes on bridge bot	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.464339	71.132424	Tufts school behind s	Next to Amtrack rail	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.464200	71.131111	Tufts school stream near bus circle		na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.468186	71.130921	park near Forest rd, o	on cross culvert unde	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.468186	71.130921	Duplicate	Duplicate	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.469507	71.125285	behind hospital, MyRV	MyRWA baseline site	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.467019	71.120658	outlet to resevoir	Across from Highland	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42 42'31.12"	71 9'1.07"	Channel	No GPS taken at site,	na	na	na		0.12		Wet
NA	NA	NA	42.711980	71.152671	Fulton Street	No noticable odor to s	na	na	na		0.12		Wet
NA	NA	NA	42.714655	71.156191	Brook Street	No noticable odor to s	na	na	na		0.12		Wet
NA	NA	NA	42 42'49.21"	71 10'21.11"	Exchange Street outfa	No odor, a little foam	na	na	na		0.12		Wet
NA	NA	NA	42 42'49.31"	71 10'20.89"	Exchange Street	No noticable odor to s	na	na	na		0.12		Wet
NA	NA	NA	42.724919	71.183033	RT 28 castle park	No noticable odor to s	na	na	na		0.12		Wet

NA	NA	NA	42.727453	71.188366	Outfall downstream e	Possible stream culve	na	na	na		0.12		wet
NA	NA	NA	42.743250	71.208438	walked in from small	Right on MA/NH borde	na	na	na		0.12		Wet
NA	NA	NA	42.751038	71.212086	Spencer Street	Took GPS from street	na	na	na		0.12		Wet
NA	NA	NA	42.751038	71.212086	duplicate		na	na	na		0.12		Wet
NA	NA	NA	42.755035	71.208086	Walked in behind auto	No noticable odor to s	na	na	na		0.12		Wet
NA	NA	NA	42.484033	71.103950	Sweetwater Brook @	(0.1" 48hrs prior to sa	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.4826072	71.1046187	Unnamed tributary to	Unnamed tributary to	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.495550	71.133700	Blue culvert across R	Grey, turbid water	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.495400	71.133700	Culvert just 5 ft south	Lots of green duck we	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis	Waded 3 ft upstream	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.518563	71.146526	New Boston St where	Film on water, low flo	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.518739	71.146411	Opposite stream from	Suspended solids	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.518739	71.146411	Duplicate	Duplicate	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.519578	71.146937	Just upstream from M	were driveway enters	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.520981	71.147709	Upstream of Mys 8 wh	Low flow, light brown	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.518433	71.148226	upstream from 7 and	Thick layer of duck w	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.518477	71.148139	Stream entering upstr	Thick sediment, oily, t	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.517881	71.150535	Upstream of Mys 7 an	Good flow	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.498925	71.137440	Olympia Ave, just dow	Sandy bottom, beave	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.729569	71.195557	mid-channel sample just past RR bridge		na	na	na		0.48	0.38	Wet
NA	NA	NA	42.731521	71.200097	downstream side of 1st 113 bridge		na	na	na		0.48	0.38	Wet
NA	NA	NA	42.734448	71.199880	Just upstream of 2nd 113 bridge		na	na	na		0.48	0.38	Wet
NA	NA	NA	42.734293	71.199230	pond Northwest of MS	Pond entirely covered	na	na	na		0.48	0.38	Wet
NA	NA	NA	42.734889	71.200300	~ 50m upsreatm of MSPCA		na	na	na		0.48	0.38	Wet
NA	NA	NA	42.736056	71.201397	~100m upsreatm of MSPCA		na	na	na		0.48	0.38	Wet
NA	NA	NA	42.434553	71.020547	Linden Brook as it day	Heavy silt deposits on	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.434497	71.020322	Tributary to Linden Br	Good flow, high sedim	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.433793	71.021460	Town Line Brook at h	Very silty	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.424881	71.041827	Town Line Brook whe	Orange floc, oil slick,	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.425568	71.026803	Stream at the of Ame	Deer prints, low flow,	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.407977	71.027112	Downstream of Rev06	Very little flow, greeni	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.407993	71.027011	Small culvert opening	water clea,r gray bact	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.394405	71.049676	End of beachum and	not quite as black as l	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.399997	71.053984	Where stream exits u	orange all over the roc	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.400115	71.050172	small pipe near IsEnd	very orange, very turb	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.412663	71.069288	Culvert near Madeline	1/4" growth/deposit of	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.407709	71.069853	Down Air force road b	Scum on top, some pe	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.413180	71.076268	Little Creek near Tufts	slight film on top of wa	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.440652	71.070136	Malden River across f	6-8" in depth, slight tu	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.441720	71.070899	Old Mill Sample smal	~2 gal/min. entering c	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.441688	71.071068	Old Mill at head of str	flow 3x-4x in matter o	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.441687	71.071070	12inch clay pipe next	2 or 3gal/min, clear flo	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.444227	71.069626	Just downstream of N	sampled western char	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.449076	71.069831	Outlet of Malden Rive	Highly turbid - orange	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.455333	71.080747	Corner of Philips Rd &	downstream of spot p	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.461136	71.069376	Across from 50 Tremo	slight flow, clear	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.461136	71.069376	Duplicate		na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.461136	71.069370	Across from 50 tremo	flow appeared to char	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.461429	71.068840	culvert across from D	flow clear, some algae	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.461342	71.075691	Corner of Otis and Ch	Had to move manhole	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.464603	71.070066	Roosevelt School off	Trash gate clogged –S	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.456149	71.136269	ambient stream samp	Murky, some foam on	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42 25'07.64	71 87'40.33	Whittmore Brook off A	Some plaque on rocks	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.41539348	71.103014	Small pipe next to cul	Very fresh smelling	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.40717819	71.090874	broken down culvert o	culvert has collapsed	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.399997	71.053984	Where stream exits u	very silty, bacteria and	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.400115	71.050172	small pipe near IsEnd	orange, slimy, and ve	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.40334224	71.017761	Culvert across stream	Lots of orange flock a	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.403301	71.017871	Mill Creek sample mid	Clear flow, low flow ro	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.403340	71.020587	(Gillooly) Cabot St be	water looks clear. Flo	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.403340	71.020587	Duplicate		na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.456365	71.136337	flow from directly und	site has deep deposits	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.361991	-71.147963	Corner of Greenough	Green algae covering	na	na	na		0	0.35	Wet
NA	NA	NA	42.363675	-71.155668	Outfall - So. Sawins B	Good flow strong rush	na	na	na		0	0.35	Wet
NA	NA	NA	42.364733	-71.189067	Laundry Brook just of	Fairly clear, no odor w	na	na	na		0	0.35	wet
NA	NA	NA	42.367449	-71.198957	Culvert on right, 290 F	light tannish tint to wa	na	na	na		0	0.35	Wet
NA	NA	NA	42.367489	-71.198853	Culvert on left, 290 P	very large snapping tu	na	na	na		0	0.35	Wet
NA	NA	NA	42.367267	-71.218116	Intersection of Pleasa	Water flowing approx.	na	na	na		0	0.35	Wet
NA	NA	NA	42.381394	-71.213800	Edwin Rd and Parson	Walked in along strea	na	na	na		0	0.35	Wet
NA	NA	NA	42.381368	-71.213770	Beaver Brook just ups	water tannish tea colo	na	na	na		0	0.35	Wet
NA	NA	NA	42.381687	-71.233383	DPW outfall flowing in	water fairly clear no o	na	na	na		0	0.35	wet
NA	NA	NA	42.381687	-71.233383	Duplicate		na	na	na		0	0.35	Wet
NA	NA	NA	42.397176	-71.265148	across street from 55d	sampled pond as it flo	na	na	na		0	0.35	Wet
NA	NA	NA	42.456399	71.136447	small pipe exiting ball	Occasional discharge	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.456425	71.136466	Main stream next to M	Lots of leaf litter, mar	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.456789	71.138966	bridge across from W	High flow pretty clear	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.469507	71.125285	behind hospital, MyRV	High flow no distinct c	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.4764251	71.1182001	Aberjona mainstem in	Low TSS, tannish sta	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.4770646	71.1175936	Sweetwater Brook jus	very little odor, may b	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.478598	71.118001		Manhole nearby with	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.4787841	71.1131562	Sweetwater Brook we	Clear flow, no obvious	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.4824877	71.1060371	Sweetwater Brook @	downstream	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.4824877	71.1060371	Duplicate	Duplicate	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.495550	71.133700	Blue culvert across R	Med flow tannish colo	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.495400	71.133700	Culvert just 5 ft south	Very little flow, believ	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.495412	71.134111	Upstream of US3, sam	Clear flow	na	na	na	Bedford	0.33	0.33	Wet

NA	NA	NA	42.497445	71.134658	Off Olym Ave back o	Lots of duck weed. Li	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.498925	71.137440	Olympia Ave, just dov	Sandy bottom, med f	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.495550	71.133700	Blue culvert across R	Clear, good flow, no	na	na	na	Bedford	0.15	0.15	Wet
NA	NA	NA	42.495412	71.134111	Upstream of US3, san	Clear flow	na	na	na	Bedford	0.15	0.15	Wet
NA	NA	NA	42.497445	71.134658	Off Olym Ave back o	Clear, low flow (less t	na	na	na	Bedford	0.15	0.15	Wet
NA	NA	NA	42.518563	71.146526	New Boston St where	Water grayish/green	na	na	na	Bedford	0.15	0.15	wet
NA	NA	NA	42.518433	71.148226	upstream from 7 and 71, downstream of Mys		na	na	na	Bedford	0.15	0.15	Wet
NA	NA	NA	42.518477	71.148139	Stream entering upstr	most likiliy from lands	na	na	na	Bedford	0.15	0.15	Wet
NA	NA	NA	42.483930	71.1039388	Duplicate	Duplicate	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @	Slightly musty odor	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.484141	71.103935	Inside culvert upstrea	flow about 2-3 gal/min	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.4826072	71.1046187	Unnamed tributary to	No distinct odor	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.399997	71.053984	Where stream exits u	plaque accumulation,	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.400115	71.050172	small pipe near IsEnd	orange, slimy, and ve	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.41921413	-71.11761932	Meeting House Brook		na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.41921413	-71.11761932	Pipe off Meeting House Brook		na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.41769678	-71.12871923	algae, possibly grey bacterial growth		na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.41382298	-71.13243822	orange flocc at bottom	GPS reads SOM1	na	na	na	Boston-Logan	0	0	Dry
NA	NA	49.30	42.39401523	-71.07608867	Sample taken out out flow		na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.46084009	-71.13716417	90 degree angle on pipe downward, very stro		na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.46309465	-71.13622116	look like it drains cent	just upstream of Swar	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.4826072	-71.1046187	Unnamed tributary to Sweetwater Brook opp		na	na	na	Boston-Logan	0	0	Dry
NA	NA	2.65	42.48393	-71.1039388	Sweetwater Brook @ Lindenwood (upstream		na	na	na	Boston-Logan	0	0	Dry
NA	NA	0.40	42.490277	-71.101799	much less than 2linde	Off Toms Way in Stor	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.490277	-71.101799	duplicate		na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.49784987	-71.09894694	small pipe exiting	Right next to corner o	na	na	na	Boston-Logan	0	0	Dry
NA	4.0	4.30	42.515744	-71.136289	Sample taken shady l	Commerce Way locat	na	na	na	Bedford	0	0.06	Dry
NA	5.4	6.30	42.513171	-71.142649	1 foot deep at samplin	Halls Brook behind 18	na	na	na	Bedford	0	0.06	Dry
NA	6.2	32.10	42.513291	-71.142539	Unnamed stream just upstream of Halls Broo		na	na	na	Bedford	0	0.06	Dry
NA	7.3	20.90	42.518563	-71.146526	Landfill Brook, very sl	Just south of Landfill E	na	na	na	Bedford	0	0.06	Dry
NA	4.8	34.60	42.518739	-71.146411	some (very little) suds	Southeast of Landfill E	na	na	na	Bedford	0	0.06	Dry
NA	4.8	50.00	42.518739	-71.146411	duplicate		na	na	na	Bedford	0	0.06	Dry
NA	NA	12.00	42.50317874	-71.13529801	warmer than yesterda	99 restaurant, Aberjor	na	na	na	Bedford	0	0	Dry
NA	NA	8.35	42.5026954	-71.1353458	orange staining at bot	99 restaurant outfall d	na	na	na	Bedford	0	0	Dry
NA	NA	37.40	42.51329075	-71.14253919	sampled near wooden	unnamed stream just	na	na	na	Bedford	0	0	Dry
NA	NA	6.65	42.51317075	-71.14264919	Halls Brook	185 New Boston, (cho	na	na	na	Bedford	0	0	Dry
NA	NA	26.40	42.51858	-71.146281	condition same as 5/1	confluence of Mys7 ar	na	na	na	Bedford	0	0	Dry
NA	NA	NA	42.5157443	-71.1362892	Marshall's shipping lo	Same as last years M	na	na	na	Bedford	0	0	Dry
NA	NA	23.30	42.51601573	-71.13688511	Across Street from las	Same as last years m	na	na	na	Bedford	0	0	Dry
NA	NA	NA	42.526348	-71.125516	side culvert	West street where sur	na	na	na	Bedford	0	0	Dry
NA	NA	NA	42.526348	-71.125516	Main culvert	West street where sur	na	na	na	Bedford	0	0	Dry
NA	NA	4.00	42.53154834	-71.11838639	very, very slow flow w	Near corner of Interva	na	na	na	Bedford	0	0	Dry
NA	NA	4.30	42.53558799	-71.11508232	mowing upsteam; abo	Birchmeadow South o	na	na	na	Bedford	0	0	Dry
NA	NA	2.85	42.53558799	-71.11508232	duplicate		na	na	na	Bedford	0	0	Dry
NA	NA	3.15	42.53679646	-71.10856436	about 12' deep, slight	Reading High School	na	na	na	Bedford	0	0	Dry
NA	NA	NA	42.52094043	-71.10497511	about 6 inches deep	shington and High stre	na	na	na	Bedford	0	0	Dry
NA	280	50+	42.41380356	-71.13242519	some surface inflow w	Near Amelia Earhart D	12	12.5	**20mS	Boston-Logan	0	0.42	Wet
NA	150	50+	42.403340	-71.020587	gray bacteria plaque,	(Gillooly) Cabot St be	7.5	11.5	na	Boston-Logan	0	0.42	Wet
NA	160	46.60	42.40397	-71.021087	odor, gray/black cloud	privately owned	na	na	na	Boston-Logan	0	0.42	Wet
NA	42	50+	42.40367	-71.020987	significant gray bacte	privately owned, drain	na	na	na	Boston-Logan	0	0.42	Wet
NA	ND	NA	42.455741	-71.0840671	clean location	Spot Pond Brook	na	na	na	Boston-Logan	0	0.42	Wet
NA	ND	NA	42.455741	-71.0840671	duplicate	Spot Pond Brook	na	na	na	Boston-Logan	0	0.42	Wet
NA	NA	>50	42.27867229	-71.01285912	covered w/metal grate	Between yacht clubs	15	12	na	Boston-Logan	0	0	Dry
NA	NA	>50	42.26651286	-70.99713721	3 dam section slight greenish water 6 inch flo		27	14	na	Boston-Logan	0	0	Dry
NA	NA	18.50	42.26101708	-71.00364142		culvert under bridge o	2.3	14	na	Boston-Logan	0	0	Dry
NA	NA	2.20	42.25707901	-71.01144528	sampled mixing zone	corner of Furnace Bro	0.3	12.3	na	Boston-Logan	0	0	Dry
NA	NA	>50	42.27616359	-71.03722522	oil sheen, jelly fish co	Office park off Heritag	8.1	13.4	na	Boston-Logan	0	0	Dry
NA	NA	>50	42.29837295	-71.04637927	NH3 kit clear, very litt	Victory Park off Vistor	20.2	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.29837295	-71.04637927	duplicate		na	na	na	Boston-Logan	0	0	Dry
NA	NA	50.00	42.28935547	-71.04177324	Took Beach sample h	Tenean Beach, off Te	28.5	14.3	na	Boston-Logan	0	0	Dry
NA	NA	0.55	42.2668462	-71.02928152	needed city to open g	corner of Hobart and E	na	na	na	Boston-Logan	0	0	Dry
NA	NA	6.30	42.25196531	-71.04783967	downstream side of b	running through Cunn	0.3	11.8	na	Boston-Logan	0	0	Dry
NA	NA	1.20	42.25917963	-71.08395335	downstream side of b	MR baseline site?	na	na	na	Boston-Logan	0	0	Dry
0.3	ND	0.85	42.419214	-71.117619	clouder than normal w	Meeting house brook,	0.3/1	11.7/11.9	550/180	Boston-Logan	0	0.03	Dry
NA	ND	1.25	42.425963	-71.114988		Meeting house brook	0.1	14.1	291	Boston-Logan	0	0.03	Dry
NA	4.9	4.75	42.399303	-71.160888	waded in stream to co	Winns Brook of Bright	0.6	14.4	1085	Boston-Logan	0	0.03	Dry
0.14	4.7	5.00	42.399303	-71.160888	duplicate		na	na	na	Boston-Logan	0	0.03	Dry
NA	6.6	4.55	42.418716	-71.151379	just downstream of br	Mill Brook @ Mystic S	0.8	14.1	1625	Boston-Logan	0	0.03	Dry
0.07	6.1	6.30	42.418597	-71.152247	Sample taken from flo	Mill Brook @ opening	0.8	13.7	1623	Boston-Logan	0	0.03	Dry
NA	NA	0.30	42.72491896	-71.18303334	sample collected just	RT 28 castle park	0.2	16.7	384.6	Lawrence	0	0	Dry
NA	NA	NA	42.72745251	-71.18836554	hydroelectric stream,	Osgood Street	na	na	na	Lawrence	0	0	Dry
NA	NA	12.30	42.72745251	-71.18836554	discharge under Osgood street bridge, strong		na	na	na	Lawrence	0	0	Dry
NA	NA	2.10	42.74320743	-71.20845291	needed reach	Hampshire Rd on boa	0.2	16.9	365.2	Lawrence	0	0	Dry
NA	NA	1.80	42.75526814	-71.20793271	red rusty color, some	By auto glass place of	0.2	313.5	17.2	Lawrence	0	0	Dry
NA	NA	2.15	42.76250258	-71.22274645	slightly more cloudy th	downstream of road, s	na	na	na	Lawrence	0	0	Dry
NA	NA	1.65	42.76743837	-71.22301615	low flow	behind Kohl's parked	0.4	16.2	757	Lawrence	0	0	Dry
NA	NA	0.50	42.77404525	-71.22433096	thick algae growth, ve	flow from east under F	0.3	19.6	638	Lawrence	0	0	Dry
NA	NA	2.70	42.77406535	-71.22432568	sampled upstream of confluence with Mer6a		0.3	15.4	684	Lawrence	0	0	Dry
NA	NA	1.80	42.77812136	-71.22714727	flow from under Rockingham park		0.3	15.8	650	Lawrence	0	0	Dry
NA	NA	NA	42.77812136	-71.22714727	duplicate		na	na	na	Lawrence	0	0	Dry
NA	NA	0.20	42.77659345	-71.23104502	sample taken approx	main stream sample	0.3	18.6	665	Lawrence	0	0	Dry
NA	NA	ND	42.77659345	-71.23104502	strong odor, orange s	culvert that conveys b	na	na	na	Lawrence	0	0	Dry
1.01	200	50+	42.278672	-71.012859	Pungent 'corpse-y' od	outfall between yacht	4.7	15.2	*10.6mS	Boston-Logan	0	0	Dry
0.25	12	9.25	42.287572	-71.022259	lots of orange flocc co	across from CVS on C	1	15	1913	Boston-Logan	0	0	Dry
1.34	350	50+	42.289355	-71.041773	Very, very muddy wat	Tenean Beach	24.5	16.3	38.36m	Boston-Logan	0	0	Dry
1.53	330	50+	42.298373	-71.046379	Started sprinkling abo	at dog park off Victory	24.5/24.6	16.3/16.3	.36/38.	Boston-Logan	0	0	Dry

0.31	7.2	3.75	42.288373	-71.092879	bacteria plague cover	Canterbury Brook, Bo	0.6	14.6	1156	Milton-Blue Hi	0.07	0.07	Dry
0.32	7.1	2.30	42.288373	-71.092879	duplicate		na	na	na	Milton-Blue Hi	0.07	0.07	Dry
NA	NA	ND	42.779551	-71.027841	misting, very light rain	sampled downstream	0.2	13.7	331	Lawrence	0.1	0.1	Wet
NA	NA	1.05	42.767101	-71.033431	culverted stream outf	across from 62 coffin	0.2	16.1	263	Lawrence	0.1	0.1	Wet
NA	NA	0.50	42.752001	-71.038431	sampled off bridge w/	off Main Street	0.2	14.1	376.6	Lawrence	0.1	0.1	Wet
NA	NA	1.00	42.74968	-71.041971	2 lamprey's in stream	further south on Main	0.1	14.1	259.4	Lawrence	0.1	0.1	Wet
NA	NA	5.75	42.772341	-71.084161	Coming out of retainir	on right side facing up	0	16.5	92.5	Lawrence	0.1	0.1	Wet
NA	NA	1.80	42.773051	-71.082001	Little River outfall into	Walked downstream a	0.2	17.2	438.2	Lawrence	0.1	0.1	Wet
NA	NA	0.20	42.776051	-71.087001	flow swift, about 1ft de	behind auto parts sup	0.2	17.3	431.7	Lawrence	0.1	0.1	Wet
NA	NA	NA	42.776051	-71.087001	duplicate		na	na	na	Lawrence	0.1	0.1	Wet
NA	NA	1.65	42.703501	-71.139591	Shawsheen River	Under 495/RR tracks	0.3	16.6	700	Lawrence	0.1	0.1	Wet
NA	NA	0.35	42.696201	-71.1459901	Combined sample fro	Behind S. Lawrence e	0.3	16.7	577	Lawrence	0.1	0.1	Wet
NA	NA	2.35	42.696209	-71.1457001	Shawsheen River	main stream sample b	0.3	16.7	679	Lawrence	0.1	0.1	Wet
NA	NA	5.05	42.695971	-71.1455601	strong flow, lots and lo	Concrete outfall meta	0.5	14.1	1078	Lawrence	0.1	0.1	Wet
0.13	2.8	0.30	42.57664155	-70.92825715		Frost Fish Brook, 34 S	0.3	13.3	585	Beverly	0	0.16	Dry
0.1	3	1.85	42.58395698	-70.92904291	Moss growing in pipe	Downstream of bridge	0.2	12.8	375	Beverly	0	0.16	Dry
0.09	3.5	1.00	42.51446323	-70.86578117	Some moss growing c	Sampled where brook	0.2	13.8	329	Beverly	0	0.16	Dry
0.14	4.6	2.70	42.51182185	-70.85955935		Between Rts. 134A ar	0.4	13.1	641	Beverly	0	0.16	Dry
0.34	5.3	1.70	42.466942	-70.92203147	Sample combined fro	Sampled about 15' do	0.5	14.2	826	Beverly	0	0.16	Dry
0.32	5.1	1.40	42.466942	-70.92203147	Ammonia kits - samples recorded as 1.0 but		na	na	na	Beverly	0	0.16	Dry
NA	NA	NA	42.52474522	-70.92044643	Channelized streamb	Off Howley St, back c	0.5	17.1	930.1	Beverly	0	0	Dry
NA	NA	NA	42.52463018	-70.92029908	Channelized streamb	Strong Brook, off How	0.4	13.6	597	Beverly	0	0	Dry
NA	NA	NA	42.52857218	-70.92980508	Lots of snails and plar	End of Sawyer off RR	0.5	12.2	747	Beverly	0	0	Dry
NA	NA	NA	42.52780518	-70.93030508	Channelized stream b	Off RR Ave near corn	0.6	16.7	1004	Beverly	0	0	Dry
NA	NA	NA	42.52132281	-70.92246961	Culverted stream, mo	Upstream of Pierpont	0.4	13.1	568	Beverly	0	0	Dry
NA	NA	NA	42.52110337	-70.88711899	Duck bill pipe opening	On Derby St off Derby	10.1	16.4	14.41	Beverly	0	0	Dry
NA	NA	NA	42.5245133	-70.90032899	Concrete pipe; bird lif	Commercial St, acros	11	18.2	16.15	Beverly	0	0	Dry
NA	NA	NA	42.51462618	-70.8462946	Swimming children in	Corner of Crowninshie	0.4	14.5	605	Beverly	0	0	Dry
NA	NA	NA	42.51482047	-70.84827695	Thick orange floc in s	Sampled downstream	0.4	14.2	618	Beverly	0	0	Dry
NA	NA	7.85	42.51312428	-70.8564196	Water irridescent in s	at Marblehead transfe	0.5	13.3	780	Beverly	0	0	Dry
NA	NA	NA	42.466942	-70.92203147	1 culvert, 2 gates; son	sampled gate to the S	0.5	14.2	1780	Beverly	0	0	Dry
NA	NA	NA	42.466942	-70.92203147	1 culvert, 2 gates; son	sampled gate to the N	1.1	14.8	1784	Beverly	0	0	Dry
NA	NA	NA	42.466942	-70.92203147	duplicate		na	na	na	Beverly	0	0	Dry
0.23	4.3	1.40	42.262068	-71.046682	sampled downstream	Unquity Brook off Chr	0.5	14.5	800	Milton-Blue Hi	0	0	Dry
0.24	4.1	1.85	42.253703	-71.068976	Heard dripping from u	downstream of Rando	0.5	15.4	797	Milton-Blue Hi	0	0	Dry
1.66	660	44.30	42.266485	-70.997104	Flow was very strong	Wollaston Beach upst	28.5	20.5	*40.4mS	Milton-Blue Hi	0	0	Dry
0.77	200	41.20	42.277357	-71.008933	trash in water and pla	just south of WollB1 o	2.7	17.1	**12mS	Milton-Blue Hi	0	0	Dry
0.63	54	NA	42.278672	-71.012859	duplicate of WollB1	duplicate of WollB1	na	na	na	Milton-Blue Hi	0	0	Dry
0.61	55	29.30	42.278672	-71.012859	water flowing out of b	outfall between yacht	3	16.1	*5.55mS	Milton-Blue Hi	0	0	Dry
NA	NA	1.85	42.44287759	71.14284459	used reach, sample c	Upper Mystic Lake sa	0.4	19.2	794	Boston-Logan	0	0	Dry
NA	NA	NA	42.451207	-71.13668	sample collected dow	downstream of downto	0.4	19.5	812	Boston-Logan	0	0	Dry
NA	NA	2.40	42.46084009	-71.13716417	sampled about 50ft up	Off Swanton Street, g	0.5	17.4	888	Boston-Logan	0	0	Dry
NA	NA	NA	42.46084009	-71.13716417	thick algae growth on	Whittmore pond outle	0.4	18.4	745	Boston-Logan	0	0	Dry
NA	NA	0.80	42.4764251	-71.1182001	name on data sheet is	Aberjona mainstem in	0.5	17	935	Bedford	0	0	Dry
NA	NA	6.25	42.5026954	-71.1353458	streambed wide and s	sampled downstream	0.5	17.9	891	Bedford	0	0	Dry
NA	NA	10.10	42.5026954	-71.1353458	orange staining at bot	99 restaurant outfall d	1.9	15.5	2907	Bedford	0	0	Dry
NA	NA	0.40	42.51317075	-71.14264919	sheetrock compound	Halls Brook at 185 Ne	0.5	16.7	813	Bedford	0	0	Dry
NA	NA	27.90	42.51329075	-71.14253919	strip was almost blue	unknown stream near	0.5	15	796	Bedford	0	0	Dry
NA	NA	28.50	42.51317075	-71.14264919	DRR1 duplicate	DRR1 duplicate	na	na	na	Bedford	0	0	Dry
NA	NA	NA	42.517998	-71.130612	Sampled just under co	Walking in off Arnold	0.5	16.1	908	Bedford	0	0	Dry
NA	NA	0.80	42.53558799	-71.11508232	average flow	Birchmeadow South o	0.7	15.1	1195	Bedford	0	0	Dry
NA	NA	0.60	42.53679646	-71.10856436	slight scum on top of	Reading High School	0.8	15.5	1308	Bedford	0	0	Dry
0.15	4.8	0.25	42.4826072	-71.1046187	Cl2 exceeded holding	Unnamed tributary to	0.4	14.5	798	Boston-Logan	0.04/0	0.04/0.	Wet
0.15	3.4	0.90	42.483930	-71.1039388	Cl2 exceeded holding	Sweetwater Brook @	0.4	17	821	Boston-Logan	0.04/0	0.04/0.	Wet
0.12	4.6	1.30	42.48685	-71.0985788	Cl2 exceeded holding	Elm St in Stoneham, t	0.7	15.6	1434	Boston-Logan	0.08/0	0.08/0.	Wet
0.11	3.2	0.40	42.490277	-71.101799	Cl2 exceeded holding	Off Toms Way in Stor	0.5	19.1	977	Boston-Logan	0.08/0	0.08/0.	Wet
0.16	3.1	1.05	42.490277	-71.101799	Cl2 exceeded holding	duplicate of Toms	na	na	na	Boston-Logan	0.08/0	0.08/0.	Wet
ND (0.1)	ND	ND	42.490277	-71.101799	Cl2 exceeded holding	same location as Tom	0.1	21	245	Boston-Logan	0.1/0.1	0.1/0.2	Wet
NA	NA	NA	42.46345477	-71.14925777	very light rain, small w	at end of Sylvester St	0.4	17.4	775	Boston-Logan	0	0.47	Wet
NA	NA	NA	42.46345577	-71.14925707	warm water about 1 a	at end of Sylvester St	0.5	23.4	720	Boston-Logan	0	0.47	Wet
NA	NA	0.55	42.475449	-71.1600123	Jay Corey, city engine	Off Woburn Parkway	0.7	14.1	1353	Bedford	1.39	1.53	Wet
NA	NA	2.30	42.47549599	-71.15991194	rust/orange stain on ro	main stream outfall or	0.6	17.1	1267	Bedford	1.39	1.53	Wet
NA	NA	NA	42.47549599	-71.15991194	duplicate of OF118		na	na	na	Bedford	1.39	1.53	Wet
NA	NA	2.75	42.475349	-71.160112	city engineer requeste	small plastic pipe abo	0.7	13.4	**1.4mS	Bedford	1.38	1.53	Wet
NA	NA	NA	42.4809258	-71.15751796	main outfall corrugate	Off Harrison Ave near	0.7	17.6	1445	Bedford	1.38	1.53	Wet
NA	NA	NA	42.47333227	-71.17269149	sampled mid-stream j	downstream of Cumm	0.4	16.7	828	Bedford	1.38	1.53	Wet
NA	NA	NA	42.48054493	-71.17539336	sampled downstream	Midway down So Bed	0.3	16	603	Bedford	1.35	1.53	Wet
NA	NA	NA	42.48093881	-71.17630129	moderate flow, severe	On corner of So. Bedf	0.2	15.3	441	Bedford	1.35	1.53	Wet
NA	NA	NA	42.48008835	-71.18316396	steep sides on bank, r	Near condo complex c	0.1	18	997	Bedford	1.35	1.53	Wet
NA	NA	0.95	42.46880482	-71.17869266	some flow coming ou	Shaker Glen Brook of	0.3	16.5	583	Bedford	1.35	1.53	Wet
NA	NA	2.45	42.46773317	-71.18022662	unknown tributary to S	57 Russel Street	0.4	16.8	988	Bedford	1.34	1.53	Wet
0.62	77	49.20	42.403340	-71.020587	grey bacterial plaque	Corner of Cabot and C	0.7	16.7	3631	Boston-Logan	0	0	Dry
0.96	140	50*	42.399997	-71.053984	thick bacteria/algae o	top corner of Boston N	6.5	20.34	11.36	Boston-Logan	0	0	Dry
0.97	140	35.30	42.394436	-71.049780	lots of trash; ground v	Just a few feet West c	8	20.2	12.28	Boston-Logan	0	0	Dry
1.17	200	50*	42.394421	-71.049706	Surf., NH3 (EPA) and	other 500mL bottle sa	14.2	21.5	23.49	Boston-Logan	0	0	Dry
1.15	200	50*	42.394421	-71.049706	Duplicate of IsEnd03		na	na	na	Boston-Logan	0	0	Dry
0.81	130	46.10	42.41380356	-71.13242519	can hear running water in pipe; YSI measurm		9.1	17.7	15.1	Boston-Logan	0	0	Dry
NA	NA	NA	42.40333987	71.020587	gray plaque on bottom and below outfall		0.5	15.8	291-246	Boston-Logan	0	0	Dry
NA	NA	NA	42.40376623	-71.02130017	significant gray bacterial plaque; some suds;		1.1/0.1	17.5/17.5	517/142	Boston-Logan	0	0	Dry
NA	NA	NA	42.39960591	-70.99828284	slight gray plaque; lot	downstream - pipe on	1.8	18.1	3447	Boston-Logan	0	0	Dry
NA	NA	NA	42.40075317	-70.99738614	orange floc in pipe an	Site at intersection on	1.1	20.4	1982	Boston-Logan	0	0	Dry
NA	NA	NA	42.399852	-70.99260269	sample taken from ab	NE back corner of Sh	4.3	20.4	7.6	Boston-Logan	0	0	Dry
NA	NA	NA	42.400002	-70.991803	slight flow in channel	Upstream of WashN0	4.5	21.7	8.14	Boston-Logan	0	0	Dry
NA	NA	NA	42.399999	-70.991803	Pipe enters Sales from	East just South of fer	5.4	15.4	9.6	Boston-Logan	0	0	Dry
NA	NA	NA	42.40269115	-71.00375656	Cloudy; algae on rock	Sampled over pedestr	1.7	18.1	3271	Boston-Logan	0	0	Dry
NA	NA	NA	42.40269115	-71.00375656	Duplicate of Green01		na	na	na	Boston-Logan	0	0	Dry

NA	NA	NA	42.41458312	-70.9947105	Lots of film on surface	Very back of corner o	1.1	23	22.38	Boston-Logan	0	0	Dry
NA	NA	NA	42.41699849	-70.99015595	Used reach, lots of fra	End of Agawam St; of	1.4	21.2	2737	Boston-Logan	0	0	Dry
NA	NA	NA	42.4001152	-71.050172	Very cloudy, significa	Upstream of Island Er	1	19.5	2014	Boston-Logan	0	0	Dry
0.13	5.8	4.25	42.463455	-71.149258	sampled far right of c	Russel Brook at the e	0.6	17.1	1283	Bedford	0.01	0.02	Dry
0.16	6	1.30	42.463455	-71.149258	Duplicate of Russ1		na	na	na	Bedford	0.01	0.02	Dry
0.09	3.7	0*	42.495550	-71.133700	flow out of small stone	plue panel covering to	0.3	22.1	660	Bedford	0.01	0.02	Dry
0.09	3.4	0.90	42.495400	-71.133700	sampled on other side	about 10 feet from US	0.3	21.4	643	Bedford	0.01	0.02	Dry
0.11	3.7	0.70	42.495412	-71.134111	about 6 inches deep,	back corner of United	0	22.3	671	Bedford	0.01	0.02	Dry
0.11	5.6	2.35	42.498925	-71.137440	duck instream~40'awa	Off Olympia Ave right	0.7	18	1416	Bedford	0.01	0.02	Dry
NA	NA	NA	42.17433828	-71.21340789	2 metal corrugated ou	parked off Washingto	0.3	17.2	414.3	Norwood	0	0	Dry
NA	NA	NA	42.17436284	-71.2133808	mainstream sample fr	parked off Washingto	0.2	23.5	372	Norwood	0	0	Dry
NA	NA	NA	42.17568587	-71.21568311	about 300ft upstream	off Main St, turn into E	0.2	24	347.8	Norwood	0	0	Dry
NA	NA	NA	42.17568487	-71.21569311	tributary to Hawes Bro	Sampled right before	0.3	17.8	685	Norwood	0	0	Dry
NA	NA	NA	42.17460128	-71.21823127	Just upstream of HAB	off Main St, turn into E	0.3	17.8	688	Norwood	0	0	Dry
NA	NA	NA	42.17761815	-71.22424663	entered near no dump	Tributary to Hawes Br	0.4	16.5	713	Norwood	0	0	Dry
NA	NA	NA	42.17761815	-71.22424663	small pipe exiting abo	parked off corner of D	na	na	na	Norwood	0	0	Dry
NA	NA	NA	42.17761779	-71.22765971	2 outfalls @ headwall	parked off corner of D	0.3	15.9	589	Norwood	0	0	Dry
NA	NA	NA	42.17858119	-71.18783858	12' metal corrugated c	260 Dean St parked 2	0.7	19.6	1465	Norwood	0	0	Dry
NA	NA	NA	42.18465657	-71.19415004	some billowy stuff on	On Meadowbrook Rd,	0.8	18.2	1539	Norwood	0	0	Dry
NA	NA	NA	42.18465657	-71.19415004	duplicate of MB02		na	na	na	Norwood	0	0	Dry
NA	NA	NA	42.20501085	-71.18852597	Plantingfield Brook	On Codman Ave acro	0.4	20	766	Norwood	0	0	Dry
NA	NA	NA	42.20459437	-71.19851397	Plantingfield Brook, a	corner of Ash Rd and	0.3	16.9	663	Norwood	0	0	Dry
0.22	5.1	1.50	42.250692	-70.997793	Accessed via parking	Canal opening just off	0.5	19.7	1080	Boston-Logan	0.01	0.01	Dry
1.15	270	50*	42.276164	-71.037225	occasional fine soap s	Sagamore Creek outf	13	18.5	*23.3m	Boston-Logan	0.01	0.01	Dry
NA	NA	50*	42.276174	-71.037325	groundwater seep, wh	about 50ft downstrean	na	na	na	Boston-Logan	0.01	0.01	Dry
1.65	530	50*	42.277357	-71.008933	barnacle encrusted ou	outfall south of two ya	25	18.8	39.10m	Boston-Logan	0.01	0.01	Dry
0.84	210	50*	42.277357	-71.008933	as tide comes in it arr	outfall between WollB	12	19.4	*30.7m	Boston-Logan	0.01	0.01	Dry
0.8	110	50*	42.278672	-71.012859	duplicate of WollB1		na	na	na	Boston-Logan	0.01	0.01	Dry
0.76	100	50*	42.278672	-71.012859	water drops into smal	outfall between yacht	1.9	19	4172	Boston-Logan	0.01	0.01	Dry
NA	NA	NA	42.25196531	-71.04783967	just upstream of samp	in Cunningham Park c	0.3	18.8	619	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.25100306	-71.0519303	Stream 2ft deep. thick	corner of Fullers Roac	0.3	18.1	635	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.25774194	-71.00885949	reached up to sample	downstream side of br	0.1	21.5	205	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.25774194	-71.00886049	6 feet across	sampled just upstrean	0.3	18	709	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.25623392	-71.02049266	2 cement culverts san	off Furnace Brook Par	0.4	17.1	790	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.245665	-71.02734872	Unnamed tributary to	Off Cresent street, wa	0.3	19.8	661	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.25581841	-70.99401534	some DPW work migh	End of Broad street of	9.9	19.5	**15.03	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.27616359	-71.03722522	sampled on incoming	Office park off Heritag	23.7	20	**37.4	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.27616359	-71.03722522	groundwater seep, thi	just downstream of SA	2.3	16.4	3645	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.27716403	-71.00777498	sampled after tide had	Wollaston Beach outf	29	19.4	44.56m	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.27716413	-71.00777488	sampled inside of out	Wollaston beach outfa	23.3	17.1	**36.79	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.27867229	-71.01285912	sampled inside of out	Wollaston Beach outf	3.2	18	*5.81m	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.25069222	-70.99779295	Parked via lot at Bagr	Canal opening near E	0.4	21.2	771	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.25069222	-70.99779295	duplicate of Canal1		na	na	na	Boston-Logan	0.05	0.06	Dry
0.07	ND	0.15	41.92559804	-70.61841863	lots of eel grass, used	downstream Eel River	0.1	22.8	142.9	Plymouth	0.01	0.01	Dry
ND	ND	0.20	41.92519001	-70.61918863	River: about 1.5' deep	downstream of bridge	0.1	22.6	145.3	Plymouth	0.01	0.01	Dry
~0.05	ND	ND	41.92519001	-70.61918863	duplicate of Eel2		na	na	na	Plymouth	0.01	0.01	Dry
0.1	ND	0.35	41.92517001	-70.61942993	some grass was gorw	upstream of Sandwich	0.1	21.5	187.7	Plymouth	0.01	0.01	Dry
0.08	4.2	0.60	41.92538204	-70.61810863	dead mouse floating i	directly behind 132 sa	0.2	17.6	326.3	Plymouth	0.01	0.01	Dry
0.15	NA	ND	41.92480601	-70.61774371	very akward sampling	Clean-out pipe, behinc	0.2	20.4	315.3	Plymouth	0.01	0.01	Dry
NA	NA	NA	42.70688	-71.1476552	downstream of waterf	confluence of canal &	0.1	26.5	188	Lawrence	0	0	Dry
NA	NA	NA	42.70703754	-71.14815826	some algae on stream	just down stream of ca	0.1	25.6	192.9	Lawrence	0	0	Dry
NA	NA	NA	42.70747755	-71.14846649	shallow 1' aglae on ro	Upstream (~50') of Sp	0.2	23.2	480	Lawrence	0	0	Dry
NA	NA	NA	42.70725878	-71.14809783	on Merrimack river sic	leaky pipe under Spic	0.1	22.6	230	Lawrence	0	0	Dry
NA	NA	NA	42.70991636	-71.15129912	tace hemoglobin off u	pipe off Lawrence Hos	1.2	22.6	2291	Lawrence	0	0	Dry
NA	NA	NA	42.70516882	-71.14005475	waded in, about 400'	mouth of Shawsheen	0.3	24.6	633	Lawrence	0	0	Dry
NA	NA	NA	42.70516882	-71.14005475	duplicate of Shaw01		na	na	na	Lawrence	0	0	Dry
NA	NA	NA	42.695971	-71.1455601	took additional photos	South Lawrence Elem	0.5	15.5	1072	Lawrence	0	0	Dry
NA	NA	NA	42.67330118	-71.14974812	2-3 feet deep	Across from Shawshe	0.3	23.8	618	Lawrence	0	0	Dry
NA	NA	NA	42.67231773	-71.14949411	left side, facing downs	front of Balmoral cond	1	20.6	1936	Lawrence	0	0	Dry
NA	NA	NA	42.67225719	-71.1493017	flow dropped to a trick	front of Balmoral cond	1.4	20.7	2780	Lawrence	0	0	Dry
NA	NA	NA	42.66847901	-71.14232625	some algae on rocks	little park of York St b	0.4	18.3	878	Lawrence	0	0	Dry
NA	NA	NA	42.66510433	-71.14546547	waded downstream to	park in Shawsheen pla	0.8	21.7	1600	Lawrence	0	0	Dry
0.12	3.4	1.05	42.266756	-71.094794	green algae and greyi	(actually NR104?) Bel	0.5	18.2	910	Boston-Logan	0.77	0.77	Wet
ND	ND	0.50	42.266710	-71.094816	waded into river for sa	just upstream of Dent	0.2	24.6	427.7	Boston-Logan	0.77	0.77	Wet
ND	3.7	1.65	42.251173	-71.128400	lots of trash in stream	parked off Reservatio	0.3	25.9	625	Boston-Logan	0.77	0.77	Wet
0.05	8.7	21.90	42.247956	-71.125339	difficult access, white	parked off Glenwood,	0.2	20.5	476.6	Boston-Logan	0.77	0.77	Wet
0.66	7.4	14.25	42.244799	-71.126989	green algae in outfall,	behind tennis courts o	0.5	18.4	968	Boston-Logan	0.77	0.77	Wet
0.74	7.2	14.80	42.244799	-71.126989	Duplicate of NR162		na	na	na	Boston-Logan	0.77	0.77	Wet
0.14	4.8	1.15	42.242826	-71.127704	some gray bacteria, g	behind Stop & Shop o	1.2	22.4	24.11	Boston-Logan	0.77	0.77	Wet
0.08	ND	1.00	42.242874	-71.127669	Mainstem Neponset R	behind Stop & Shop o	0.2	25	486	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.27144045	-71.06754804	sampled majority of fl	Adams Street before E	0.2	23.6	518	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.27041352	-71.07319096	Neponset mainstem,	Under Central Street E	0.2	23.8	580	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.27049459	-71.07315433	"Bos103" bacterial pla	Outfall under Central	1.7	21.3	3148	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.27049459	-71.07315433	Duplicate of Milt03		na	na	na	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.27019179	-71.07283064	Pine Tree Brook	Pedestrian bridge nea	0.3	20.3	520	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.2660057	-71.07350454	disjointed clay tile pip	pipe coming out from	0.1	20.6	310.3	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.26591742	-71.07358271	Pine Tree Brook	sampled under bridge	0.3	20.4	518	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.27034626	-71.07934437	Walked in about 50fe	corner of Desmond ar	0.2	19.5	625	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.26714745	-71.0936206	Thick white suds in po	Parked at condo comp	0.7	19.8	1547	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.24761793	-71.13018278	very low flow, lots of c	Upstream of Reservat	17.3	22.7	26.03m	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.250559	-71.129583	Across stream from B	Just downstream of R	0.3	25.9	593	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.24282649	-71.12770352	about 20 ft downstrea	Downstream outfall be	1.2	22.3	2276	Boston-Logan	0.77	0.77	Wet
NA	NA	NA	42.242715	-71.127903	pool below outfall had	Upstream outfall behir	0.1	27.3	228.5	Boston-Logan	0.77	0.77	Wet
0.12	4.6	2.95	42.513171	-71.142649	1 ft deep at sampling	Halls Brook behind 18	0.4	14.6	780	Bedford	0.01	0.01	Dry
0.74	7.3	26.60	42.513291	-71.142539	Unnamed stream just	upstream of Halls Broc	0.5	14.4	932	Bedford	0.01	0.01	Dry
1.26	4.6	31.50	42.518739	-71.146411	Halls Brook across fro	Southeast of Landfill E	0.5	14	9.17	Bedford	0.01	0.01	Dry

1.24	4.4	NA	42.518739	-71.146411	duplicate of Mys08		na	na	na	Bedford	0.01	0.01	Dry
0.73	7.3	28.80	42.51858	-71.146281	after confluence of La	Just south of Landfill E	0.5	14.2	955	Bedford	0.01	0.01	Dry
1.28	4.4	27.80	42.520981	-71.147709	Upstream of Mys08 w	Low flow, light brown	0.5	16.1	935	Bedford	0.01	0.01	Dry
0.31	5.2	3.00	42.3628777	-71.1509558	Sawins Brook, sample	Near lot off Arsenal S	0.8	16.2	1521	Boston-Logan	0	0	Dry
NA	NA	16.70	42.3636533	-71.1511559	pipe discharging to Sa	about 30 feet upstrear	0.3	15.3	806	Boston-Logan	0	0	Dry
0.09	3.1	1.05	42.3599847	-71.1809755	"New81" waded to lef	Outfall to Charles off	0.6	14.6	1308	Boston-Logan	0	0	Dry
0.14	ND	0.75	42.3646351	-71.1892039	Used waders	Laundry Brook off Cal	0.4	18	830	Boston-Logan	0	0	Dry
0.14	ND	na	42.3646351	-71.1892039	Duplicate of Laund01		na	na	na	Boston-Logan	0	0	Dry
0.14	3.6	1.35	42.3600600	-71.2169465	taken 6' downstream	Cheessecake Brook n	0.7	16.7	1378	Boston-Logan	0	0	Dry
0.17	4.4	2.20	42.3730420	-71.2283524	shallow stream, collec	Beaver Brook near co	0.5	16.7	1035	Boston-Logan	0	0	Dry
0.11	7.9	6.90	42.4277872	-71.2050922	Lots of duck weed on	Off Mass Ave	0.4	17.1	819	Boston-Logan	0	0	Dry
0.19	6.1	4.55	42.4503760	-71.2202638		Near corner Grant St	0.4	15.8	859	Boston-Logan	0	0	Dry
0.41	7.8	7.80	42.659814	-71.318830	large duckbill coverin	Beaver Brook outfall	0.1	18.2	468.5	Lawrence	0	0	Dry
NA	NA	1.45	42.659837	-71.318833	sample taken just ups	Beaver Brook Mainste	0.2	16.9	358.8	Lawrence	0	0	Dry
0.15	ND	0.60	42.650395	-71.314502	west channel sampled	off Suffolk Street, clim	0.1	19.1	170	Lawrence	0	0	Dry
0.16	ND	0.10	42.643823	-71.307889	sampled open channe	downstream from Cer	0.1	19.2	168.7	Lawrence	0	0	Dry
0.11	4.1	2.25	42.633655	-71.302505	overturned barrel and	River Meadow Brook	0.3	17.5	714	Lawrence	0	0	Dry
0.15	4	ND	42.633655	-71.302505	Duplicate of RMB1		na	na	na	Lawrence	0	0	Dry
NA	NA	1.10	42.631057	-71.305968	1ft at deepest, used re	sampled downstream	0.3	17.6	711	Lawrence	0	0	Dry
0.17	7.2	7.15	42.638346	-71.343658	Flow from 2 large me	Black Brook off Middle	0.6	17.8	1145	Lawrence	0	0	Dry
NA	NA	8.20	42.634459	-71.349404	rocks covered w/ alga	Black Brook off Baldw	0.5	19.5	1077	Lawrence	0	0	Dry
0.15	8.1	3.40	42.520940	-71.104975	about 6 inches deep (	corner of Washington	0.9	16.7	1682	Lawrence	0.01	0.01	Dry
0.2	6.9	4.35	42.65447823	-71.14660047	hiked down hill sampl	5 Dundee Park near Y	0.4	15.1	806	Lawrence	0.01	0.01	Dry
0.19	4.5	0.60	42.65573487	-71.13334922	some deeper pools	Off Chestnut Street, n	0.3	15.1	530	Lawrence	0.01	0.01	Dry
0.25	4.8	0.35	42.67330118	-71.14974812	2-3 feet deep	Across from Shawshe	0.3	15.9	537	Lawrence	0.01	0.01	Dry
NA	NA	NA	42.67247656	-71.15143865	lots of bacterial growt	Hussy Brook - sample	0.3	15.5	539	Lawrence	0.01	0.01	Dry
0.14	5.5	2.35	42.695971	-71.1455601	stream scoured, lots o	South Lawrence Elem	0.6	15.1	1158	Lawrence	0.01	0.01	Dry
0.1	5.8	2.30	42.695971	-71.1455601	duplicate of SLE3		na	na	na	Lawrence	0.01	0.01	Dry
0.32	28	34.90	42.70991636	-71.15129912	video taken of what lo	pipe off Lawrence Hos	0.4	19.1	888	Lawrence	0.01	0.01	Dry
0.14	8.5	0.80	42.633655	-71.302505	overturned barrel and	River Meadow Brook	0.5	16	1018	Lawrence	0.01	0.01	Dry
0.18	6.9	~7.5	42.251003	-71.051930	sample collected whe	about 1yard from outf	0.4	14.9	712	Boston-Logan	0.51	0.57	Wet
0.21	8.9	~10.5	42.24781922	-71.05546405	collected close to outfall in pool		0.5	15.4	933	Boston-Logan	0.51	0.57	Wet
0.1	2.8	~0.85	42.20481659	-71.19661788	sampled right culvert		0.6	16.7	1146	Norwood	0.54	0.63	Wet
0.16	3.3	~1.6	42.20509841	-71.964841	sample collected before two steams mix		0.2	15.5	515	Norwood	0.54	0.63	Wet
0.07	3.8	ND	42.204594	-71.198514	sample collected near culvert		0.3	17.4	712	Norwood	0.54	0.63	Wet
0.08	3.8	~1.7	42.204594	-71.198514	duplicate of PB02		0.3	17.4	712	Norwood	0.54	0.63	Wet
NA	NA	1.8	42.418716	-71.151379	just downstream of br	Mill Brook @ Mystic S	0.5	11.3	910	Bedford	0	0	Dry
NA	4.2	6.35	42.418597	-71.152247	Sample taken from flo	Mill Brook @ opening	0.5	11.7	921	Bedford	0	0	Dry
NA	NA	NA	42.41803618	-71.15649782	Start of culvert under	Mill Brook near bike p	0.4	11.6	884	Bedford	0	0	Dry
NA	3.6	1.05	42.41800384	-71.1599327	two 3 foot culverts an	Near Arlington High S	0.4	11.6	859	Bedford	0	0	Dry
NA	3.6	2.45	42.41800384	-71.1599327	duplicate of AHS		na	na	na	Bedford	0	0	Dry
NA	3.4	2.05	42.42030025	-71.16460763	6ft stone channel, foo	Mill Brook instream	0.4	12.1	755	Bedford	0	0	Dry
NA	NA	NA	42.42032496	-71.16473294	moss/algae growing o	Outfall to Mill Creek	0.6	10.4	1200	Bedford	0	0	Dry
NA	8.3	6	42.42321769	-71.17286099	lots of green algae inside pipe		1.4	11.4	2700	Bedford	0	0	Dry
NA	6.4	4.15	42.42389075	-71.17374022	fresh smelling	Off Ryder Street lot	1.1	12.8	2188	Bedford	0	0	Dry
NA	NA	2.65	42.42388575	-71.17372022	hole in wall/seep	East side of culvert wa	0.5	10.0	1394	Bedford	0	0	Dry
NA	3.8	1.25	42.42440075	-71.17458522	near Out of the Wood	Outfall to Mill Brook, E	0.7	10.1	1450	Bedford	0	0	Dry
NA	ND	0.65	42.42443302	-71.17464016	waders, culvert just up	Outfall to Mill Brook, V	0.6	9.8	1280	Bedford	0	0	Dry
NA	3.3	0.75	42.42475049	-71.18132349	Park St behind Penzy	Mill Brook main stem,	0.3	14.1	612	Bedford	0	0	Dry
NA	4.9	2	42.44732536	-71.13860428	near gauging station	Sampled above dam	0.4	10.3	821	Bedford	0	0.02	Dry
NA	NA	NA	42.45109149	-71.13689456	waterfall ~250ft upstre	Waterfield St bridge	0.4	10.2	806	Bedford	0.16	0.18	Wet
NA	NA	NA	42.45284032	-71.13542441	used reach and wade	Mt Vernon St bridge b	0.4	10.2	794	Bedford	0.16	0.18	Wet
NA	NA	NA	42.45571045	-71.13669402	used reach	Behind Stop & Shop	0.3	12.6	561	Bedford	0.16	0.18	Wet
NA	5.2	2.25	42.4564901	-71.13647243	outfall on far left looki	Skillings road from un	0.4	9.1	907	Bedford	0.16	0.18	Wet
NA	5.4	1.75	42.4564901	-71.13647243	duplicate of Skill01		na	na	na	Bedford	0.16	0.18	Wet
NA	NA	NA	42.45646101	-71.13649804	very low flow - if any	small pipe exiting nea	0.4	9.1	908	Bedford	0.16	0.18	Wet
NA	5.1	1.4	42.4608915	-71.13718955	just downstream near	Swanton Street bridge	0.4	9.1	905	Bedford	0.16	0.18	Wet
NA	5.6	2.6	42.463455	-71.149258	sampled far right of c	Russel Brook at the e	0.5	9.7	965	Bedford	0.16	0.18	Wet
NA	11	5.7	42.47549599	-71.15991194	rust/orange stain on ro	main stream outfall or	0.8	19.8	1655	Bedford	0.17	0.19	Wet
NA	NA	NA	42.48090577	-71.15755569	slightly crushed small	Off Harrison Ave near	0.5	12.2	1070	Bedford	0.17	0.19	Wet
NA	15	4.75	42.4809258	-71.15751796	Main outfall	Off Harrison Ave near	1.3	7.9	2495	Bedford	0.17	0.19	Wet
NA	9.7	3.35	42.47993991	-71.15617846	very slow flow	opposite side of ballpa	0.8	12.5	1578	Bedford	0.17	0.19	Wet
NA	4.3	0.9	42.42029396	-71.16475294	Just upstream of Grov	Mill Brook instream	0.4	15.9	850	Bedford	0.12	0.12	Wet
NA	NA	NA	42.42032496	-71.16473294	moss/algae growing o	Outfall to Mill Creek	0.7	12.4	1307	Bedford	0.12	0.12	Wet
NA	4.2	1.8	42.42029396	-71.16475294	duplicate of Grove01a		na	na	na	Bedford	0.12	0.12	Wet
NA	NA	NA	42.422035	-71.170577	needed ladder/waders	At end of Robin Stree	0.8	12.5	1533	Bedford	0.12	0.12	Wet
NA	NA	NA	42.420417	-71.168133	lots of suspended sed	Mill Brook instream ne	0.4	16.1	847	Bedford	0.12	0.12	Wet
NA	NA	NA	42.42389075	-71.17374022	1/2 the flow from last	Off Ryder Street lot	1.1	13.6	2257	Bedford	0.12	0.12	Wet
NA	NA	NA	42.42440075	-71.17458522	near Out of the Wood	Outfall to Mill Brook, E	0.7	11.7	1407	Bedford	0.12	0.12	Wet
NA	3.9	1.35	42.424465	-71.174718	neighbor stopped ove	Just upstream of Ryde	0.4	17	729	Bedford	0.12	0.12	Wet
NA	3.8	1.95	42.42475049	-71.18132349	Park St behind Penzy	Mill Brook main stem,	0.3	17.6	714	Bedford	0.12	0.12	Wet
NA	3.7	2	42.425348	-71.186230	PPCP bottle broke, re	behind 1395 Mass Av	0.3	18.2	684	Bedford	0.12	0.12	Wet
NA	4.1	2.3	42.426894	-71.189660	Drake' slow flow, just	Between condo comp	0.4	15.8	726	Bedford	0.12	0.12	Wet
NA	NA	NA	42.426882	-71.189584	just before confluence	just downstream of Ar	0.3	20.2	660	Bedford	0.12	0.13	Wet
NA	6.3	1.2	42.4277872	-71.2050922	lots of duck weed on s	Mass ave across from	0.5	18	946	Bedford	0.12	0.13	Wet
NA	NA	NA	42.4503760	-71.2202638		Near corner Grant St	0.4	12.3	741	Bedford	0.12	0.13	Wet
NA	NA	0.4	42.513171	-71.142649	machinery stored nea	Halls Brook behind 18	0.4	11.1	875	Bedford	0	0	Dry
NA	NA	11.3	42.513291	-71.142539	sampled before timbe	Unnamed stream just	0.4	10.1	839	Bedford	0	0	Dry
NA	NA	19.5	42.518563	-71.146526	Algae and oil on surfa	New Boston St where	0.4	9..9	815	Bedford	0	0	Dry
NA	NA	20	42.518739	-71.146411	not as strong smelling	Opposite stream from	0.4	10.2	896	Bedford	0	0	Dry
NA	NA	3.85	42.51422481	-71.14551115	flow on downstream s	sampled from left ope	0.4	11.3	878	Bedford	0	0	Dry
NA	NA	3.55	42.51422481	-71.14551115	duplicate of Torr01		0.4	11.3	878	Bedford	0	0	Dry
NA	NA	2.65	42.51048269	-71.15492526	fair amount of litter	upstream of road cros	0.4	12.1	869	Bedford	0	0	Dry
NA	NA	2.7	42.5086557	-71.1583669	construction on bridge	bottom of stone run of	0.5	12.7	987	Bedford	0	0	Dry
NA	NA	NA	42.25766282	-71.00896849	sampled stream before bridge		0.2	12.2	360.6	Milton-Blue Hi	1.5	0	Wet
NA	NA	0.05	42.25766282	-71.00896849	duplicate of FBP02		na	na	na	Milton-Blue Hi	1.5	0	Wet

NA	NA	ND	42.25627321	-71.02067588	onleft side of culvert		0.2	12.3	428.5	Milton-Blue Hi	1.5	0	Wet
NA	NA	10.8	42.25620978	-70.99314315			8.1	13.3	14.1	Milton-Blue Hi	1.5	0	Wet
NA	NA	35.80	42.27602123	-71.0320993	sampled inflow from culvert		4.3	12.6	7.78	Milton-Blue Hi	1.5	0	Wet
NA	NA	11.3	42.277357	-71.008933	outfall across from cla	just south of WollB1 o	0.3	12.4	675	Milton-Blue Hi	1.5	0	Wet
NA	NA	8.65	42.278672	-71.012859		outfall between yacht	3.5	12.8	4.87	Milton-Blue Hi	1.5	0	Wet
NA	NA	NA	42.27361693	-71.03395231	5ft from outflow		1.1	13.1	1708	Milton-Blue Hi	1.5	0	Wet
NA	NA	2.2	42.39528219	-71.17631914	duplicate of WEB013		na	na	na	Bedford	0	0	Dry
NA	NA	1.1	42.39528219	-71.17631914	lots of suspended sed	Wellington Brook	0.7	12.6	1433	Bedford	0	0	Dry
NA	NA	NA	42.4225696	-71.14928822		Mystic Valley Parkway	0.6	13.8	1269	Bedford	0	0	Dry
NA	NA	0.25	42.41770489	-71.1574838	may be multiple pipe	pipe discharging to Mi	0.1	17.8	237	Bedford	0	0	Dry
NA	NA	NA	42.42471486	-71.17533266	collected from seep under pipe opening		1	18.1	1869	Bedford	0	0	Dry
NA	NA	1.05	42.426894	-71.189660	slow flow, just upstrea	Between condo comp	0.5	21.5	665	Bedford	0	0	Dry
NA	NA	0.18	42.426882	-71.189584	before confluence wit	just downstream of Ar	0.3	21.2	667	Bedford	0	0	Dry
NA	NA	2.45	42.42645629	-71.19436402		pipe discharging unde	1.3	17.6	2482	Bedford	0	0	Dry
NA	NA	ND	42.42648362	-71.19440958	6ft wide, rocky stream	Bow street, just downs	0.3	18.3	537	Bedford	0	0	Dry
NA	NA	1.45	42.42834205	-71.19676456	36" double culvert col	Just downstream of F	0.2	19.3	513	Bedford	0	0	Dry
NA	NA	0.05	42.42901218	-71.1975303	tributary, thick film co	Walked ~100yards up	0.2	20.9	362.9	Bedford	0	0	Dry
NA	NA	5.95	42.39988394	-70.99242127	duplicate of WashN01		na	na	na	Boston-Logan	0.08	0.43	Wet
NA	NA	6.90	42.39988394	-70.99242127	outfall about 1ft under	Behind Shaw's back c	0.5	16.9	993	Boston-Logan	0.08	0.43	Wet
NA	NA	11	42.39990454	-70.99237953	just upstream of Was	Sales Creek	1.3	18.2	2527	Boston-Logan	0.08	0.43	Wet
NA	NA	ND	42.40260397	-71.00346085	off 1A by esquire club	Green Street in Rever	0.5	17.8	943	Boston-Logan	0.08	0.43	Wet
NA	NA	17.7	42.3830573	-71.03016877	40min before low tide	Condor Street outfall,	23.3	16.1	36.7mS	Boston-Logan	0.08	0.43	Wet
NA	NA	50*	42.36126566	-71.05083507	near Christopher Colu	Climbed down betwee	26.7	16.3	44.67mS	Boston-Logan	0.08	0.43	Wet
NA	NA	35.50	42.3854766	-71.06883007	Appeared to be mixed	Behidnd Schraft's buil	18.7	18.7	30.85mS	Boston-Logan	0.08	0.43	Wet
NA	NA	33.90	42.38549883	-71.06886597	Outflow w/some tidal	Behidnd Schraft's buil	17.2	19.5	28.5mS	Boston-Logan	0.08	0.43	Wet
NA	NA	15.9	42.40367	-71.020987	significant gray bacte	privately owned, drain	0.5	16.2	1688	Boston-Logan	0.08	0.43	Wet
NA	NA	3	42.70688	-71.1476552	SLE3a' significant wh	South Lawrence Elem	0.5	14.6	1045/83	Lawrence	0.04	0.04	Dry
NA	NA	2.35	42.70688	-71.1476552	significant white/tan/g	South Lawrence Elem	na	na	na	Lawrence	0.04	0.04	Dry
NA	NA	1.25	42.70688	-71.1476552	SLE3b' Nitrate: 2. Nitr	South Lawrence Elem	0.5	14.83	984/790	Lawrence	0.04	0.04	Dry
NA	NA	1.65	42.70688	-71.1476552	SLEc' Lawrence DPW	South Lawrence Elem	0.5	14.7	957/747	Lawrence	0.04	0.04	Dry
NA	NA	NA	42.70991636	-71.15129912	samples sent for PCR	pipe off Lawrence Hos	0.1	18.8	12.18/18	Lawrence	0.04	0.04	Dry
NA	NA	12.4	42.465157	-71.392813	pool at base of culver	<1/2 mile from bridge	0.2	27.6	90.3/37	Bedford	0	0	Dry
NA	NA	ND			Effluent of a membrane bioreactor			24	495.8	Falmouth	0.12	0.21	Wet
NA	NA	25.10			6" below surface, 6"sa	tip pans (24/day - 1galeach) sto		22.9	479	Falmouth	0.12	0.21	Wet
NA	NA	38.70			12" below surface	12"sand		21.1	602	Falmouth	0.12	0.21	Wet
NA	NA	ND						21.6	351	Falmouth	0.12	0.21	Wet
NA	NA	ND			24" below surface			20.1	571	Falmouth	0.12	0.21	Wet
NA	NA	2.5			Influent			19.3	479	Falmouth	0.12	0.21	Wet
NA	NA	36.80			12" with air			20.3	579	Falmouth	0.12	0.21	Wet
NA	NA	11.5								Falmouth	0.12	0.21	Wet
NA	NA	ND						20.3	606	Falmouth	0.12	0.21	Wet
NA	NA	NA	42.968332	-71.472794	Oil sheen across all ro	called EPA incident re	0.3	18.1	429/446.	Manchester	0	0	Dry
NA	NA	NA	42.985780	-71.469196	Strong musty odor, ta	sampled flow out of pi	1	17.6	934/165	Manchester	0	0	Dry
NA	NA	NA	42.998669	-71.468348	next to outfall 047, thi	outfall just north (adja	2.1	15.2	992/321	Manchester	0	0	Dry
NA	NA	NA	42.998660	-71.468348	steam coming out of p	just south of 047N, by	2.5	17.5	4750	Manchester	0	0	Dry
NA	NA	NA	43.209555	-71.531041	thick black/orange coating on bottom, tadpol		0.6	16.7	1204	Concord	0	0	Dry
NA	NA	NA	43.21004	-71.530441	grated outfall, flow is approx. 10 gal/min poo		0.7	14	1070	Concord	0	0	Dry
NA	NA	NA	43.209555	-71.531041	duplicate of Mer4120		0.6	16.7	1204	Concord	0	0	Dry
NA	NA	NA	43.193970	-71.542492	midstream sample ne	Concord District Cour	0.7	22.9	1458	Concord	0	0	Dry
NA	NA	NA	43.199674	-71.548718	Just upstream of Clin	off Pleasant Street	0.5	23.1	1080	Concord	0	0	Dry
NA	NA	NA	42.38549883	-71.06886597	Behidnd Schraft's bui	Sampled 10 min befo	22.6	20.8	35.83mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.3854766	-71.06883007	Behidnd Schraft's bui	East of 29J212	21.7	21.8	34.4mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.38549883	-71.06886597	duplicate of 29J212		22.6	20.8	35.83mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.466942	-70.92203147	Stacey Brook, Swamp	Met Town Engineer, V	0.3	21.9	621	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.466942	-70.92203147	Stacey Brook, Lynn		0.4	21.9	776	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.51380064	-70.88804384	Palmer Cover, Salem	White bacterial growth	1.5	21.1	4209	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.54714736	-70.86166491	Lynch Park, Beverly N	sampled 2hrs after low	0.7	17.6	1339	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.55097916	-70.8503408	Down Brackenbury La	Brackenbury Beach	10	18.6	16.91mS	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.55443402	-70.84983196	sampled under bridge	lots of ducks upstream	0.2	20.5	409.2	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.54639263	-70.8616749	Lynch Park, Beverly	Small pipe exiting just	1.8	19.3	7.77mS	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.46084009	-71.13716417	Downstream of Swan	USGS gauge @ 0.9, d	0.5	20.6	1025	Boston-Logan	0	0	Dry
NA	NA	NA	42.469411	-71.1252171	Downstream of Wash	Water almost opaque	0.5	22	1083	Boston-Logan	0	0	Dry
NA	NA	NA	42.4694521	-71.1249571	Outfall upstream of W	OF more than 1/2 full	0.5	21.4	1004	Boston-Logan	0	0	Dry
NA	NA	NA	42.477141	-71.1176671	(previously '1Merrell')	low/slow flow could no	0.5	21.6	1096	Bedford	0.01	0.13	Dry
NA	NA	NA	42.4770646	-71.1175936	(previously '1Kraft')Sw	2 pipes just upstream	0.7	21.5	1366	Bedford	0.01	0.13	Dry
NA	NA	NA	42.491580	-71.128834	(previously 'Sal')1921	USGS field team mea	0.5	20.9	1086	Bedford	0.01	0.13	Dry
NA	NA	NA	42.50317874	-71.13529801	Mishawum Bridge, do	lots of moss on rocks/	0.4	23.2	1035	Bedford	0.01	0.13	Dry
NA	NA	NA	42.5026954	-71.1353458	Outfall downstream o	Raccoon prints in pipe	1.3	19.6	2743	Bedford	0.01	0.13	Dry
NA	NA	NA	42.5026965	-71.1351128	Stormdrain cover tipp	gray plaque at bottom	na	na	na	Bedford	0.01	0.13	Dry
NA	NA	NA	42.513171	-71.142649	1 ft deep at sampling	Halls Brook behind 18	0.4	19.6	873	Bedford	0.01	0.13	Dry
NA	NA	NA	42.513291	-71.142539	Unnamed stream just	Very low flow	0.4	23.4	897	Bedford	0.01	0.13	Dry
NA	NA	NA	42.513291	-71.142539	duplicate of DRR1		0.4	23.4	897	Bedford	0.01	0.13	Dry
NA	NA	NA	42.38549883	-71.06886597	Behidnd Schraft's bui	Sampled 10 min befo	28.3	18.9	44.82mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.3854766	-71.06883007	Behidnd Schraft's bui	East of 29J212	28.2	18.6	43.67mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.288373	-71.092879	Canterbury Brook, Bo	fine sediments on bot	0.2	20	344.4	Boston-Logan	0	0	Dry
NA	NA	NA	42.288373	-71.092879	Duplicate of CantB		0.2	20	344.4	Boston-Logan	0	0	Dry
NA	NA	NA	42.308203	-71.12058	Arnold Arboretum off	sides of outfall deterio	0.7	13.6	1304	Boston-Logan	0	0	Dry
NA	NA	NA	42.340354	-71.099856	Muddy River in Back	Sampled just downstr	0.5	20.5	1058	Boston-Logan	0	0	Dry
NA	NA	NA	42.330289	-71.114017	Two stone 5' semi-circ	across from 33 Pondv	0.5	25.4	966	Boston-Logan	0	0	Dry
NA	NA	NA	42.326763	-71.114752	Off Riverdale Pkwy in	downstream of outfall	0.9	15.1	1738	Boston-Logan	0	0	Dry
NA	NA	NA	42.321703	-71.119080	Parked on Chestnut S	just downstream from	0.3	27.1	606	Boston-Logan	0	0	Dry
NA	NA	NA	42.70991636	-71.15129912	samples sent for PCR	pipe off Lawrence Hos	1.4	20.1	2644	Lawrence	0	0	Dry
NA	NA	NA	42.70995636	-71.15139912	mainstem Spickett riv	lots of growth on bottc	0.3	22.6	535	Lawrence	0	0	Dry
NA	NA	NA	42.713273	-71.158219	upstream of Jackson	heavy sedimentation o	0.3	23.1	530	Lawrence	0	0	Dry
NA	NA	NA	42.713893	-71.172624	mainstem Spickett riv	sampled at the end of	0.3	23.2	529	Lawrence	0	0	Dry
NA	NA	NA	42.70688	-71.1476552	significant white/tan/g	South Lawrence Elem	0.6	15.6	1120	Lawrence	0	0	Dry

NA	NA	NA	42.696984	-71.143777	Mainstem Shawsheen	river sample	na	na	na	Lawrence	0	0	Dry
NA	NA	NA	42.67330118	-71.14974812	2-3 feet deep	Across from Shawshe	0.2	24.3	471.5	Lawrence	0	0	Dry
NA	NA	NA	42.67247656	-71.15143865	lots of bacterial growt	Hussy Brook - sample	0.3	24.7	676	Lawrence	0	0	Dry
NA	NA	NA	42.67247656	-71.15143865	duplicate of Huss02		0.3	24.7	676	Lawrence	0	0	Dry
NA	NA	NA	42.4787841	-71.1131562	Sweetwater Brook we	behind service master	0.6	21.4	1193	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.4826072	-71.1046187	Cl2 exceeded holding	Unnamed tributary to	0.6	15.1	1280	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.483930	-71.1039388	Cl2 exceeded holding	Sweetwater Brook @	0.7	18.2	1432	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.484141	-71.103935	Inside culvert upstrea	sampled largest pipe -	0.5	19.4	950	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.48607	-71.0976008	Walked upstream fron	Large box culvert cov	0.8	16.1	1632	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.48607	-71.0976008	duplicate of Elm2		0.8	16.1	1632	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.490277	-71.101799	Cl2 exceeded holding	Off Toms Way in Stor	0.9	18.1	1701	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.513171	-71.142649	1 ft deep at sampling	Halls Brook behind 18	0.4	20.6	848	Bedford	0	0.1	Dry
NA	NA	NA	42.51339681	-71.14295383	outfall about 100ft upstream from Halls2 loca		0	24.8	50.3	Bedford	0	0.1	Dry
NA	NA	NA	42.51079059	-71.14820571	most of flow coming f	lots of frogs in stream	1	23.5	1960	Bedford	0	0.1	Dry
NA	NA	NA	42.51333787	-71.14802303	upstream of small pec	end of 2nd st, asked #	0.4	22.4	825	Bedford	0	0.1	Dry
NA	NA	NA	41.71543572	-71.36069556	sampled on outgoing	sampled between 2 ro	29.6	24.6	45.72mS	Providence TF	0	0	Dry
NA	NA	NA	41.71380905	-71.36475741		walked up 20 ft from b	20.6	22.4	32.83mS	Providence TF	0	0	Dry
NA	NA	NA	41.7135672	-71.36551541	Mill creek, 0.67 ng/L	Sulfamethoxazole was	20.7	23.5	33.13mS	Providence TF	0	0	Dry
NA	NA	NA	41.71213909	-71.37518941	leaky storm drain pipe	under bridge, layer of	1.3	21.1	2447	Providence TF	0	0	Dry
NA	NA	NA	41.71205509	-71.37524941	bacteria and kits only		na	na	na	Providence TF	0	0	Dry
NA	NA	NA	41.71372754	-71.37889632	downstream from roa	lockwood brook near b	0.2	20.2	314.2	Providence TF	0	0	Dry
NA	NA	NA	41.70908196	-71.38289364	racoon prints on bank	off westshore drive up	0.2	21.6	329	Providence TF	0	0	Dry
NA	NA	NA	41.70708421	-71.38031976	double culvert under t	upstream side of bridg	0.2	16.9	435.9	Providence TF	0	0	Dry
NA	NA	NA	41.71964024	-71.38696064	bacteria and kits only	upstream side of bridg	0.1	20.9	270	Providence TF	0	0	Dry
NA	NA	NA	41.71935982	-71.38618735	epipe designed to tak	at the end of emerson	0.1	20.1	225.8	Providence TF	0	0	Dry
NA	NA	NA	41.71461744	-71.38035705	bact and kits only	Meadowbrook road ou	0.1	22.2	173.9	Providence TF	0	0	Dry
NA	NA	NA	41.73964713	-71.39538267	1-2 in of green algae	end of sweetfern drive	0.1	18.4	220.9	Providence TF	0	0	Dry
NA	NA	NA	41.73964713	-71.39538267	duplicate of SweetF		0.1	18.4	220.9	Providence TF	0	0	Dry
NA	NA	NA	43.556117	-71.500635	Ahern State Park Bea	pre-storm sample. Rig	0	21.7	90.8	Laconia	0.01	0.02	Dry
NA	NA	NA	43.557084	-71.494182	Facility pipe to stream	Pre-storm sample.	0.1	16.8	184.6	Laconia	0.01	0.02	Dry
NA	NA	NA	43.556117	-71.500635	Ahern State Park Bea	2nd sample, taken du	0	89.3	21.7	Laconia	0.13	0.13	Wet
NA	NA	NA	43.556520	-71.500969	Governor Brook	No distinct flow, light c	0.1	16.3	198.8	Laconia	0.13	0.13	Wet
NA	NA	NA	43.556625	-71.499442	Road crossing upstrea	orange/green growth c	0.2	15.9	341.6	Laconia	0.21	0.21	Wet
NA	NA	NA	43.557084	-71.494182	Facility pipe to stream	same sample location	0	17.6	54	Laconia	0.21	0.21	Wet
NA	NA	NA	43.557084	-71.494182	Duplicate of 996-F		0	17.6	54	Laconia	0.21	0.21	Wet
NA	NA	NA	43.559021	-71.494120	sampled facility pipe b	sampled during storm	0	18.5	13.5	Laconia	0.21	0.21	Wet
NA	NA	NA	43.266493	-71.483356			0	15.5	14.5	Laconia	0.44	0.44	Wet
NA	NA	NA	43.209555	-71.531041			0	18.3	18.3	Concord	1.02	1.04	Wet
NA	NA	NA	42.40269115	-71.00375656	Cloudy; algae on rock	Sampled under pedes	0.9	21	1840	Boston-Logan	0	0	Dry
NA	NA	NA	42.40367	-71.020987	significant gray bacte	privately owned, drain	1	19.6	1850	Boston-Logan	0	0	Dry
NA	NA	NA	42.403340	-71.020587	gray bacteria plaque,	(Gillooly) Cabot St be	2	18.1	3750	Boston-Logan	0	0	Dry
NA	NA	NA	42.42547262	-71.02662504	walked upstream from	Sampled about 30ft u	2.4	21.5	4509	Boston-Logan	0	0	Dry
NA	NA	NA	42.42105874	-71.02615376	could see light at othe	Corner of Sargent and	0.3	18.3	687	Boston-Logan	0	0	Dry
NA	NA	NA	42.4922811	-70.85511019	near boat launch, sam	outfall across causewa	3.8	19.6	6.92mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.4922811	-70.85511019	duplicate of Dlaunch		3.8	19.6	6.92mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.4891136	-70.84335607	green alge at bottom	Ocean Ave off Marble	0.3	19	680	Boston-Logan	0	0	Dry
NA	NA	NA	42.51462618	-70.8462946	Grace Oliver Beach S	Corner of Crowninshie	0.2	21	632	Boston-Logan	0	0	Dry
NA	NA	NA	42.51447501	-70.86599014	Stamski Beach	sample 20ft from shor	28.3	23.5	43.87mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.3628777	-71.1509558	Sawins Brook	small trib flowing ~100	0.3	14.1	571	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.3628777	-71.1509558	duplicate of SawB01		0.3	14.1	571	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364451	-71.154419	downstream side of A	1 ft deep, started sprin	0.7	15.9	1407	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364313	-71.154481	Arlington St culvert - f	~30ft upstream, 8" pip	0.7	16	1414	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364256	-71.154481	Arlington St culvert - c	no inlet pipes can be s	0.7	15.9	1417	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364351	-71.154519	Arlington St culvert - f	sampled far rt of culve	0.7	15.9	1354	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364037	-71.183908	Watertown outfall #13	weather - still sprinklin	0.1	17.8	260.3	Boston-Logan	0.03	0.52	Wet
NA	NA	NA	42.364489	-71.184223	Watertown outfall #12	some small fish, could	0.5	16.8	1012	Boston-Logan	0.03	0.52	Wet
NA	NA	NA	42.364774	-71.184952	Watertown outfall #11	outfall opening under	0.6	16.2	1168	Boston-Logan	0.03	0.52	Wet
NA	NA	NA	42.364733	-71.189067	Laundry Brook	sampled just inside op	0.3	15.5	565	Boston-Logan	0.03	0.52	Wet
NA	NA	NA	42.367449	-71.198957	culvert on right, not a	lot of flow	0.7	18.1	1348	Boston-Logan	0.04	0.53	Wet
NA	NA	NA	42.367489	-71.198853	About 1ft of outfall un	can hear running wate	0.7	17.7	1299	Boston-Logan	0.04	0.53	Wet
NA	NA	NA	42.4922811	-70.85511019	Sampled left culvert,	more flow than last tin	20.7	11.9	33.13mS	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.4922811	-70.85511019	duplicate of Dlaunch		20.7	11.9	33.13mS	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.492557	-70.859421	Opened drain manhol	Brick sides w/hard bot	0.7	16.3	1483	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.493467	-70.860430	Opened drain manhol	used reach	0.4	16.3	743	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.492693	-70.860829	Opened drain manhol	gas odor	0.2	16	491.7	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.494598	-70.859443	Opened drain manhol	Sampled drain pipe er	0.2	16.9	440	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.496982	-70.856396	Opened drain manhol	double 36" pipes com	0.3	16.9	685	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.502967	-70.856873	Opened drain manhol	brick lined, used reach	0.4	16.4	744	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.506562	-70.856223	Opened drain manhol	Sampled main flow, 3	0.4	15.2	809	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.506562	-70.856223	Pipe flowing into storn	Started flowing after N	0.3	17.5	541	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.278672	-71.012859	Pungent 'corpse-y' od	outfall between yacht	17.3	13.8	28.18mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.277357	-71.008933	trash in water and pla	just south of WollB1 o	13.2	14.3	24.89mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.277357	-71.008933	barnacle encrusted ou	outfall south of two ya	24.4	14.7	38.45mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.28935547	-71.04177324	Took Beach sample h	Tenean Beach, off Te	16.9	14.1	22.24mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.282780	-71.046962	large tide gate ~2? Ho	sampled center of sou	1.8	14.8	33.68mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.282780	-71.046962	duplicate of 10L094		1.8	14.8	33.68mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.282540	-71.046292	1/2 silted up	sampled about 10 fee	1.3	16.3	2514	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.275935	-71.031798	main chanell under he	previously named Sag	3.4	15.8	6.23mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.275941	-71.031767	green alge at bottom	former drainline that h	0	13.9	91.6	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.273601	-71.034010	large wooden tide gat	Previously named Sag	0.8	15.4	1590	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.273990	-71.030634	very dark sediments	Previously named Sag	1.5	16.9	33.20mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.299943	-71.006177	seep from sewage line	to main interceptor or	8.4	17.9	834	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.299779	-71.005800	Sample collected at b	waded ~ 6 ft	37.1	13.7	43.74mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.277051	-71.009467	Wollaston Beach Sam	waded ~ 6ft between \	31.3	13.2	41.01mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.278670	-71.013452	Wollaston Beach Sam	waded ~ 6ft near Wol	31.3	13.6	47.97mS	Boston-Logan	0.13	0.14	Wet

RARE Stormwater Outfall Inspection & Sampling Summary

Location				Outfall		Inspection										
													Surfact. (mg/l)			
Date	Town	Site Name	Time	Pipe Mat.	Dia. (in)	Est. Flow (gpm)	Odor	Color	Turbidity	Floatables	E.coli (MPN/100ml)	Entero (MPN/100ml)	Alpha	Field	DR-850	Alpha
5/19/09	Woburn	Comm1	7:57	open stream	na	na	none	tea	none	few	82	~20	0.07	0.2	NA	0.174
5/19/09	Woburn	Halls2	8:51	open stream	na	na	none	light tea	none	None	606	~146	0.06	~0.1	NA	0.161
5/19/09	Woburn	DRR1	9:33	open stream	na	/2 that of halls	none	light tea	cloudy	None	626	~171	~0.05	~0.1	NA	8.50
5/19/09	Woburn	Mys07	10:01	open stream	na	na	none	tea	heavy	None	518	~63	0.06	~0.1	NA	4.88
5/19/09	Woburn	Mys08	10:20	open stream	na	na	none	med tea	none	None	~4	~10	~0.05	~0.1	NA	15.80
5/19/09	Woburn	Mys08d	10:20	open stream	na	na	none	med tea	none	None	12	ND	~0.05	~0.1	NA	15.50
5/26/09	Somerville	MWRA205	7:57	CM	4x4 box	na	none	light tea	none	None	77010	1999	0.22	2	NA	1.93
5/26/09	Chelsea	Mill2	10:06	CM	~30 inches	5-10gal/min	strong odor	clear	none	some suds	44	20	0.19	1.5	NA	4.31
5/26/09	Chelsea	Mill2b	10:45	CM	~24 inches	1-2gal/min	strong odor	ay/black clou	med	None	100	ND	0.21	1	NA	4.92
5/26/09	Chelsea	Mill2a	11:10	CM	~24 inches	1 gal/min	none	clear	none	None	~4	ND	0.39	1	NA	7.02
5/26/09	Stoneham	SPB0	12:50	open stream	na	na	none	clear	none	None	21	31	ND	ND	NA	ND
5/26/09	Stoneham	SPB0d	12:50	open stream	na	na	none	clear	none	None	16	~10	~0.05	ND	NA	ND
6/2/09	Medford	MHB	7:25	CM	40	low	gas	lightly cloud	none	None	534	78	ND	~0.1	ND	0.2
6/2/09	Medford	MHBup	8:07	open stream	na	na	none	clear	none	None	48	142	ND	ND	NA	0.086
6/2/09	Belmont	WinB	9:10	open stream	na	na	none	clear	none	None	6212	2908	ND	0.2	NA	0.21
6/2/09	Belmont	WinBd	9:10	open stream	na	na	none	clear	none	None	6212	2452	ND	0.2	0.024	0.172
6/2/09	Arlington	91Mys	10:20	open stream	na	na	musty	cloudy	none	None	>241960	13734	1.3	1.25	0.665	1.53
6/2/09	Arlington	MillB	10:50	CM	10x15ft	na	musty	very cloudy	none	None	550	445	0.06	0.2	0.031	0.206
6/9/09	Quincy	WollB1	7:35	CM	4x4 box	50-100	thick musty	clear	none	some suds	420	1741	ND	1.5	ND	0.187
6/9/09	Quincy	WollB5	8:25	CM	16	10-15gal/min	none	clear	none	None	ND	ND	ND	0.2	0.046	0.624
6/9/09	Dorchester	Ten1	9:35	Pipe Mat.	24-30	na	none	tan	very, very	None	96	21	0.08	2	0.048	1.28
6/9/09	Boston	Bos090	9:57	CM	10x10 box	na	musty	tea/tan	some	None	54750	149	0.14	2	0.091	0.823
6/9/09	Dorchester	CantB	11:35	open stream	na	na	usty/sewag	blue/grayish	some	None	198630	34658	1.6	1.5	1.03	4.66
6/9/09	Dorchester	CantBD	11:35	open stream	na	na	usty/sewag	blue/grayish	some	None	173290	48392	1.5	1.5	1.05	4.75
6/16/09	Danvers	Fish004	7:55	open stream	na	na	none	light tan	none	None	250	468	~0.05	0.2	0.028	ND
6/16/09	Danvers	Fish005	8:35	open stream	na	na	none	clear	none	None	333	714	ND	~0.1	0.022	ND
6/16/09	Marblehead	Stram01	10:05	open stream	na	na	none	very light tea	none	None	489	434	~0.05	ND	0.029	0.37
6/16/09	Marblehead	Stram02	10:40	open stream	na	na	none	very light tea	none	None	494	452	~0.05	ND	0.04	0.193
6/16/09	Lynn	Stacey	11:25	CM	4'x8'	>100	musty	NS	none	None	>241960	22398	0.31	0.4	0.216	1.04
6/16/09	Lynn	StaceyD	11:25	CM	4'x8'	>100	musty	NS	none	None	>241960	24066	0.29	0.4	0.208	0.949
7/14/09	Milton	UNB016	8:36	open stream	na	na	none	clear	none	None	599	109	ND	~0.1	ND	0.304
7/14/09	Milton	UNB002	9:02	CM bridge	3'x6' box	na	none	clear	none	None	152	69	ND	~0.1	0.077	0.37
7/14/09	Quincy	WollB2	9:50	open stream	na	ery strong flo	none	tea	yes	None	265	~8	ND	2	0.029	0.094
7/14/09	Quincy	WollB1A	11:08	CM	3'x3' box	10-15gal/min	strong must	clear	none	he trash in w	3080	1844	ND	0.75	0.023	0.19
7/14/09	Quincy	UR001	11:27	CM	4x4 box	50-100	sulfur odor	clear	none	None	1741	5654	ND	NA	0.033	0.196
7/14/09	Quincy	WollB1	11:27	CM	4x4 box	50-100	sulfur odor	clear	none	None	2190	6932	~0.05	0.25	0.04	0.125
7/21/09	Stoneham	1West	9:20	stone	2x3	50-100	lightly must	clear	none	None	~64880	~2318	~0.28	0.6	0.148	0.117
7/21/09	Stoneham	2Linden	9:35	open stream	na	na	none	light tea	none	None	~7945	~1302	~0.32	0.75	0.142	0.206
7/21/09	Stoneham	Elm1	10:10	open stream	na	40-50	lightly must	med tea	none	None	~51720	~5654	~0.12	0.3	0.083	0.578
7/21/09	Stoneham	Toms	10:30	metal w/asphalt	3'	50	lightly must	clear	none	None	~16070	~5818	~0.43	0.75	0.176	0.204
7/21/09	Stoneham	UR003	10:30	metal w/asphalt	3'	50	lightly must	clear	none	None	~2069	~924	~0.43	0.75	0.189	0.198
7/21/09	Stoneham	Toms	11:30	metal w/asphalt	3'	250-500	strong must	gray	cloudy	s, sticks, pa	~3080	~690	~0.08	0.6	0.169	0.193
7/28/09	Chelsea	Mill2	8:05	CM	~30 inches	15	sharp sewa	clear	none	None	310	12	0.23	0.8	0.126	3.84
7/28/09	Chelsea	IsEnd03A	9:05		open stream	na	odor; slight	ayish/yellow	none	None	9678	388	0.1	0.8	0.054	0.831
7/28/09	Chelsea	IsEnd02	9:25	CM, semi-round	7'		strong petroleum	tea/tan	cloudy	None	5654	122	0.16	0.6	0.068	0.252
7/28/09	Chelsea	IsEnd03	9:26	CM, semi-round	12'		strong petroleum	blue/grayish	cloudy	ome soap su	16740	368	0.09	1.5	0.055	1.76
7/28/09	Chelsea	UR005	9:26	CM, semi-round	12'		strong petroleum	blue/grayish	cloudy	ome soap su	15850	435	0.09	1.5	0.05	1.64
7/28/09	Somerville	MWRA205	11:08	CM	4x4 box		slight sewage o	gray/green	e suspende	None	9678	1211	0.24	1.2	0.154	2.65
8/4/09	Winchester	Russ1	8:00	stone	3'x4' box	na	musty	grayish	ightly cloud	None	147	196	~0.05	0.2	0.025	0.108
8/4/09	Winchester	UR007	8:00	stone	3'x4' box	na	musty	grayish	ightly cloud	None	176	118	ND	0.2	0.028	ND
8/4/09	Woburn	US3	8:50	stone	~16inches	na	none	light tea	ightly cloud	None	587	140	~0.05	ND	0.029	0.14
8/4/09	Woburn	US4	8:55	CM	~24 inches	na	none	light tan	ightly cloud	None	806	222	~0.05	ND	0.026	0.167
8/4/09	Woburn	US5	9:05	open stream		na	none	light tea	clear	None	542	184	ND	ND	0.032	0.133
8/4/09	Woburn	Olym1	9:55	open stream		na	none	light tan	clear	None	2069	205	~0.05	0.2	0.02	0.076
8/11/09	Quincy	Canal1	7:55	concrete	6'x8' box	na	slight musty	clear	none	None	1844	417	~0.05	0.15	0.038	0.22
8/11/09	Quincy	SAG1	8:25	concrete	10x10 box	na	slight musty	brown	very turbid	None	3922	1230	ND	2	0.025	0.4
8/11/09	Quincy	SAG2	8:50	ground seep		3-5	Strong sulfu	clear	none	None	ND	ND	NA	0.7	NA	NA

8/11/09	Quincy	WollB1B	9:40	concrete	3-4'	15	musty	clear	none	None	133	12	ND	2.2	ND	ND
8/11/09	Quincy	WollB1A	9:45	concrete	3-4'	na	musty/sulfu	clear	none	None	437	161	ND	1.5	0.026	0.136
8/11/09	Quincy	UR009	10:25	concrete	4x4 box	30-40	Strong sulfu	mostly clear	none	None	489	363	ND	0.6	0.028	0.076
8/11/09	Quincy	WollB1	10:25	concrete	4x4 box	30-40	Strong sulfu	mostly clear	none	None	626	518	ND	0.7	0.024	ND
8/18/09	Plymouth	Eel1	9:20	open stream		na	none	light tan	clear	None	30	82	ND	ND	ND	ND
8/18/09	Plymouth	Eel2	9:30	open stream		na	none	light tan	clear	None	70	82	ND	ND	ND	ND
8/18/09	Plymouth	UR011	9:30	open stream		na	none	light tan	clear	None	140	82	ND	ND	ND	ND
8/18/09	Plymouth	Eel3	9:40	open stream		na	none	light tan	clear	None	1741	452	ND	ND	ND	0.092
8/18/09	Plymouth	SandRd1	10:00	clay	16	4	none	light tan	clear	None	265	172	ND	~0.1	0.021	ND
8/18/09	Plymouth	SandRd2	11:40	clay	12	2	none	light tan	clear	None	373	61	NA	~0.1	NA	0.088
8/25/09	Boston	Dent285	7:50	concrete	6 feet	50-75	nusty/sewag	None	ightly cloud	None	33000	3683	0.22	0.4	0.133	0.4
8/25/09	Boston	Blueup	8:00	open stream		na	none	tan	clear	None	226	64	~0.05	~0.1	0.028	ND
8/25/09	Boston	Mother	9:05	open stream		na	none	light tea	clear	None	129	56	0.06	ND	0.046	ND
8/25/09	Boston	NR204	10:00	concrete	3 feet	15	g sewage/la	None	ightly cloud	hite/gray pa	>241960	>48392	8.7	>3	0.975	20.1
8/25/09	Boston	NR162	11:00	concrete	36 inches	3	ht sewage c	None	clear	None	198630	5226	0.89	3	0.6	13.2
8/25/09	Boston	UR013	11:00	concrete	36 inches	3	ht sewage c	None	clear	None	241960	5510	0.92	2.75	0.635	12.4
8/25/09	Boston	NR160	12:00	concrete	2'	3	musty	None	clear	None	1741	149	~0.05	0.25	0.023	0.598
8/25/09	Boston	Esp01	12:02	open stream		na	none	tea	clear	None	241	58	0.07	~0.1	0.03	0.1
9/1/09	Woburn	Halls2	7:35	open stream		na	None	light brown	clear	None	2595	602	ND	~0.1	0.029	0.218
9/1/09	Woburn	DRR1	7:45	open stream		na	None	light brown	clear	None	4185	12976	ND	0.25	0.035	8.99
9/1/09	Woburn	Mys08	9:30	open stream		na	None	light brown	clear	None	363	150	ND	0.25	0.027	14.3
9/1/09	Woburn	UR015	9:30	open stream		na	None	light brown	clear	None	422	148	ND	NA	0.021	14
9/1/09	Woburn	Mys78	10:15	open stream		na	light oil sme	None	clear	None	5199	10344	ND	0.25	0.031	10.1
9/1/09	Woburn	Mys09	10:45	open stream		na	None	None	clear	None	205	82	ND	~0.1	ND	16
9/8/09	Watertown	SawB01	8:45	open stream		50-100	g petroleum	Orange	cloudy	some suds	1642	104	~0.05	0.2	0.032	0.308
9/8/09	Watertown	SawB01b	9:05	cast iron	12"	5	ht sewage c	None	clear	None	~4	ND	NA	0.25	NA	NA
9/8/09	Newton	Hyde01	9:45	concrete	4x8 box	100	None	None	clear	None	5654	1424	ND	0.2	ND	ND
9/8/09	Newton	Laund01	10:25	concrete	6x8 box	na	None	light tea	clear	some suds	1462	492	ND	~0.1	ND	ND
9/8/09	Newton	UR016	10:25	concrete	6x8 box	na	None	light tea	clear	some suds	1954	544	~0.05	~0.1	ND	ND
9/8/09	Newton	Chee01	11:11	open stream		50-70	None	None	clear	None	992	~38	ND	0.22	ND	ND
9/8/09	Waltham	Beav01	11:35	concrete	3x10 box	na	None	None	ightly cloud	some suds	713	292	~0.05	0.2	0.023	0.162
9/8/09	Lexington	WF01	12:26	concrete	3'	20-30	slight musty	None	clear	None	44	40	~0.05	ND	0.03	0.266
9/8/09	Lexington	Vine01	13:00	concrete	3x3 box	na	Musty	rust/brown	cloudy	None	29090	2752	0.08	NA	0.19	1.12
9/15/09	Lowell	Beaver1a	7:37	concrete	4'	15	None	None	clear	None	8	75	ND	0.25	ND	ND
9/15/09	Lowell	Beaver1	7:40	open stream		na	None	light tea	clear	None	117	63	NA	~0.1	NA	NA
9/15/09	Lowell	Suffolk1	8:40	open stream		na	None	light tea	clear	None	208	41	ND	ND	0.024	ND
9/15/09	Lowell	Central1	9:15	open stream		na	None	None	clear	some suds	58	~10	ND	~0.1	0.024	0.088
9/15/09	Lowell	RMB1	10:10	open stream		na	None	light tea	clear	some suds	1844	281	~0.05	0.25	0.022	ND
9/15/09	Lowell	UR017	10:10	open stream		na	None	light tea	clear	some suds	2069	465	~0.05	0.25	0.046	ND
9/15/09	Lowell	NewH1	10:50	open stream		na	None	light tea	clear	some suds	164	275	NA	0.2	NA	NA
9/15/09	Lowell	BlackB1	11:25	open stream		na	None	None	murky	None	154	798	0.07	0.25	0.028	0.443
9/15/09	Lowell	BlackB2	12:00	open stream		na	None	None	clear	None	182	97	NA	0.2	NA	NA
9/22/09	Reading	RRR1	8:10	CM	4x4 box	na	None	None	clear	None	21	20	ND	0.25	0.022	ND
9/22/09	Andover	RogerD	9:00	concrete	5'	na	musty odor	rk tea staini	clear	some suds	442	657	~0.05	~0.1	0.67	0.098
9/22/09	Andover	Rogerup	9:32	open stream		na	no odor	med tea	clear	some suds	44	6488	~0.05	0.2	1.31	ND
9/22/09	Andover	Huss01	10:20	concrete	10' x 5'	na	None	light tea	clear	some suds	2319	987	ND	0.2	0.036	0.079
9/22/09	Andover	Huss02	10:50	open stream		na	None	light tea	clear	None	39	ND	NA	ND	NA	NA
9/22/09	Lawrence	SLE3	11:30	concrete outfall	3'	na	slight musty	None	Clear	None	205	445	ND	~0.1	ND	ND
9/22/09	Lawrence	UR018	11:30	concrete outfall	3'	na	slight musty	None	Clear	None	279	249	ND	~0.1	ND	ND
9/22/09	Lawrence	SPR05	12:30	concrete	18"	10	slight musty	None	Clear	Yes, paper	29870	19863	~0.05	0.25	0.05	7.02
9/22/09	Lowell	RMB1	13:20	open stream		na	None	light tea	Clear	None	1642	199	ND	~0.1	0.031	0.138
9/29/09	Milton	CunPk02	8:30	concrete	18"	2	mild sewag	None	Mild	Leave, bubb	1954	6131	0.06	0.18	0.041	0.291
9/29/09	Milton	CunPk03	9:30	open stream		na	None	None	Clear	Foam	1164	2098	0.06	~0.1	0.038	0.206
9/29/09	Norwood	PB02A	10:45		18"	5	None	None	Clear	None	68	98	ND	0.15	ND	0.1
9/29/09	Norwood	PB02B	11:00	open stream		na	None	light brown	Clear	None	1379	1396	~0.05	~0.1	0.875	0.139
9/29/09	Norwood	PB02	12:00		18"	3	Septic	Cloudy	very turbid	None	68670	6131	0.07	0.25	0.05	0.695
9/29/09	Norwood	UR019	12:00		18"	3	Septic	Cloudy	very turbid	None	48840	5475	0.09	0.25	0.061	0.556
4/21/10	Arlington	91Mys	8:00	Open stream	na	na	none	heavy tea	cloudy	some suds	152	41	NA	~0.1	NA	NA
4/21/10	Arlington	MillB	8:10	Open stream	na	na	strong must	heavy tea	fairly clear	suds	395	52	0.06	~0.1	NA	0.124
4/21/10	Arlington	MBike	8:50	Stone (instream)	10'X8'	stream	moderate	med tea	clear	none	268	233	NA	~0.1	NA	NA
4/21/10	Arlington	AHS	9:05	Open stream	na	stream	none	light tea	clear	some	666	213	0.06	ND	NA	ND

4/21/10	Arlington	UR020	9:05	Open stream	na	stream	none	light tea	clear	some	1549	173	0.06	ND	NA	ND
4/21/10	Arlington	Grove01	9:40	Stone (instream)	6'	stream	natural gas	light tea	fairly clear	some suds	4480	529	0.06	~0.1	NA	0.079
4/21/10	Arlington	GroveS	9:45	Concrete	40"	10-15	none	none	clear	none	744	7701	NA	0.2	NA	NA
4/21/10	Arlington	Quinn2	10:30	Concrete	12"	19.0040741	fresh	none	clear	none	ND	ND	0.05	0.3	NA	ND
4/21/10	Arlington	RyMill	11:05	Concrete	2'X3'	4.00407407	fresh	none	clear	none	1302	404	0.16	0.3	NA	0.677
4/21/10	Arlington	RyMill2	11:10	hole in wall	na	2.00407407	none	none	clear	none	ND	ND	NA	0.2	NA	NA
4/21/10	Arlington	RyderE	11:20	Concrete	30"	29.0040741	none	none	clear	none	271	336	0.16	0.25	NA	0.13
4/21/10	Arlington	RyderW	11:30	Concrete	36"	20-30	none	none	clear	none	30	20	ND	ND	NA	ND
4/21/10	Arlington	30Park	12:25	Open stream	na	stream	none	light tea	clear	none	1741	8164	0.08	ND	NA	ND
4/28/10	Winchester	ABR006	8:30	Open stream	na	stream	none	none	fairly clear	e leaves/bran	899	199	0.09	0.2	NA	0.528
4/28/10	Winchester	Wfield	8:50	Open stream	na	stream	none	none	lightly turbi	some	839	317	NA	0.22	NA	NA
4/28/10	Winchester	Vern01	9:15	Open stream	na	stream	none	none	lightly turbi	e leaves/bran	643	108	NA	0.22	NA	NA
4/28/10	Winchester	Wedge01	9:32	Open stream	na	stream	none	none	lightly turbi	some	58	10	NA	~0.1	NA	NA
4/28/10	Winchester	Skill01	9:50	Concrete (instrea	3'	stream	none	blueish/gray	turbid	some	913	148	0.1	0.25	NA	0.844
4/28/10	Winchester	UR021	9:50	Concrete (instrea	3'	stream	none	blueish/gray	turbid	some	1642	132	0.1	0.25	NA	0.837
4/28/10	Winchester	Skill02	9:55	Concrete	12"	5-10	none	none	fairly clear	none	75	30	NA	~0.1	NA	NA
4/28/10	Winchester	Swan1	10:45	Open stream	na	stream	none	light tea	lightly turbi	some suds	740	171	0.08	0.25	NA	0.887
4/28/10	Winchester	Russ1	11:05	Stone (instream)	4'X4'	stream	none	light tea	clear	some suds	384	359	0.07	0.25	NA	0.083
4/28/10	Woburn	OF118	11:35	Concrete	30"	50	none	none	clear	some suds	154	52	0.07	0.3	NA	0.381
4/28/10	Woburn	OF159A	12:04	Cor.Metal	18"	5-10	none	none	clear	none	268	156	NA	0.3	NA	NA
4/28/10	Woburn	OF159	12:05	Cor.Metal	24-30"	20-30	light sewag	none	clear	none	318	109	0.1	0.25	NA	1.38
4/28/10	Woburn	OF161	12:15	Cor. Metal	5'	stream	slight musty	none	lightly turbi	some	1642	148	ND	0.3	NA	0.153
5/5/10	Arlington	Grove01a	8:10	Stone (instream)	6'	stream	natural gas	light tea	fairly clear	some suds	2747	520	0.07	~0.1	NA	0.101
5/5/10	Arlington	GroveS	8:10	Concrete	40"	10-15	slight gas	none	clear	none	202	15531	NA	0.22	NA	NA
5/5/10	Arlington	UR022	8:10	Stone (instream)	6'	stream	natural gas	light tea	fairly clear	some suds	2069	583	0.07	~0.1	NA	0.218
5/5/10	Arlington	Robin	8:45	loose joint grey t	24"	10-15	ght natural g	none	clear	none	9678	295	NA	0.4	NA	NA
5/5/10	Arlington	Brattle	9:10	Open stream	na	stream	none	tea	very turbid	some	1462	776	NA	~0.1	NA	NA
5/5/10	Arlington	RyMill	9:25	Concrete	2'X3'	3	emical/mus	none	fairly clear	none	2190	301	NA	~0.1	NA	NA
5/5/10	Arlington	RyderE	9:32	Concrete	30"	29.0040741	none	none	clear	none	49	30	NA	0.2	NA	NA
5/5/10	Arlington	Ryder01	9:35	Stone (instream)	6'	stream	none	light tea	fairly clear	some suds	1954	350	0.07	~0.1	NA	0.135
5/5/10	Arlington	30Park	10:10	Open stream	na	stream	none	light tea	clear	none	1302	350	0.07	ND	NA	0.164
5/5/10	Arlington	1395MA	10:30	Open stream	na	stream	none	light tea	lightly turbi	none	689	323	0.06	ND	NA	0.133
5/5/10	Arlington	Drake01	10:55	Open stream	na	stream	none	med tea	lightly turbi	none	2318	960	0.1	ND	NA	0.257
5/5/10	Arlington	ArlRes	11:05	Concrete	3'	stream	none	light tea	clear	some suds	183	74	NA	ND	NA	NA
5/5/10	Lexington	WF01	11:25	Stone (instream)	4'X4'	stream	none	none	cloudy	some scum	16	52	0.07	ND	NA	ND
5/5/10	Lexington	Vine01	11:55	Open stream	na	stream	none	heavy tea	lightly turbi	some leaves	1302	393	NA	~0.1	NA	NA
5/12/10	Woburn	Halls2	8:00	Open stream	na	stream	none	light brown	na	none	212	109	NA	~0.1	NA	NA
5/12/10	Woburn	DRR1	8:15	Open stream	na	stream	none	light brown	clear	none	182	448	NA	~0.1	NA	NA
5/12/10	Woburn	Mys07	9:05	Open stream	na	stream	nulch/sewag	dark brown	very murky	algae	131	145	NA	~0.1	NA	NA
5/12/10	Woburn	Mys08	9:10	Open stream	na	stream	t mulch/sew	light brown	clear	none	92	ND	NA	ND	NA	NA
5/12/10	Woburn	Torr01	10:00	Open stream	na	stream	none	light brown	clear	none	223	120	NA	0.25	NA	NA
5/12/10	Woburn	UR023	10:00	Open stream	na	stream	none	light brown	clear	none	182	52	NA	0.25	NA	NA
5/12/10	Woburn	Dart1	10:30	Open stream	na	stream	none	dark brown	clear	some suds	64	31	NA	0.2	NA	NA
5/12/10	Woburn	School01	11:05	Open stream	na	stream	none	dark brown	clear	none	109	20	NA	0.25	NA	NA
5/19/10	Quincy	FBP02	8:15	Open stream	na	stream	none	none	clear	none	4813	3873	NA	0.25	NA	NA
5/19/10	Quincy	UR024	8:15	Open stream	na	stream	none	none	clear	none	3922	3654	NA	0.3	NA	NA
5/19/10	Quincy	FBP03	8:55	Open stream	na	stream	septic smel	light brown	nild	none	5654	5172	NA	0.4	NA	NA
5/19/10	Quincy	Broad1	9:25			stream	none	none	clear	none	3466	2755	NA	2	NA	NA
5/19/10	Quincy	Sag1A	10:15		4ft	slight septic sm		light brown	clear	none	13340	2098	NA	1.7	NA	NA
5/19/10	Quincy	WollB1A	10:40	CM	3'x3' box	0.5L/min	sewage	none	clear	none	4480	3282	NA	0.5	NA	NA
5/19/10	Quincy	WollB1	11:00	CM	4x4 box	1	sewage	none	clear	none	2747	6131	NA	0.75	NA	NA
5/19/10	Quincy	Sag1B	11:45		5x6ft	slowly	sewage	light brown	mild	none	20980	3654	NA	0.5	NA	NA
5/26/10	Belmont	UR025	9:10	Open stream	na	stream	g musty/se	med tea	lightly turbi	none	29090	7701	NA	0.2	NA	NA
5/26/10	Belmont	WEB013	9:10	Open stream	na	stream	g musty/se	med tea	lightly turbi	none	11620	6488	NA	0.2	NA	NA
5/26/10	Arlington	ARL043	9:58	Concrete	18-24	5	none	none	clear	none	79	109	NA	~0.1	NA	NA

5/26/10	Arlington	ARL137	10:25	Clay	16	20-30	none	none	clear	none	12	10	NA	ND	NA	NA
5/26/10	Arlington	ARL207	11:07	Seep	na	1-2	brassica	na	na	na	25	20	NA	~0.1	NA	NA
5/26/10	Arlington	Drake01	11:25	Open stream	na	stream	none	med tea	lightly turbi	none	1230	663	NA	~0.1	NA	NA
5/26/10	Arlington	ArlRes	11:30	Open stream	na	stream	none	med tea	lightly turbi	none	479	548	NA	~0.1	NA	NA
5/26/10	Lexington	Bow01A	12:00	Concrete	12	<1	none	none	clear	none	12	ND	NA	0.2	NA	NA
5/26/10	Lexington	Bow01	12:05	Open stream	na	stream	none	med tea	lightly turbi	none	643	809	NA	~0.1	NA	NA
5/26/10	Lexington	Fott01	12:35	Open stream	na	stream	none	med tea	lightly turbi	none	124	199	NA	ND	NA	NA
5/26/10	Lexington	GMS01	12:55	Open stream	na	stream	none	heavy tea	very murky	thick film	72	52	NA	0.2	NA	NA
6/2/10	Revere	UR026	8:01	Concrete	24	NA	none	brown	turbid	none	20640	9606	NA	0.4	NA	NA
6/2/10	Revere	WashN01	8:01	Concrete	24	NA	none	brown	turbid	none	17250	16070	NA	0.3	NA	NA
6/2/10	Revere	Sales01	8:10	Open stream	na	stream	none	light brown	fairly clear	trash	4813	2359	NA	0.4	NA	NA
6/2/10	Revere	Green01	8:40	Open stream	na	stream	musty	grey	turbid	trash	>241960	31300	NA	0.75	NA	NA
6/2/10	Boston	29M049	9:10	Concrete	3ft	30-40	none	none	lightly turbi	none	714	3873	NA	3	NA	NA
6/2/10	Boston	25L058	9:50	Concrete	6x6ft box	na	musty	grey	turbid	trash	2069	3448	NA	2	NA	NA
6/2/10	Boston	Bos017	10:20	Concrete	72"	na	none	none	cloudy	particulates	612	203	NA	2	NA	NA
6/2/10	Boston	29J212	10:22	Concrete	60"	na	none	none	cloudy	particulates	568	52	NA	2	NA	NA
6/2/10	Chelsea	Mill2A	11:20	Concrete	24	<5	usty/chemic	none	clear	trash	58	175	NA	0.8	NA	NA
6/10/10	Lawrence	SLE3	7:25	concrete outfall	3'	NA	strong must	hite/tan/gra	ightly cloud	ilamentous	1954	2359	NA	1	NA	NA
6/10/10	Lawrence	UR027	7:25	concrete outfall	3'	NA	strong must	none	ightly cloud	ilamentous	1741	1314	NA	0.2	NA	NA
6/10/10	Lawrence	SLE3	8:25	concrete outfall	3'	NA	strong must	none	ightly cloud	ilamentous	899	4884	NA	0.2	NA	NA
6/10/10	Lawrence	SLE3	9:00	concrete outfall	3'	NA	strong must	none	ightly cloud	ilamentous	806	2014	NA	0.5	NA	NA
6/10/10	Lawrence	SPR05	9:35	concrete	18"	10	none	none	very clear	none	NA	NA	NA	0.5	NA	NA
6/16/10	Concord, M	PRIS01	11:00	Concrete	2ft	2	sewage	none	clear	none	16160	10462	NA	0.8	NA	NA
6/30/10	Falmouth	MBR001	8:52								25	ND	NA	0.5	NA	NA
6/30/10	Falmouth	6IN001	9:00								152	669	NA	0.75	NA	NA
6/30/10	Falmouth	12IN01	9:05								ND	ND	NA	0.75	NA	NA
6/30/10	Falmouth	COIL01	9:20								ND	10	NA	0.2	NA	NA
6/30/10	Falmouth	24IN01	9:30								25	ND	NA	0.25	NA	NA
6/30/10	Falmouth	INF01	9:30								461100	290900	NA	1	NA	NA
6/30/10	Falmouth	12INWA	9:40								ND	ND	NA	0.75	NA	NA
6/30/10	Falmouth	STE01	9:45								547500	186000	NA	0.75	NA	NA
6/30/10	Falmouth	UR099	9:45								686700	119800	NA	0.75	NA	NA
7/7/10	Manchester	Dunbar	8:20	Stone culvert	3x4	150	ng petroleu	oil sheen	turbid	rash & debri	1089	422	NA	ND	NA	NA
7/7/10	Manchester	Granite	9:00	concrete	4ft	35	rong sewag	none	clear	none	125	110	NA	0.5	NA	NA
7/7/10	Manchester	047N	9:40	concrete	4ft	15-20	rong sewag	none	ightly cloud	none	4	ND	NA	0.25	NA	NA
7/7/10	Manchester	047	10:00	concrete	4ft	NA	e, musty (s	med tea	cloudy	some	64	52	NA	~0.1	NA	NA
7/7/10	Concord, NH	Mer4120	10:45	brick	48" semi-circle	NA	none	none	ightly cloud	rash & debri	218	399	NA	1	NA	NA
7/7/10	Concord, NH	Mer4120a	10:45	concrete	36"	10	ilightly mus	none	ightly cloud	e leaves & d	25	ND	NA	0.5	NA	NA
7/7/10	Concord, NH	UR028	10:45	brick	48" semi-circle	NA	none	none	ightly cloud	rash & debri	263	448	NA	1	NA	NA
7/7/10	Concord, NH	Clinton	11:55	Open stream	NA	low	none	none	clear	none	806	341	NA	0.75	NA	NA
7/7/10	Concord, NH	Pleasant	12:15	Open stream	NA	low	none	none	clear	none	1089	1722	NA	0.25	NA	NA
7/14/10	Boston	29J212	7:17	Concrete	60"	na	none	none	clear	none	3683	199	NA	3	NA	NA
7/14/10	Boston	Bos017	7:17	Concrete	72"	na	musty	none	ightly cloud	some	129970	2489	NA	2.5	NA	NA
7/14/10	Boston	UR029	7:17	Concrete	60"	na	none	none	clear	none	3922	256	NA	3	NA	NA
7/14/10	Swampscot	StaceyN	8:20	CM	4'x8'	100-150	Cl2 strong	none	clear	rubber glove	109	161	NA	0.2	NA	NA
7/14/10	Lynn	StaceyS	8:20	CM	4'x8'	300-400	musty	none	cloudy	me suds/tra	38730	68670	NA	0.2	NA	NA
7/14/10	Salem	Palmer1	9:05	clay	18-24	15-20	slight musty	none	clear	none	13540	17329	NA	3	NA	NA
7/14/10	Beverly	Lynch1	9:35	concrete	12"	25	none	none	clear	none	689	1178	NA	0.2	NA	NA
7/14/10	Beverly	Brac01	10:04	concrete/stone	4'box	na	Sulfur	none	clear	some suds	2452	1725	NA	2	NA	NA
7/14/10	Beverly	Brac02	10:31	Open stream	na	na	none	med tea	turbid	some	2595	3130	NA	ND	NA	NA
7/14/10	Beverly	Lynch02	10:50	plastic	8"	~4	none	none	clear	none	2069	4352	NA	2	NA	NA
7/21/10	Winchester	Swan01	7:25	Open stream	na	na	None	grey	very cloudy	some suds	452	305	NA	~0.1	NA	NA
7/21/10	Winchester	Wash01	7:50	Open stream	na	na	None	grey	very cloudy	some suds	484	512	NA	~0.1	NA	NA
7/21/10	Winchester	Wash02	7:55	Concrete	24"	na	None	grey	very cloudy	some suds	857	318	NA	0.2	NA	NA
7/21/10	Woburn	Mer01up	8:30	Open stream	na	na	None	greyish	very cloudy	none	448	199	NA	0.2	NA	NA

7/21/10	Woburn	Sweet	8:35	Open stream	na	na	none	none	clear	some suds	518	148	NA	0.22	NA	NA
7/21/10	Woburn	Salem	9:25	Open stream	na	na	none	greyish	very cloudy	some	996	301	NA	0.15	NA	NA
7/21/10	Woburn	Mys01	9:56	open stream	na	na	none	bluish	ightly cloud	rash & debri	238	110	NA	0.2	NA	NA
7/21/10	Woburn	Mys01b	10:00	Concrete	16-18"	10-15	none	none	clear	none	4	20	NA	0.3	NA	NA
7/21/10	Woburn	Mys01c	10:10	plastic	4"	1/2	none	none	cloudy	none	ND (4)	ND (10)	NA	ND	NA	NA
7/21/10	Woburn	Halls2	10:55	open stream	na	na	none	none	clear	none	2190	816	NA	ND	NA	NA
7/21/10	Woburn	DRR1	11:00	Open stream	na	na	none	grey	cloudy	none	1549	288	NA	~0.1	NA	NA
7/21/10	Woburn	UR030	11:00	Open stream	na	na	none	grey	cloudy	none	744	253	NA	~0.1	NA	NA
7/28/10	Boston	29J212	7:15	Concrete	60"	na	lightly must	none	clear	none	890	ND	NA	3	NA	NA
7/28/10	Boston	Bos017	7:16	Concrete	72"	na	lightly must	none	clear	some	120330	2613	NA	3	NA	NA
7/28/10	Dorchester	CantB	8:28	Open stream	na	na	na	grey./green	lightly coud	rash & debri	169	86	NA	0.3	NA	NA
7/28/10	Dorchester	UR031	8:28	Open stream	na	na	na	grey./green	lightly coud	rash & debri	146	51	NA	0.3	NA	NA
7/28/10	Boston	15F288	9:02	Brick	5'	~10	sharp musty	none	clear	none	205	109	NA	0.2	NA	NA
7/28/10	Boston	Mudd1	9:55	stone	bridge	NA	none	na	cloudy	none	2318	703	NA	0.15	NA	NA
7/28/10	Brookline	VillB	10:40	Stone	5'	NA	musty	green	cloudy	ves &sedim	258	52	NA	~0.1	NA	NA
7/28/10	Boston	OF233	11:00	Concrete	20-30"		slightly must	ght oil shee	clear	e trash & de	198630	24196	NA	ND	NA	NA
7/28/10	Boston	Jpond	11:25	spring bubbling up from ground			none	none	none	none	43	ND	NA	ND	NA	NA
8/4/10	Lawrence	SPR05	7:35	concrete	18"	~5 - 10	clean smell	none	none	none	30	10	NA	0.2	NA	NA
8/4/10	Lawrence	SPRLGH	7:40	Open stream	NA	NA	none	none	clear	none	1164	1529	NA	~0.1	NA	NA
8/4/10	Lawrence	Jackson	8:25	Open stream	NA	NA	none	light tea	some	ash and deb	606	512	NA	~0.1	NA	NA
8/4/10	Lawrence	Willow	9:00	Open stream	NA	NA	none	med tea	none	ash and deb	325	158	NA	~0.1	NA	NA
8/4/10	Lawrence	SLE3	9:30	concrete	3'		sharp punge	none	clear	nks of bact	1230	275	NA	~0.1	NA	NA
8/4/10	Lawrence	Shaw01	9:50	Open stream	NA	NA	none	il sheen, slight tea		leaves	208	86	NA	~0.1	NA	NA
8/4/10	Andover	Huss01	10:35	stone box	8-10ft		none	none	clear	surface suds	7945	109	NA	ND	NA	NA
8/4/10	Andover	Huss02	11:00	Open stream	NA	NA	cloudy	ight oil shee	ightly cloud	scum	34	ND (10)	NA	~0.1	NA	NA
8/4/10	Andover	URO32	11:00	Open stream	NA	NA	cloudy	ight oil shee	ightly cloud	scum	8	20	NA	~0.1	NA	NA
8/11/10	Stoneham	100A	7:42	Open stream	NA	NA	ght musty o	light tea	clear	none	22820	323	NA	0.35	NA	NA
8/11/10	Stoneham	1West	8:03	stone	2x3	50-100	moldy mus	light film	clear	surface suds	7945	2613	NA	0.2	NA	NA
8/11/10	Stoneham	2Linden	8:25	open stream	na	na	petroleum	lightly cloud	clear	none	713	285	NA	0.2	NA	NA
8/11/10	Stoneham	2Lincul	8:30	clay	8"	~1 -2	none	none	clear	none	173290	6131	NA	0.2	NA	NA
8/11/10	Stoneham	Elm2	9:00	stone culvert wit	2' x 4'	~30 - 40	musty	none	clear	none	41060	6867	NA	0.2	NA	NA
8/11/10	Stoneham	URO33	9:00	stone culvert wit	2' x 4'	~30 - 40	musty	none	clear	none	41060	4352	NA	0.2	NA	NA
8/11/10	Stoneham	Toms	9:50	metal w/asphalt	3'	~5 -7	phault/ petro	none	nge flocc o	none	212	10	NA	0.15	NA	NA
8/11/10	Woburn	Halls2	10:35	Open stream	NA	low	none	light tea	nsome trash and		1379	717	NA	~0.1	NA	NA
8/11/10	Woburn	Halls3	10:50	concrete	~12	< 1	or a few mir	none	clear	suds	4	ND (10)	NA	0.6	NA	NA
8/11/10	Stoneham	31Sixth	11:21	Concrete	18"		none	none	clear	light film or	183	86	NA	0.3	NA	NA
8/11/10	Stoneham	2ndRd	11:50	Open stream	NA	NA	none	med tea	clear	none	430	226	NA	~0.1	NA	NA
8/18/10	Warwick, RI	CBW	8:10	Beach	NA	outgoing tide	none	none	clear	none	28 fecal	ND	NA	3	NA	NA
8/18/10	Warwick, RI	UNKBK	8:22	Open stream	NA	~ 0.3cfs	none	none	ightly cloud	none	504 fecal	4352	NA	2	NA	NA
8/18/10	Warwick, RI	MC01	8:25	Open stream	NA		none	none	can't see bo	none	484 fecal	311	NA	2	NA	NA
8/18/10	Warwick, RI	BB08	8:50	Open stream	NA		none	none	cloudy	none	1340 fecal	1014	NA	~0.1	NA	NA
8/18/10	Warwick, RI	BB08P	8:57	concrete	~16	~ 1	none	none	clear	none	1610 fecal	135	NA	1	NA	NA
8/18/10	Warwick, RI	LK04	9:20	Open stream	NA		none	none	clear	and some o	1710 fecal	906	NA	~0.1	NA	NA
8/18/10	Warwick, RI	BB07	9:30	Open stream	NA		none	none	clear	none	2870 fecal	1046	NA	0.2	NA	NA
8/18/10	Warwick, RI	WR02	9:45	double culvert			none	none	clear	e oil on sur	300 fecal	148	NA	0.15	NA	NA
8/18/10	Warwick, RI	LK02	10:55	Open stream	NA	NA	none	none	clear	some trash	7100 fecal	1374	NA	0.25	NA	NA
8/18/10	Warwick, RI	Emerson	11:11	perforated alumi	2'	~1 -2	none	none	clear	none	580 fecal	31	NA	ND	NA	NA
8/18/10	Warwick, RI	MB01	11:30	Stone	2'x2'box	~50	none	none	clear	none	484 fecal	161	NA	ND	NA	NA
8/18/10	Warwick, RI	SweetF	11:45	Concrete	~16	~15 - 20	ong musty o	grey	cloudy	d grayish gro	ND fecal	ND	NA	0.2	NA	NA
8/18/10	Warwick, RI	URO34	11:45	Concrete	~16	~15 - 21	ong musty o	grey	cloudy	d grayish gro	ND fecal	62	NA	0.2	NA	NA
8/25/10	Laconia, NH	Beach RT	8:30	Beach	NA	NA	none	none	clear	none	21	ND	NA	0.2	NA	NA
8/25/10	Laconia, NH	996-F	8:50	Concrete	16	~10	none	none	clear	none	353	52	NA	0.4	NA	NA
8/25/10	Laconia, NH	Beach RT	10:30	Beach	NA	NA	none	none	clear	none	16	ND	NA	0.25	NA	NA
8/25/10	Laconia, NH	GovB	10:40	Swale	NA	stagnant	none	light orange	ightly cloud	some scum	192	98	NA	0.2	NA	NA
8/25/10	Laconia, NH	GovB01	11:00	Stone w/metal lining		~30	none	none	clear	none	857	1223	NA	0.22	NA	NA

8/25/10	Laconia, NH	996-F	11:11	Concrete	16	~20	none	none	clear	some suds	6932	19863	NA	0.2	NA	NA
8/25/10	Laconia, NH	UR035	11:11	Concrete	16	~20	none	none	clear	some suds	6978	17329	NA	0.2	NA	NA
8/25/10	Laconia, NH	Swale	11:40	Concrete	16-18	~10	none	none	clear	none	17200	26030	NA	0.2	NA	NA
8/25/10	Laconia, NH	CBAdmin	11:50	Concrete	18	~50	ght musty o	none	clear	none	621	1553	NA	0.2	NA	NA
8/25/10	Concord, NH	Mer4120	12:45	brick	48" semi-circle	NA	musty	grey	cloudy	e suds & de	38730	51720	NA	0.25	NA	NA
9/1/10	Revere	Green01	8:10	Open stream	NA	NA	musty	none	clear	none	27550	6867	NA	0.25	NA	NA
9/1/10	Chelsea	Mill2A	8:30	Concrete	24	<5	usty/chemic	none	clear	trash	8	ND	NA	0.6	NA	NA
9/1/10	Chelsea	Mill2	8:55	Concrete	~30 inches	15	sharp sewa	clear	none	None	282	41	NA	0.5	NA	NA
9/1/10	Revere	Amelia	9:30	Open stream	NA	NA	none	light tea	suspended	some suds	3466	1430	NA	0.6	NA	NA
9/1/10	Revere	Sargent	9:55	Concrete	36	NA	slight musty	none	clear	none	875	201	NA	0.2	NA	NA
9/1/10	Marblehead	DLaunch	11:10	Concrete	4ft	40	none	none	clear	none	31300	2481	NA	0.75	NA	NA
9/1/10	Marblehead	UR036	11:10	Concrete	4ft	40	none	none	clear	none	30760	3076	NA	0.75	NA	NA
9/1/10	Marblehead	Mneck02	11:35	Concrete	24	5	none	nt green/yel	clear	ome fine suc	81640	120330	NA	0.2	NA	NA
9/1/10	Marblehead	GO01	12:00	Concrete	36in	50	None	None	Clear	None	310	145	NA	0.2	NA	NA
9/1/10	Marblehead	StramB	12:30	Open water	NA	NA	none	none	clear	None	211	ND	NA	2	NA	NA
10/5/10	Watertown	SawB01	8:15	Open stream	na	na	none	med tea	clear	e leaves & d	899	156	NA	0.2	NA	NA
10/5/10	Watertown	UR037	8:15	Open stream	na	na	none	med tea	clear	e leaves & d	890	122	NA	0.2	NA	NA
10/5/10	Watertown	ARLEast	8:35	Open stream	na	na	none	none	clear	none	7946	823	NA	0.25	NA	NA
10/5/10	Watertown	ARL01	8:40	Concrete	4'x4' box	na	none	none	clear	none	9678	1014	NA	NA	NA	NA
10/5/10	Watertown	ARL02	8:42	Concrete	4'x4' box	na	none	none	clear	none	9678	738	NA	NA	NA	NA
10/5/10	Watertown	ARL03	8:45	Concrete	5'x4' box	na	none	none	clear	none	3080	173	NA	NA	NA	NA
10/5/10	Watertown	Wat13	9:20	Concrete	16"	1	none	none	clear	none	92080	2142	NA	0.25	NA	NA
10/5/10	Watertown	Wat12	9:30	Concrete	36"	na	none	none	clear	none	111990	14136	NA	0.6	NA	NA
10/5/10	Watertown	Wat11	9:40	Concrete	4'x3' box	na	none	med tea	turbid	none	19350	1723	NA	0.3	NA	NA
10/5/10	Watertown	LB01	10:35	Concrete	10'x7'box	100	none	none	clear	none	6212	583	NA	0.2	NA	NA
10/5/10	Watertown	Wat5	11:07	Concrete	4'	1	none	none	clear	none	64	20	NA	0.25	NA	NA
10/5/10	Watertown	Wat6	11:11	Concrete	5'	na	none	none	clear	none	510	122	NA	0.25	NA	NA
10/13/10	Marblehead	DLaunch	8:15	Concrete	4ft	40	none	none	clear	none	1376	860	NA	2	NA	NA
10/13/10	Marblehead	UR038	8:15	Concrete	4ft	40	none	none	clear	none	871	723	NA	2	NA	NA
10/13/10	Marblehead	MH19	8:38	stormdrain	na	~20	ong musty o	none	clear	none	TNTC	24196	NA	0.5	NA	NA
10/13/10	Marblehead	MH32	9:10	stormdrain	na	~15	none	none	clear	none	118	10	NA	~0.1	NA	NA
10/13/10	Marblehead	MH48	9:30	stormdrain	na	~15	lightly must	none	clear	none	8	ND	NA	~0.1	NA	NA
10/13/10	Marblehead	MH29A	9:55	plastic stormdrai	18-24	~10	none	none	clear	none	689	41	NA	~0.1	NA	NA
10/13/10	Marblehead	MH2336	10:30	stormdrain	na	na	none	none	clear	e small white	5654	2489	NA	0.25	NA	NA
10/13/10	Marblehead	MH2203	10:55	stormdrain	na	~15	musty	none	clear	none	5654	5475	NA	0.3	NA	NA
10/13/10	Marblehead	MHWinslow	11:11	stormdrain	na	na	musty	lightly yello	clear	none	2452	118	NA	0.4	NA	NA
10/13/10	Marblehead	MHWinslowA	11:28	stormdrain	18"	~5-10	resh smellin	none	clear	none	43	98	NA	0.2	NA	NA
10/27/10	Quincy	WollB1	8:05	CM	4x4 box	50	musty	none	clear	none	147	197	NA	1.25	NA	NA
10/27/10	Quincy	WollB1A	8:10	CM	3'x3' box	30-40	musty/sulfu	none	ightly cloud	oily film	192	121	NA	2	NA	NA
10/27/10	Quincy	WollB1B	8:18	concrete	3-4'	30-40	musty/sulfu	none	ightly cloud	some suds	58	20	NA	2.5	NA	NA
10/27/10	Dorchester	Ten1	8:55	Pipe Mat.	24-30	na	none	Tan/brown	very turbid	none	132	20	NA	1.5	NA	NA
10/27/10	Boston	10L094	9:20	concrete	(2) 6'x6'	na	sewage	grey	cloudy	none	4813	14136	NA	0.6	NA	NA
10/27/10	Boston	UR039	9:20	concrete	(2) 6'x6'	na	sewage	grey	cloudy	none	41060	9208	NA	0.8	NA	NA
10/27/10	Boston	10L094A	9:25	metal	24"	5	musty	grey	cloudy	none	34480	14136	NA	1.5	NA	NA
10/27/10	Quincy	Sag1A	10:15	open stream	na	na	slight musty	rk/med brov	very turbid	some suds	5630	2909	NA	0.75	NA	NA
10/27/10	Quincy	SagA2	10:20	seep	12	1	none	none	clear	none	ND	ND	NA	ND	NA	NA
10/27/10	Quincy	Sag1B	10:30	concrete	6'x6'	na	none	brown	silty/turbid	none	4480	2851	NA	0.5	NA	NA
10/27/10	Quincy	Sag1C	10:58	metal	30"	na	natural gas	light brown	clear	none	2452	2723	NA	0.6	NA	NA
10/27/10	Quincy	Bay1	11:40	Seep/pool	NA	NA	sewage	rk brown/gr	cloudy	none	173290	365400	NA	NA	NA	NA
10/27/10	Quincy	BayBch	11:45	Beach	NA	NA	none	none	cloudy	none	25	ND	NA	3	NA	NA
10/27/10	Quincy	WollBch2	12:30	Beach	NA	NA	none	none	cloudy	none	21	ND	NA	2	NA	NA
10/27/10	Quincy	WollBch1	12:35	Beach	NA	NA	none	none	cloudy	none	113	ND	NA	3	NA	NA

E. coli - color key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, Black < 235 col/100ml
Entero - color key: Red ≥ 1000 col/100ml, Orange ≥ 350 Yellow ≥ 61 col/100ml, Black < 61 col/100ml
NH3 - color key: Red ≥ 6 mg/L, Orange ≥ 3 mg/L, Yellow ≥ 0.5 mg/L, Black < 0.5 mg/L
Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.25 mg/L, Black < 0.25 mg/L *** may give false positive at salinity greater than 1 ppt
Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yellow ≥ 0.02 mg/L, Black < 0.02 mg/L
Fluoride - color key: Red ≥ 2.0 mg/L, Orange ≥ 1.0 mg/L, Yellow ≥ 0.5 mg/L, Black < 0.5 mg/L
Potassium - Red ≥ 20.0 mg/L, Orange ≥ 10 mg/L, Yellow ≥ 6 mg/L, Black < 6 mg/L

REPORTING LIMITS

E. coli = 4 MPN/100mL
Enterococcus = 10 MPN/100mL
Surfactants Alpha = 0.05 mg/L (Except where otherwise noted)
Surfactants Field = 0.1 mg/L
Surfactant DR-850 = 0.02 mg/L
Ammonia (Alpha) = 0.075 mg/L
Ammonia Field = 0.1 mg/L
Ammonia Nessler = 0.2 mg/L
Ammonia DR-850 = 0.08 mg/L
Ammonia Test Strip = 0.1 mg/L

Total Phosphorus = 5 ug/L
CL2 (Total Residual) = 0.02 mg/L
CL2 (Residual Free) = 0.05 mg/L
CL2 Field = 0.02 mg/L
CL2 Test Strip =
Flouride Alpha= 0.20 mg/L
Flouride DR-850 = 0.05 mg/L (Except where otherwise noted)
Potassium = 2.5 mg/L
Potassium Field = 0.2 mg/L
Nitrogen, Nitrate/Nitrite = 0.10 mg/l

ND – not detected above the associated detection limit
NA – not applicable (analyte not tested for at that site at this time)
(~) – data reported as estimate

NH3 (mg/l)				Nitrate/Nitrite	P	PPCP ng/L									Cl2 (mg/l)				Flou
Field	Nessler	DR-850	Test St.	Alpha	EPA (µg/L)	Atenolol	Acetaminophen	Cotinine	1,7 Dimethylxanthine	Caffeine	Azithromycin	Primidone	Urobilin	Carbamazepine	Alpha Free	Alpha Total	Field	Test St.	Alpha
ND	NA	NA	~0	NA	NA	ND (1.0)	11	ND (0.2)	9.1	56	ND (0.2)	ND (2.0)	31	~0.76	ND	ND	0.08	ND	ND
ND	NA	NA	ND	NA	NA	ND (1.0)	34	ND (0.2)	38	2600	ND (0.2)	ND (2.0)	96	2.2	ND	ND	0.05	ND	ND
1.5	NA	NA	1	NA	NA	ND (1.0)	7.7	ND (0.2)	9.3	36	ND (0.2)	8	150	~1.5	ND	ND	0.14	ND	0.53
1.5	NA	NA	NA	NA	NA	ND (1.0)	4.7	ND (0.2)	~4.8	18	~0.4	10	150	1.8	ND	ND	0.03	ND	ND
0.75	NA	NA	NA	NA	NA	ND (1.1)	7.6	ND (0.2)	~6.2	13	1.4	ND (2.2)	74	1.5	ND	ND	ND	ND	1.1
0.5	NA	NA	NA	NA	NA	ND (1.0)	7.7	ND (0.2)	~5.5	15	ND (0.2)	ND (2.0)	86	1.5	ND	ND	0.04	ND	1.1
0.5	NA	NA	0.25	NA	315	~30	1500	~2.9	650	2800	14	ND (2.0)	13000	26	ND	ND	0.04	ND	0.67
0.25	NA	NA	3	NA	155	ND (2.0)	3.8	ND (0.2)	~7.7	19	ND (2.0)	5.9	ND (20.0)	ND (0.2)	ND	ND	0.10	0.1/0.1	0.50
1.5	NA	NA	3	NA	~135	ND (2.0)	3.7	ND (0.2)	72	110	ND (2.0)	3.2	52	ND (0.2)	ND	ND	ND	ND	0.52
>2	NA	NA	6	NA	170	~1.8	21	~46	~67	1600	ND (2.0)	ND (2.0)	1100	9.8	ND	ND	0.05	ND	0.22
ND	NA	NA	ND	NA	11	ND (2.0)	ND (1.0)	ND (0.2)	~7	9.9	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.2)	ND	ND	ND	ND	0.23
ND	NA	NA	ND	NA	12	ND (2.0)	ND (1.0)	ND (0.2)	~3.8	11	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.2)	ND	ND	ND	ND	0.28
0.2	NA	0.2	ND	NA	23.0	~6.9	170.0	ND (0.4)	21.0	33.0	~2.1	ND (4.0)	230.0	6.0	ND	ND	~0.02	ND	ND
~0.1	NA	NA	~0.10	NA	21	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	15	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	ND	ND	ND
ND	NA	NA	ND	NA	78	~4.2	1700	ND (0.4)	120	200	~1.0	ND (4.0)	2500	12	ND	ND	~0.01	ND	ND
~0.1	NA	0.14	0.25	NA	84	~4.9	1600	~0.34	130	240	~1.6	ND (4.0)	3300	7.5	ND	ND	ND	ND	ND
~0.75	NA	NA	3	NA	328	~150	13000	ND (8.0)	2600	22000	12	ND (80.0)	55000	200	ND	ND	NA	ND	ND
ND	NA	0.23	ND	NA	35	~5.9	73	~0.74	87	360	~1.1	ND (4.0)	320	10	ND	ND	NA	ND	ND
NA	NA	ND	ND	NA	87	~1.9	55	~0.63	47	71	ND (0.2)	ND (2.0)	78	0.58	ND	ND	ND	ND	0.46
NA	NA	0.15	0.6	NA	34	ND (1.0)	5.8	~0.29	12	34	ND (0.2)	ND (2.0)	2.5	1.5	ND	ND	0.07	ND	ND
NA	NA	0.41	3	NA	90	~1.0	33	~1.3	19	110	ND (0.2)	ND (2.0)	11	1.5	ND	ND	0.04	ND	0.54
NA	NA	0.19	~0.10	NA	174	~27	2600	~2.3	530	1100	8.7	ND (2.0)	600	3.2	NA	NA	ND	ND	0.81
>2	NA	1.08	5.5	NA	586	~150	27000	~13	3500	5000	61	ND (2.0)	17000	5.1	ND	ND	0.04	ND	0.37
NA	NA	1.1	6	NA	491	~140	24000	~12	3300	4500	48	ND(2.0)	14000	4.9	ND	ND	0.07	ND	0.36
ND	NA	ND	ND	NA	33	ND (1.0)	ND (1.0)	ND (0.2)	~5	16	ND (0.2)	ND (2.0)	2	ND (0.2)	ND	ND	~0.02	ND	ND
ND	NA	ND	ND	NA	29	ND (1.0)	ND (1.0)	ND (0.2)	~2.8	9.9	ND (0.2)	ND (2.0)	ND (2.0)	1.5	ND	ND	ND	ND	ND
~0	NA	ND	~0.10	NA	46	ND (1.0)	ND (1.0)	ND (0.2)	ND (1.0)	5.2	ND (0.2)	ND (2.0)	ND (2.0)	ND (0.2)	ND	ND	~0.01	ND	ND
ND	NA	ND	~0.10	NA	43	ND (1.0)	57	ND (0.2)	17	30	ND (0.2)	ND (2.0)	12	ND (0.2)	ND	ND	ND	ND	ND
~1.0	NA	0.24	3	NA	1080	ND (100.0)	6200	ND (20.0)	1600	4300	ND (20.0)	ND (200.0)	7710	ND (20.0)	ND	ND	0.04	ND	0.3
~1.0	NA	0.31	2	NA	380	ND (100.0)	5500	ND (20.0)	1400	4200	ND (20.0)	ND (200.0)	7200	ND (20.0)	ND	ND	ND	ND	0.29
ND	NA	~0.08	ND	NA	26	ND (1.0)	9.7	ND (0.2)	~9.9	~9.5	ND (0.2)	ND (2.0)	250	0.52	ND	ND	0.06	ND	ND
ND	NA	0.22	ND	NA	83	ND (1.0)	10	ND (0.2)	~7.3	~9.9	ND (0.2)	ND (2.0)	270	2.6	ND	ND	0.09	ND	ND
ND	NA	ND	ND	NA	72	ND (1.0)	2.9	ND (0.2)	~4.9	~11	ND (0.2)	ND (2.0)	9.2	0.56	ND	ND	ND	ND	0.75
~0.1	NA	ND	ND	NA	154	3.1	26	0.43	~22	58	ND (0.2)	ND (2.0)	290	4	ND	ND	0.53	ND	0.39
NA	NA	ND	NA	NA	69	7	17	1.1	60	59	ND (0.2)	ND (2.0)	1900	0.46	ND	ND	NA	ND	0.36
ND	NA	ND	ND	NA	66	6.3	15	0.93	55	58	ND (0.2)	ND (2.0)	2500	0.48	ND	ND	0.10	ND	0.38
~0.1	NA	ND	ND	NA	48	ND (5.0)	120	2	110	710	ND (1.0)	ND (10.0)	680	ND (1.0)	na	na	~0.0	ND	ND
~0.1	0.9	ND	ND	NA	56	~27	350	~3.1	94	710	ND (1.0)	33	17	ND (1.0)	na	na	~0.0	ND	ND
0.5	1	0.24	1.5	NA	84	~62	1100	~3.7	500	980	39	5	2800	7.4	na	na	~0.0	ND	ND
ND	0.7	0.24	ND	NA	47	ND (5.0)	95	~2.4	60	790	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	na	na	~0.02	ND	ND
ND	0.8	ND	ND	NA	49	ND (5.0)	96	~3.0	69	900	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	NA	NA	ND	ND	ND
0.3	0.6	0.22	0.3	NA	203	ND (5.0)	77	~2.3	67	540	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	NA	NA	ND	ND	ND
1.5	>3.0	1.11	6	NA	144	ND (10.0)	ND (10.0)	ND (2.0)	ND (10.0)	ND (20.0)	ND (2.0)	ND (20.0)	40	ND (2.0)	ND	ND	~0.01	ND	0.44
0.3	2.3	0.19	3	NA	80	~11	470	~2.5	150	430	1.9	8.7	1100	2.2	ND	ND	ND	ND	0.6
1	1.6	ND	0.2	NA	52	~3.0	200	~0.89	37	110	0.69	ND (4.0)	250	1.4	ND	ND	0.08	ND	0.45
0.5	2	0.51	1	NA	72	~20	280	~1.6	120	360	2.4	ND (4.0)	680	2.9	ND	ND	ND	ND	0.62
0.5	2.5	0.49	0.3	NA	73	~24	310	~2.0	120	320	2.3	ND (4.0)	670	2.6	ND	ND	0.05	ND	0.66
0.5	>3.0	0.96	1	NA	300	~94	4100	~18	970	5000	31	ND (4.0)	20000	340	ND	ND	0.16	ND	0.48
ND	0.2	ND	ND	NA	18	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	15	~2.9	ND	ND	~0.01	ND	ND
ND	0.2	ND	ND	NA	19	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	12	~2.2	ND	ND	0.09	ND	ND
~0.1	0.6	ND	0.75	NA	45	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	14	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.08	ND	ND
0.2	0.7	~0.08	0.6	NA	64	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	11	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.08	ND	ND
ND	0.6	ND	0.5	NA	44	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	14	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.06	ND	ND
~0.1	0.65	ND	ND	NA	50	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	7.8	ND (0.4)	ND (4.0)	ND (4.0)	~0.71	ND	ND	0.04	ND	ND
ND	0.2	ND	ND	NA	17	ND (2.0)	15	~0.46	7.1	56	ND (0.4)	ND (4.0)	100	4.7	ND	ND	0.14	ND	ND
~0.25	1.6	ND	0.75	NA	92	~3.3	81	ND (0.4)	14	100	0.55	ND (4.0)	700	2.9	ND	ND	0.11	ND	0.58
1.75	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.21	ND	NA

clear	1.35	ND	ND	NA	98	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	7	0.56	ND	ND	0.38	ND	0.75
~0.1	0.9	ND	ND	NA	73	ND (2.0)	3.8	ND (0.4)	ND (2.0)	20	ND (0.4)	ND (4.0)	23	3.2	ND	ND	0.15	ND	0.44
0.2	0.6	ND	~0.10	NA	68	ND (2.0)	40	~0.78	6.6	28	1.6	ND (4.0)	260	0.54	ND	ND	~0.02	ND	0.47
0.2	0.7	ND	~0.10	NA	69	ND (2.0)	41	~0.82	7	31	1.6	ND (4.0)	250	0.6	ND	ND	~0.02	ND	0.47
~0.1	0.5	0.09	0.2	NA	110	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	~1.2	ND (4.0)	13	1.6	ND	ND	0.19	ND	ND
ND	0.4	ND	ND	NA	64	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	~0.88	ND (4.0)	14	1.4	ND	ND	0.18	ND	ND
ND	0.5	ND	ND	NA	68	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	~1.2	ND (4.0)	15	1.5	ND	ND	NA	ND	ND
ND	0.8	~0.08	0.25	NA	77	ND (2.0)	ND (2.0)	ND (0.4)	4.4	ND (4.0)	ND (0.4)	ND (4.0)	ND (4.0)	1.2	ND	ND	0.11	ND	ND
~0.1	0.6	0.1	0.4	NA	101	ND (2.0)	ND (2.0)	ND (0.4)	53	5200	~0.52	ND (4.0)	ND (4.0)	17	ND	ND	0.10	ND	ND
ND	0.8	ND	0.5	NA	89	ND (2.0)	ND (2.0)	ND (0.4)	6.5	260	ND (0.4)	ND (4.0)	ND (4.0)	19	NA	NA	0.13	ND	NA
~0.1	1.1	0.13	0.75	NA	148	~49	280	~4.7	100	230	7.7	ND (8.0)	3800	5.7	ND	ND	0.05	ND	ND
ND	0.3	ND	ND	NA	42	ND (4.0)	10	ND (0.8)	10	96	ND (0.8)	ND (8.0)	39	4.1	ND	ND	0.07	ND	ND
ND	0.4	ND	ND	NA	46	ND (4.0)	ND (4.0)	ND (0.8)	5.5	56	ND (0.8)	ND (8.0)	12	14	ND	ND	0.03	ND	ND
>2	>3	23.1	>6	NA	4420	~1800	65000	~51	11000	66000	280	ND (440.0	340000	140	ND	ND	ND	ND	0.56
>2	>3	15	>6	NA	3630	ND (200.0)	590000	ND (40.0)	7300	4400	ND (40.0)	ND (400.0	110000	ND (40.0)	ND	ND	ND	ND	0.55
>2	>3	14.7	>6	NA	3390	ND (200.0)	600000	ND (40.0)	7500	4700	ND (40.0)	ND (400.0	110000	ND (40.0)	ND	ND	ND	ND	0.62
0.25	1.4	0.18	2	NA	201	ND (20.0)	69	~4.0	280	180	ND (4.0)	ND (40.0)	5900	ND (4.0)	ND	ND	0.04	ND	ND
ND	0.3	ND	ND	NA	46	ND (3.8)	9.9	ND (0.8)	8.2	39	ND (0.8)	ND (7.7)	12	4.6	ND	ND	0.05	ND	ND
ND	0.8	ND	ND	NA	45	ND (2.0)	820	4	23	1400	ND (0.4)	ND (4.0)	180	~2.2	ND	ND	ND	ND	ND
>2	>3	9.3	6	NA	31	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	24	~1.2	ND	ND	0.08	ND	0.62
2	>3	14.7	>3	NA	18	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	10	~1.1	ND	ND	0.08	ND	1.2
NA	NA	13.8	NA	NA	23	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	15	~0.55	ND	ND	NA	ND	1.2
2	>3	9.8	>3	NA	45	ND (2.2)	ND (2.2)	ND (0.4)	ND (2.2)	ND (4.4)	ND (0.4)	ND (4.4)	14	~1.3	ND	ND	~0.0	ND	0.64
2	>3	16.7	>3	NA	25	ND (2.2)	ND (2.2)	ND (0.4)	ND (2.2)	ND (4.4)	ND (0.4)	ND (4.4)	7.5	~1.1	ND	ND	0.07	ND	1.2
ND	0.8	0.11	0.35	NA	42	~4.4	250	~0.79	62	170	1.4	ND (4.0)	480	5.5	ND	ND	0.08	ND	0.29
~0.1	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
~0.1	0.4	0.31	ND	NA	27	ND (2.0)	38	ND (0.4)	4.4	16	ND (0.4)	ND (4.0)	440	6	ND	ND	~0.02	ND	ND
ND	0.4	ND	ND	NA	49	ND (2.0)	69	ND (0.4)	26	850	2.7	ND (4.0)	240	3.5	ND	ND	0.10	ND	ND
ND	0.4	ND	ND	NA	47	ND (2.0)	57	ND (0.4)	24	820	2.2	ND (4.0)	270	3.8	ND	ND	0.10	ND	ND
ND	0.4	0.1	ND	NA	20	ND (2.0)	3.1	ND (0.4)	7	30	ND (0.4)	ND (4.0)	61	5	ND	ND	0.06	ND	ND
ND	0.4	ND	ND	NA	39	ND (2.0)	93	ND (0.4)	14	17	ND (0.4)	ND (4.0)	66	2.5	ND	ND	0.07	ND	ND
~0.1	1.1	ND	0.50	NA	211	ND (2.2)	ND (2.2)	ND (0.4)	3.8	27	ND (0.4)	ND (4.3)	76	ND (0.4)	ND	ND	0.06	ND	ND
2	2.2	ND	2.00	NA	121	~4.7	600	ND (0.5)	100	750	2.9	ND (4.6)	1300	4.6	ND	ND	0.03	ND	ND
ND	0.2	ND	ND	NA	~243	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	0.32
ND	0.4	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
ND	0.8	ND	~0.10	NA	56	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	~0.01	ND	ND
ND	0.9	ND	0.50	NA	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.10	ND	ND
ND	0.8	ND	ND	NA	38	na	na	na	na	na	na	na	na	na	ND	ND	~0.02	ND	ND
ND	0.8	ND	ND	NA	36	na	na	na	na	na	na	na	na	na	ND	ND	0.08	ND	ND
ND	0.8	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	~0.02	ND	NA
ND	1.6	0.22	2.00	NA	35	na	na	na	na	na	na	na	na	na	ND	ND	0.03	ND	ND
0.8	2.6	NA	5.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.25	ND	NA
ND	0.3	ND	ND	NA	19	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	~0.01	ND	ND
ND	0.7	ND	ND	NA	78	ND (2.0)	19	ND (0.4)	~8	25	ND (0.4)	ND (4.0)	42	1.1	ND	ND	0.03	ND	ND
~0.1	0.6	ND	ND	NA	65	na	na	na	na	na	na	na	na	na	ND	ND	0.08	ND	ND
ND	0.4	ND	ND	NA	20	ND (2.0)	240	ND (0.4)	~20	40	ND (0.4)	ND (4.0)	16000	4.9	ND	ND	0.09	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	0.4	ND	ND	NA	9	ND (2.1)	11	ND (0.4)	ND (2.1)	17	ND (0.4)	ND (4.2)	82	6.3	ND	ND	0.11	ND	ND
ND	0.4	ND	ND	NA	22	ND (2.0)	11	ND (0.4)	~2.5	20	ND (0.4)	ND (4.0)	64	6.1	ND	ND	0.09	ND	ND
>2	>3	2.26	6	NA	421	~310	6900	~1.6	~5600	5500	6.3	ND (4.0)	28000	2.4	ND	ND	0.04	ND	0.22
ND	0.6	ND	~0.10	NA	28	ND (2.1)	10	ND (0.4)	~10	45	~0.28	ND (4.2)	280	3.4	ND	ND	0.06	ND	ND
ND	0.2	ND	~0.1	NA	48	ND (1.0)	3.8	ND (0.2)	2.4	15	ND (0.2)	11	~210	ND (0.2)	ND	ND	0.04	ND	ND
ND	~0.1	ND	~0.30	NA	25	na	na	na	na	na	na	na	na	na	ND	ND	0.05	ND	ND
ND	~0.1	ND	ND	NA	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
ND	ND	ND	ND	NA	39	na	na	na	na	na	na	na	na	na	ND	ND	0.13	ND	ND
ND	1	0.15	0.50	NA	109	~27	500	~0.95	480	710	6.4	89	~8700	ND (0.2)	ND	ND	0.17	ND	ND
ND	1.6	0.17	0.70	NA	103	~30	550	~0.92	560	770	6.4	100	~9400	ND (0.2)	ND	ND	0.05	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	1.1	28	4.1	~20	3.1	6	34	0.7	ND (4.0)	490	1.4	ND	ND	NA	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	0.95	37	4.8	190	4.6	12	70	1.2	ND (4.0)	1400	0.93	ND	ND	NA	ND	ND

NA	NA	NA	ND	0.96	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND	ND
NA	NA	NA	ND	0.78	47	12	280	4.7	30	170	2.9	ND (4.0)	2700	ND (0.4)	ND	ND	NA	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	3	9.1	ND (2.0)	ND (2.0)	0.86	ND (2.0)	5.4	ND (0.4)	ND (4.0)	15	1.2	ND	ND	NA	ND	ND
NA	NA	NA	3	1.6	185	250	15000	3.3	170	520	67	ND (5.0)	15000	ND (0.5)	ND	ND	0.08	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	1.6	21	ND (2.0)	ND (2.0)	1.1	5.8	11	0.43	5.4	230	1.3	ND	0.18	0.26	ND	ND
NA	NA	NA	ND	1.1	52	ND (2.5)	ND (2.5)	1	ND (2.5)	ND (5.0)	ND (0.5)	ND (5.0)	14	ND (0.5)	ND	ND	0.05	ND	ND
NA	NA	NA	ND	0.57	56	14	76	4.3	14	120	1.6	ND (4.0)	1900	0.43	ND	ND	NA	ND	ND
NA	NA	NA	2	1.2	28	2.3	21	21	7.9	170	ND (0.4)	ND (4.0)	360	0.85	ND	ND	0.06	ND	ND
NA	NA	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	3	1.4	25	ND (2.0)	27	23	6.4	220	1.4	ND (4.0)	370	0.61	ND	ND	ND	ND	ND
NA	NA	NA	3	1.4	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
NA	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	3	1.4	23	ND (2.0)	29	19	6.5	250	0.63	ND (4.0)	330	0.65	ND	ND	0.04	ND	ND
NA	NA	NA	ND	1.4	22	ND (2.5)	2.8	8.2	ND (2.5)	44	ND (0.5)	ND (5.0)	75	1.8	ND	ND	ND	ND	ND
NA	NA	NA	0.5	2	23	ND (2.0)	5.8	6.7	ND (2.0)	37	ND (0.4)	6.5	1300	4.8	ND	ND	0.04	ND	ND
NA	NA	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	1	0.59	36	ND (2.0)	7.9	10	ND (2.0)	35	ND (0.4)	16	1000	1.2	ND	ND	ND	ND	ND
NA	NA	NA	ND	2.7	28	3.2	120	8.1	19	85	ND (0.5)	7.2	1500	8.6	ND	ND	0.06	ND	ND
NA	NA	NA	ND	0.59	58	8.5	53	10	12	130	ND (0.4)	ND (4.0)	750	0.42	ND	ND	0.09	ND	ND
NA	NA	NA	2	NA	NA	ND (2.0)	2900	5.8	470	190	13	ND (4.0)	810	1.9	NA	NA	NA	ND	NA
NA	NA	NA	ND	0.6	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.04	ND	ND
NA	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.25	0.37	54	9.1	100	7.7	13	73	0.65	ND (4.0)	1200	0.6	ND	ND	0.05	ND	ND
NA	NA	NA	ND	0.35	54	10	14	6.7	9	72	0.6	ND (4.0)	920	0.5	ND	ND	ND	ND	ND
NA	NA	NA	ND	0.31	55	8	5.4	5.7	7.3	35	ND (0.4)	ND (4.0)	590	ND (0.4)	ND	ND	0.04	ND	ND
NA	NA	NA	0.75	0.52	129	32	23	12	19	98	0.84	ND (4.0)	2700	1.9	ND	ND	ND	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	1.4	93	ND (2.5)	2.6	1.5	ND (2.5)	5.8	ND (0.5)	ND (5.0)	390	ND (0.5)	ND	ND	ND	ND	ND
NA	NA	NA	3	NA	NA	4.3	43	2.1	14	93	1.4	ND (5.0)	1700	2.9	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.5)	ND (2.5)	9.3	8.3	300	ND (0.5)	ND (5.0)	160	1.4	NA	NA	ND	ND	NA
NA	NA	NA	4	NA	29	ND (2.0)	2.3	1.5	ND (2.0)	6.7	ND (0.4)	ND (4.0)	96	0.72	NA	NA	ND	ND	NA
NA	NA	NA	4	NA	22	ND (2.5)	ND (2.5)	1.3	ND (2.5)	5.6	ND (0.5)	ND (5.0)	100	0.77	NA	NA	0.06	ND	NA
NA	NA	NA	4	NA	19	ND (2.0)	3.3	1.7	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	29	0.63	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	38	ND (2.0)	ND (2.0)	7.5	5.9	140	ND (0.4)	ND (4.0)	80	1.4	NA	NA	ND	ND	NA
NA	NA	NA	0.1	NA	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
NA	NA	NA	0.25	NA	73	ND (2.0)	2.5	17	6.4	61	ND (0.4)	ND (4.0)	230	1.2	NA	NA	0.11	ND	NA
NA	NA	NA	0.1	NA	58	3.7	30	17	7.7	190	1.3	ND (5.0)	560	0.67	NA	NA	ND	ND	NA
NA	NA	NA	0.1	NA	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	49	5	64	18	11	160	ND (0.5)	ND (5.0)	600	0.68	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	69	ND (2.0)	53	17	7.5	180	ND (0.4)	ND (4.0)	1300	0.84	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	70	7.1	210	19	41	380	1.7	ND (4.0)	2700	3.6	NA	NA	0.15	ND	NA
NA	NA	NA	0.1	NA	108	21	56	16	54	190	9.3	ND (4.0)	3900	1.4	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	70	6.2	130	13	60	720	ND (0.4)	ND (4.0)	15000	ND (0.4)	NA	NA	0.07	ND	NA
NA	NA	NA	1	NA	118	64	350	22	140	530	17	ND (4.0)	6100	3	NA	NA	0.05	ND	NA
NA	NA	NA	0.25	NA	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
NA	NA	NA	0.25	NA	79	45	1200	11	300	1100	4.8	ND (5.0)	12000	4.3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA

NA	NA	NA	0.25	NA	23	ND (2.0)	ND (2.0)	4.3	4.2	39	ND (0.4)	ND (4.0)	37	ND (0.4)	NA	NA	0.71	1/0.3	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	2	NA	205	43	99	14	67	230	1.3	ND (4.0)	3000	3.3	NA	NA	0.06	ND	NA
NA	NA	NA	2	NA	180	33	100	11	47	190	1	ND (4.0)	2000	2.8	NA	NA	~0.02	ND	NA
NA	NA	NA	0.25	NA	NA	ND (2.5)	ND (2.5)	2.4	ND (2.5)	11	ND (0.5)	7.4	30	6.6	NA	NA	0.11	ND	NA
NA	NA	NA	ND	NA	84	3.1	19	2.8	5.1	22	0.63	ND (4.0)	440	ND (0.4)	NA	NA	0.08	ND	NA
NA	NA	NA	1	NA	93	ND (2.0)	ND (2.0)	2.2	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	0.06	ND	NA
NA	NA	NA	0.25	NA	36	ND (2.0)	ND (2.0)	0.45	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
NA	NA	NA	6	NA	NA	14	4900	80	400	1900	13	ND (4.0)	24000	1.8	NA	NA	0.04	ND	NA
NA	NA	NA	0.7	NA	NA	4.7	210	53	26	180	0.56	ND (4.0)	1200	1.8	NA	NA	0.03	ND	NA
NA	NA	NA	2	NA	NA	140	3900	100	850	1800	3.5	ND (4.0)	24000	13	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	8	6.6	5.9	54	ND (0.4)	ND (4.0)	78	1.3	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	3.4	50	63	26	510	1.3	ND (4.0)	90	1.4	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	4.3	33	14	17	180	ND (0.5)	ND (5.0)	120	1.3	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	5.4	68	14	26	200	0.7	ND (5.0)	510	3.2	NA	NA	0.05	ND	NA
NA	NA	NA	6	NA	NA	ND (2.0)	8.7	33	9.7	220	ND (0.4)	ND (4.0)	47	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (4.0)	7.5	16	5.3	51	ND (0.8)	ND (8.0)	ND (8.0)	3.3	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (4.0)	28	78	24	400	ND (0.8)	ND (8.0)	130	3.5	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	ND (5.0)	24	49	18	310	ND (1.0)	ND (10.0)	130	3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.5)	ND (2.5)	35	6	130	3.3	ND (5.0)	38	4.8	NA	NA	0.15	ND	NA
NA	NA	NA	0.75	NA	NA	41	81	62	280	940	ND (0.5)	ND (5.0)	1800	5	NA	NA	0.6	ND	NA
NA	NA	NA	6	NA	NA	610	1300	1100	2000	27000	320	ND (10.0)	17000	240	NA	NA	0.13	ND	NA
NA	NA	NA	0.75	NA	NA	450	14	19	31	170	1.3	ND (4.0)	870	170	NA	NA	ND	ND	NA
NA	NA	NA	1	NA	NA	850	99	ND (0.5)	6.1	20	1.3	ND (5.0)	17	170	NA	NA	0.06	ND	NA
NA	NA	NA	0.25	NA	NA	15	ND (2.0)	2.9	5.5	17	ND (0.4)	ND (4.0)	ND (4.0)	87	NA	NA	0.07	ND	NA
NA	NA	NA	1	NA	NA	670	140	ND (0.4)	2.1	5.8	0.89	ND (4.0)	31	240	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	1800	41000	1300	7300	33000	510	ND (20.0)	550000	280	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	410	ND (2.0)	3.7	6.9	24	0.64	ND (4.0)	14	180	NA	NA	0.18	ND	NA
NA	NA	NA	6+	NA	NA	1400	44000	1900	6300	51000	760	ND (20.0)	580000	300	NA	NA	ND	ND	NA
NA	NA	NA	6+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	36	ND (2.0)	6.1	6.7	ND (2.0)	5.9	ND (0.4)	ND (4.0)	73	ND (0.4)	NA	NA	0.17	ND	NA
NA	NA	NA	0.25	NA	30	ND (2.5)	9.1	47	3.8	150	2.1	ND (5.0)	10	4.5	NA	NA	0.1	ND	NA
NA	NA	NA	ND	NA	34	ND (2.0)	ND (2.0)	0.99	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	10	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	28	18	ND (2.0)	1.8	2.8	6.3	2.1	ND (4.0)	49	3.9	NA	NA	0.22	ND	NA
NA	NA	NA	ND	NA	17	ND (2.0)	4.5	5.5	4.7	40	1	ND (4.0)	3000	ND (4.0)	NA	NA	ND	ND	NA
NA	NA	NA	6+	NA	152	ND (2.0)	ND (2.0)	2.8	ND (2.0)	7.3	0.43	ND (4.0)	17	ND (0.4)	NA	NA	0.11	ND	NA
NA	NA	NA	ND	NA	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.09	ND	NA
NA	NA	NA	ND	NA	30	ND (2.0)	ND (2.0)	2.4	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	80	ND (0.4)	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	31	ND (2.5)	ND (2.5)	1.4	ND (2.5)	ND (5.0)	ND (0.5)	ND (5.0)	170	ND (0.5)	NA	NA	0.04	ND	NA
NA	NA	NA	0.25	NA	119	10	ND (2.0)	2	2.2	28	3	ND (4.0)	300	300	NA	NA	ND	ND	NA
NA	NA	NA	1	NA	173	32	1100	30	360	1200	1.9	ND (4.0)	4700	13	NA	NA	0.03	ND	NA
NA	NA	NA	0.5	NA	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	ND	NA
NA	NA	NA	3	NA	342	29	490	27	95	1200	0.56	ND (5.0)	2600	2.7	NA	NA	0.56	ND	NA
NA	NA	NA	0.75	NA	97	ND (2.0)	62	27	5.1	350	0.66	ND (4.0)	8000	2.1	NA	NA	0.03	ND	NA
NA	NA	NA	2	NA	112	23	87	12	18	200	4.6	ND (4.0)	790	1.3	NA	NA	ND	ND	NA
NA	NA	NA	2	NA	32	ND (2.0)	ND (2.0)	3.3	ND (2.0)	110	ND (0.4)	ND (4.0)	22	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	45	ND (2.5)	ND (2.5)	1.8	ND (2.5)	6.3	ND (0.5)	ND (5.0)	60	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	0.3	NA	59	ND (2.0)	ND (2.0)	1.3	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	92	ND (0.4)	NA	NA	0.05	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	ND	NA
NA	NA	NA	0.3	NA	46	ND (2.0)	ND (2.0)	8.9	ND (2.0)	5.6	ND (0.4)	ND (4.0)	210	1.6	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	32	ND (2.0)	ND (2.0)	9.9	ND (2.0)	8.6	ND (0.4)	ND (4.0)	35	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2	ND	NA
NA	NA	NA	0.4	NA	27	ND (2.0)	ND (2.0)	8.7	ND (2.0)	7.3	ND (0.4)	ND (4.0)	27	ND (0.4)	NA	NA	ND	ND	NA

NA	NA	NA	ND	NA	53	30	5.3	31	18	82	3.9	4.6	270	10	NA	NA	0.15	ND	NA
NA	NA	NA	4	NA	27	ND (2.0)	ND (2.0)	11	ND (2.0)	55	ND (0.4)	ND (4.0)	45	0.42	NA	NA	0.08	ND	NA
NA	NA	NA	>6	NA	23	ND (2.0)	ND (2.0)	11	ND (2.0)	79	ND (0.4)	ND (4.0)	67	ND (4.0)	NA	NA	0.07	ND	NA
NA	NA	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	26	ND (2.5)	11	8.6	13	470	ND (0.5)	ND (5.0)	35	1.2	NA	NA	0.08	ND	NA
NA	NA	NA	5	NA	35	ND (2.5)	ND (2.5)	2.7	ND (2.5)	ND (5.0)	ND (0.5)	ND (5.0)	470	ND (0.5)	NA	NA	0.07	ND	NA
NA	NA	NA	6	NA	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	ND	NA
NA	NA	NA	ND	NA	121	ND (2.5)	ND (2.5)	1.2	ND (2.5)	6.6	0.5	ND (5.0)	6.3	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	2	NA	152	46	610	23	200	1400	1.2	ND (4.0)	2000	12	NA	NA	ND	ND	NA
NA	NA	NA	5	NA	151	76	1700	71	270	1200	ND (0.4)	ND (4.0)	3800	ND (0.4)	NA	NA	0.37	ND	NA
NA	NA	NA	5	NA	147	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.37	ND	NA
NA	NA	NA	0.75	NA	74	29	11	3.9	53	40	ND (0.4)	ND (4.0)	750	1.3	NA	NA	0.04	ND	NA
NA	NA	NA	5	NA	166	8.7	63	23	41	160	ND (0.4)	ND (4.0)	790	4.5	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	141	4.7	59	17	28	130	ND (0.4)	ND (4.0)	24	3.5	NA	NA	0.06	ND	NA
NA	NA	NA	2	NA	234	230	3900	35	430	3400	11	ND (4.0)	38000	15	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	25	ND (2.5)	ND (2.5)	16	ND (2.5)	17	ND (0.5)	ND (5.0)	20	ND (0.5)	NA	NA	0.06	ND	NA
NA	NA	NA	0.2	NA	12	ND (2.5)	ND (2.5)	3.7	ND (2.5)	54	ND (0.5)	ND (5.0)	ND (5.0)	ND (0.5)	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	21	ND (2.0)	3	12	17	65	ND (0.4)	ND (4.0)	32	1.7	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	6.3	ND (2.0)	ND (2.0)	10	6.6	26	ND (0.4)	ND (4.0)	ND (4.0)	1.5	NA	NA	0.07	ND	NA
NA	NA	NA	ND	NA	24	ND (2.0)	ND (2.0)	9.3	4.7	32	ND (0.4)	ND (4.0)	ND (4.0)	1.2	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	52	5.8	22	2.3	15	150	ND (0.4)	ND (4.0)	18	2.6	NA	NA	0.05	ND	NA
NA	NA	NA	ND	NA	23	ND (2.0)	ND (2.0)	6.3	12	45	ND (0.4)	ND (4.0)	5.1	2.1	NA	NA	0.04	ND	NA
NA	NA	NA	0.3	NA	51	11	12	7.9	110	410	ND (0.4)	ND (4.0)	11000	0.55	NA	NA	0.2	ND	NA
NA	NA	NA	0.1	NA	40	ND (2.5)	ND (2.5)	3.3	4.7	36	ND (0.5)	ND (5.0)	44	1.8	NA	NA	0.09	ND	NA
NA	NA	NA	ND	NA	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	100	39	4.6	42	30	490	ND (0.4)	8.1	4.4	2.4	NA	NA	0.09	ND	NA
NA	NA	NA	0.75	NA	84	15	14	20	280	330	ND (0.4)	ND (4.0)	1400	1.4	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	25	91	31	32	31	140	ND (0.5)	ND (5.0)	48	2.3	NA	NA	ND	ND	NA
NA	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	ND	NA
NA	NA	NA	4	NA	93	320	240	77	700	1300	13	5.9	1100	5.7	NA	NA	0.05	ND	NA
NA	NA	NA	4	NA	95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.4	NA	34	ND (2.0)	9.9	22	27	750	ND (0.4)	ND (4.0)	4	ND (0.4)	NA	NA	0.13	ND	NA
NA	NA	NA	ND	NA	33	ND (2.0)	ND (2.0)	3.6	18	470	ND (0.4)	ND (4.0)	ND (4.0)	0.4	NA	NA	0.04	ND	NA
NA	NA	NA	3	NA	NA	ND (4.0)	17	35	41	210	ND (0.8)	ND (8.0)	ND (8.0)	ND (0.8)	NA	NA	0.07	ND	NA
NA	NA	NA	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08	ND	NA
NA	NA	NA	ND	NA	47	ND (2.5)	ND (2.5)	3.4	ND (2.5)	8.1	ND (0.5)	ND (5.0)	ND (5.0)	0.76	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	ND	NA
NA	NA	NA	4	NA	NA	ND (2.0)	ND (2.0)	3.8	5.2	18	3.6	ND (4.0)	11	1.8	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	7.1	15	73	1.9	ND (4.0)	ND (4.0)	4.3	NA	NA	0.05	ND	NA
NA	NA	NA	ND	NA	72	ND (2.0)	ND (2.0)	7.8	15	110	ND (0.4)	6	ND (4.0)	6.6	NA	NA	0.11	ND	NA
NA	NA	NA	4	NA	NA	ND (2.0)	16	14	10	44	ND (0.4)	6.5	12	18	NA	NA	0.06	ND	NA
NA	NA	NA	0.1	NA	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	33	ND (2.5)	ND (2.5)	11	17	100	ND (0.5)	5.4	ND (5.0)	4.8	NA	NA	0.08	ND	NA
NA	NA	NA	ND	NA	25	ND (2.5)	ND (2.5)	2.3	5.6	24	ND (0.5)	17	ND (5.0)	7.3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	21	2.1	29	41	85	240	1.9	ND (4.0)	42	4.9	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	ND	NA
NA	NA	NA	1	NA	40	19	ND (2.0)	1.3	4.8	11	ND (0.4)	130	ND (4.0)	3.7	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	NA	NA
NA	NA	NA	0.25 (0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	12	ND (2.0)	ND (2.0)	1.3	10	7.9	ND (2.0)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	0.03	ND	NA
NA	NA	NA	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	55	ND (2.0)	ND (2.0)	ND (0.4)	2.7	ND (4.0)	ND (2.0)	ND (4.0)	ND (4.0)	0.74	NA	NA	ND	ND	NA

NA	NA	NA	ND	NA	68	ND (2.0)	ND (2.0)	ND (0.4)	11	7.8	ND (2.0)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	0.1	NA	62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	58	ND (2.0)	ND (2.0)	ND (0.4)	12	12	ND (2.0)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	55	ND (2.5)	ND (2.5)	ND (0.5)	11	4.5	ND (2.5)	ND (5.0)	ND (5.0)	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	97	ND (2.5)	ND (2.5)	16	24	110	ND (2.5)	ND (5.0)	7.3	0.76	NA	NA	ND	ND	NA
NA	NA	NA	2	NA	285	ND (2.0)	550	82	40	290	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	>6	NA	53	ND (2.0)	ND (2.0)	31	15	110	ND (0.4)	ND (4.0)	ND (4.0)	5.6	NA	NA	ND	ND	NA
NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	66	ND (2.0)	7	4.5	11	33	ND (0.4)	ND (4.0)	4.6	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	65	ND (2.5)	ND (2.5)	0.65	5.2	ND (5.0)	ND (0.5)	ND (5.0)	ND (5.0)	13	NA	NA	0.03	ND	NA
NA	NA	NA	0.25	NA	90	14	340	8.4	220	3000	ND (0.4)	ND (4.0)	980	6.5	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.75	NA	57	ND (2.0)	ND (2.0)	0.75	4.4	5.6	ND (0.4)	ND (4.0)	7.1	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	89	ND (2.0)	ND (2.0)	3.8	11	46	ND (0.4)	ND (4.0)	ND (4.0)	1.3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	69	ND (2.5)	ND (2.5)	1.9	39	48	ND (0.5)	ND (5.0)	ND (5.0)	ND (0.5)	NA	NA	0.07	ND	NA
NA	NA	NA	0.25	NA	NA	ND (20.0)	99	21	99	550	ND (4.0)	ND (40.0)	ND (40.0)	ND (4.0)	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.3	NA	NA	19	190	13	260	730	ND (0.8)	ND (8.0)	ND (8.0)	6.8	NA	NA	0.04	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	5	NA	NA	150	610	150	1400	940	ND (0.4)	ND (4.0)	120	11	NA	NA	0.08	ND	NA
NA	NA	NA	4	NA	NA	190	1100	43	980	12000	ND (4.0)	ND (40.0)	1200	200	NA	NA	ND	ND	NA
NA	NA	NA	0.1	NA	NA	ND (10.0)	490	16	160	270	ND (2.0)	ND (20.0)	54	18	NA	NA	0.14	ND	NA
NA	NA	NA	ND	NA	NA	6.3	46	14	42	510	ND (0.5)	ND (4.7)	92	3.6	NA	NA	0.11	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	0.52	4.8	23	ND (0.4)	ND (4.0)	ND (4.0)	6.6	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	5.4	37	3.7	19	82	ND (0.4)	ND (4.2)	36	3.2	NA	NA	0.08	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	14	1.8	12	44	ND (0.4)	ND (4.0)	8.5	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	4	NA	NA	120	4500	37	2100	4300	ND (4.0)	ND (40.0)	~1500	82	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	2.4	8.4	6.6	210	120	ND (0.5)	ND (4.8)	~97	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	0.84	2.8	ND (4.0)	ND (0.4)	ND (4.0)	~4.3	0.52	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	2.2	21	1	9.4	50	ND (0.5)	ND (4.8)	~15	0.66	NA	NA	0.03	ND	NA
NA	NA	NA	0.75	NA	NA	13	310	19	1100	~48000	ND (0.4)	ND (4.0)	~29	68	NA	NA	0.03	ND	NA
NA	NA	NA	0.4	NA	NA	46	630	13	470	790	ND (0.8)	ND (8.0)	~81	ND (0.8)	NA	NA	ND	ND	NA
NA	NA	NA	0.3	NA	NA	ND (2.0)	110	16	90	130	ND (0.4)	ND (4.0)	ND (4.0)	1.7	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	ND (10.0)	120	8.1	46	~130	ND (2.0)	ND (20.0)	ND (20.0)	ND (2.0)	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	ND (10.0)	~6.7	2.4	12	~22	ND (2.0)	ND (20.0)	20	ND (2.0)	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	NA	ND (10.0)	ND (10.0	2.6	10	ND (20.0)	ND (2.0)	ND (20.0)	ND (20.0)	ND (2.0)	NA	NA	ND	ND	NA
NA	NA	NA	3	NA	NA	ND (10.0)	47	16	13	~130	14	ND (20.0)	20	ND (2.0)	NA	NA	0.04	ND	NA
NA	NA	NA	3	NA	NA	ND (10.0)	1800	190	400	~2700	4.3	ND (20.0)	180	ND (2.0)	NA	NA	ND	ND	NA
NA	NA	NA	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	3	NA	NA	ND (10.0)	270	970	170	~4100	ND (2.0)	ND (20.0)	ND (20.0)	ND (2.0)	NA	NA	0.03	ND	NA
NA	NA	NA	6	NA	NA	ND (10.0)	330	260	130	~4100	84	34	910	ND (2.0)	NA	NA	0.03	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
NA	NA	NA	1	NA	NA	ND (10.0)	320	99	110	~2000	ND (2.0)	ND (20.0)	410	3.8	NA	NA	ND	ND	NA
NA	NA	NA	0.5	NA	NA	ND (10.0)	81	280	100	~3200	38	ND (20.0)	64	ND (2.0)	NA	NA	0.06	ND	NA
NA	NA	NA	>6	NA	NA	2200	29000	360	12000	~69000	200	ND (1000.0	20000	ND (100.0)	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	1.9	~1.6	~16	ND (0.4)	ND (4.0)	~2.9	0.5	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	ND (2.0)	2.2	4.7	~11	ND (0.4)	ND (4.0)	4.4	0.46	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (2.0)	2.2	2.4	7.5	~52	ND (0.4)	16	ND (4.0)	ND (0.4)	NA	NA	0.04	ND	NA

			Coordinates				YSI Meter				Weather		
ride	Potassium (mg/L)						Salinity	Temp	Cond uctivit	Rain Gauge	24hrs	48hrs	Wet/Dry ?
DR-850	Alpha	Field	GPS North(+)	GPS West (-)	Comments	Additional Location Information	ppt	C	uS	Location	inches	inches	
NA	4.0	4.30	42.515744	-71.136289	Sample taken shady l	Commerce Way locat	na	na	na	Bedford	0	0.06	Dry
NA	5.4	6.30	42.513171	-71.142649	1 foot deep at samplir	Halls Brook behind 18	na	na	na	Bedford	0	0.06	Dry
NA	6.2	32.10	42.513291	-71.142539	Unnamed stream just	upstream of Halls Broc	na	na	na	Bedford	0	0.06	Dry
NA	7.3	20.90	42.518563	-71.146526	Landfill Brook, very sl	Just south of Landfill E	na	na	na	Bedford	0	0.06	Dry
NA	4.8	34.60	42.518739	-71.146411	some (very little) suds	Southeast of Landfill E	na	na	na	Bedford	0	0.06	Dry
NA	4.8	50.00	42.518739	-71.146411	duplicate		na	na	na	Bedford	0	0.06	Dry
NA	280	50+	42.41380356	-71.13242519	some surface inflow w	Near Amelia Earhart D	12	12.5	**20mS	Boston-Logan	0	0.42	Wet
NA	150	50+	42.403340	-71.020587	gray bacteria plaque,	(Gillooly) Cabot St be	7.5	11.5	na	Boston-Logan	0	0.42	Wet
NA	160	46.60	42.40397	-71.021087	odor, gray/black cloud	privately owned	na	na	na	Boston-Logan	0	0.42	Wet
NA	42	50+	42.40367	-71.020987	significant gray bacte	privately owned, drain	na	na	na	Boston-Logan	0	0.42	Wet
NA	ND	NA	42.455741	-71.0840671	clean location	Spot Pond Brook	na	na	na	Boston-Logan	0	0.42	Wet
NA	ND	NA	42.455741	-71.0840671	duplicate	Spot Pond Brook	na	na	na	Boston-Logan	0	0.42	Wet
0.3	ND	0.85	42.419214	-71.117619	clouder than normal w	Meeting house brook,	0.3/1	11.7/11.9	50/180	Boston-Logan	0	0.03	Dry
NA	ND	1.25	42.425963	-71.114988		Meeting house brook	0.1	14.1	291	Boston-Logan	0	0.03	Dry
NA	4.9	4.75	42.399303	-71.160888	waded in stream to co	Winns Brook of Bright	0.6	14.4	1085	Boston-Logan	0	0.03	Dry
0.14	4.7	5.00	42.399303	-71.160888	duplicate		na	na	na	Boston-Logan	0	0.03	Dry
NA	6.6	4.55	42.418716	-71.151379	just downstream of br	Mill Brook @ Mystic S	0.8	14.1	1625	Boston-Logan	0	0.03	Dry
0.07	6.1	6.30	42.418597	-71.152247	Sample taken from flo	Mill Brook @ opening	0.8	13.7	1623	Boston-Logan	0	0.03	Dry
1.01	200	50+	42.278672	-71.012859	Pungent 'corpse-y' od	outfall between yacht	4.7	15.2	*10.6mS	Boston-Logan	0	0	Dry
0.25	12	9.25	42.287572	-71.022259	lots of orange flocc co	across from CVS on C	1	15	1913	Boston-Logan	0	0	Dry
1.34	350	50+	42.289355	-71.041773	Very, very muddy wat	Tenean Beach	24.5	16.3	38.36m	Boston-Logan	0	0	Dry
1.53	330	50+	42.298373	-71.046379	Started sprinkling abo	at dog park off Victory	24.5/24.6	16.3/16.3	.36/38.	Boston-Logan	0	0	Dry
0.31	7.2	3.75	42.288373	-71.092879	bacteria plague cover	Canterbury Brook, Bo	0.6	14.6	1156	Milton-Blue Hi	0.07	0.07	Dry
0.32	7.1	2.30	42.288373	-71.092879	duplicate		na	na	na	Milton-Blue Hi	0.07	0.07	Dry
0.13	2.8	0.30	42.57664155	-70.92825715		Frost Fish Brook, 34 S	0.3	13.3	585	Beverly	0	0.16	Dry
0.1	3	1.85	42.58395698	-70.92904291	Moss growing in pipe	Downstream of bridge	0.2	12.8	375	Beverly	0	0.16	Dry
0.09	3.5	1.00	42.51446323	-70.86578117	Some moss growing c	Sampled where brook	0.2	13.8	329	Beverly	0	0.16	Dry
0.14	4.6	2.70	42.51182185	-70.85955935		Between Rts. 134A ar	0.4	13.1	641	Beverly	0	0.16	Dry
0.34	5.3	1.70	42.466942	-70.92203147	Sample combined fro	Sampled about 15' do	0.5	14.2	826	Beverly	0	0.16	Dry
0.32	5.1	1.40	42.466942	-70.92203147	Ammonia kits - samples	recorded as 1.0 but	na	na	na	Beverly	0	0.16	Dry
0.23	4.3	1.40	42.262068	-71.046682	sampled downstream	Unquity Brook off Chr	0.5	14.5	800	Milton-Blue Hi	0	0	Dry
0.24	4.1	1.85	42.253703	-71.068976	Heard dripping from u	downstream of Rando	0.5	15.4	797	Milton-Blue Hi	0	0	Dry
1.66	660	44.30	42.266485	-70.997104	Flow was very strong	Wollaston Beach upst	28.5	20.5	*40.4mS	Milton-Blue Hi	0	0	Dry
0.77	200	41.20	42.277357	-71.008933	trash in water and pla	just south of WollB1 o	2.7	17.1	**12mS	Milton-Blue Hi	0	0	Dry
0.63	54	NA	42.278672	-71.012859	duplicate of WollB1	duplicate of WollB1	na	na	na	Milton-Blue Hi	0	0	Dry
0.61	55	29.30	42.278672	-71.012859	water flowing out of b	outfall between yacht	3	16.1	*5.55mS	Milton-Blue Hi	0	0	Dry
0.15	4.8	0.25	42.4826072	-71.1046187	Cl2 exceeded holding	Unnamed tributary to	0.4	14.5	798	Boston-Logan	0.04/0	0.04/0.	Wet
0.15	3.4	0.90	42.483930	-71.1039388	Cl2 exceeded holding	Sweetwater Brook @	0.4	17	821	Boston-Logan	0.04/0	0.04/0.	Wet
0.12	4.6	1.30	42.48685	-71.0985788	Cl2 exceeded holding	Elm St in Stoneham, r	0.7	15.6	1434	Boston-Logan	0.08/0	0.08/0.	Wet
0.11	3.2	0.40	42.490277	-71.101799	Cl2 exceeded holding	Off Toms Way in Stor	0.5	19.1	977	Boston-Logan	0.08/0	0.08/0.	Wet
0.16	3.1	1.05	42.490277	-71.101799	Cl2 exceeded holding	duplicate of Toms	na	na	na	Boston-Logan	0.08/0	0.08/0.	Wet
ND (0.1)	ND	ND	42.490277	-71.101799	Cl2 exceeded holding	same location as Tom	0.1	21	245	Boston-Logan	0.1/0.1	0.1/0.2	Wet
0.62	77	49.20	42.403340	-71.020587	grey bacterial plaque	Corner of Cabot and C	0.7	16.7	3631	Boston-Logan	0	0	Dry
0.96	140	50*	42.399997	-71.053984	thick bacteria/algae o	top corner of Boston M	6.5	20.34	11.36	Boston-Logan	0	0	Dry
0.97	140	35.30	42.394436	-71.049780	lots of trash; ground v	Just a few feet West o	8	20.2	12.28	Boston-Logan	0	0	Dry
1.17	200	50*	42.394421	-71.049706	Surf., NH3 (EPA) and	other 500mL bottle sar	14.2	21.5	23.49	Boston-Logan	0	0	Dry
1.15	200	50*	42.394421	-71.049706	Duplicate of IsEnd03		na	na	na	Boston-Logan	0	0	Dry
0.81	130	46.10	42.41380356	-71.13242519	can hear running water	in pipe; YSI measurm	9.1	17.7	15.1	Boston-Logan	0	0	Dry
0.13	5.8	4.25	42.463455	-71.149258	sampled far right of c	Russel Brook at the e	0.6	17.1	1283	Bedford	0.01	0.02	Dry
0.16	6	1.30	42.463455	-71.149258	Duplicate of Russ1		na	na	na	Bedford	0.01	0.02	Dry
0.09	3.7	0*	42.495550	-71.133700	flow out of small stone	plue panel covering to	0.3	22.1	660	Bedford	0.01	0.02	Dry
0.09	3.4	0.90	42.495400	-71.133700	sampled on other side	about 10 feet from US	0.3	21.4	643	Bedford	0.01	0.02	Dry
0.11	3.7	0.70	42.495412	-71.134111	about 6 inches deep,	back corner of United	0	22.3	671	Bedford	0.01	0.02	Dry
0.11	5.6	2.35	42.498925	-71.137440	duck instream~40'awa	Off Olympia Ave right	0.7	18	1416	Bedford	0.01	0.02	Dry
0.22	5.1	1.50	42.250692	-70.997793	Accessed via parking	Canal opening just off	0.5	19.7	1080	Boston-Logan	0.01	0.01	Dry
1.15	270	50*	42.276164	-71.037225	occasional fine soap s	Sagamore Creek outf	13	18.5	*23.3mS	Boston-Logan	0.01	0.01	Dry
NA	NA	50*	42.276174	-71.037325	groundwater seep, wh	about 50ft downstrean	na	na	na	Boston-Logan	0.01	0.01	Dry

1.65	530	50*	42.277357	-71.008933	barnacle encrusted ou	outfall south of two ya	25	18.8	39.10m	Boston-Logan	0.01	0.01	Dry
0.84	210	50*	42.277357	-71.008933	as tide comes in it arr	outfall between WollB	12	19.4	*30.7m	Boston-Logan	0.01	0.01	Dry
0.8	110	50*	42.278672	-71.012859	duplicate of WollB1		na	na	na	Boston-Logan	0.01	0.01	Dry
0.76	100	50*	42.278672	-71.012859	water drops into smal	outfall between yacht	1.9	19	4172	Boston-Logan	0.01	0.01	Dry
0.07	ND	0.15	41.92559804	-70.61841863	lots of eel grass, used	downstream Eel River	0.1	22.8	142.9	Plymouth	0.01	0.01	Dry
ND	ND	0.20	41.92519001	-70.61918863	River: about 1.5' deep	downstream of bridge	0.1	22.6	145.3	Plymouth	0.01	0.01	Dry
~0.05	ND	ND	41.92519001	-70.61918863	duplicate of Eel2		na	na	na	Plymouth	0.01	0.01	Dry
0.1	ND	0.35	41.92517001	-70.61942993	some grass was gorw	upstream of Sandwich	0.1	21.5	187.7	Plymouth	0.01	0.01	Dry
0.08	4.2	0.60	41.92538204	-70.61810863	dead mouse floating i	directly behind 132 sa	0.2	17.6	326.3	Plymouth	0.01	0.01	Dry
0.15	NA	ND	41.92480601	-70.61774371	very akward sampling	Clean-out pipe, behind	0.2	20.4	315.3	Plymouth	0.01	0.01	Dry
0.12	3.4	1.05	42.266756	-71.094794	green algae and greyi	(actually NR104?) Bel	0.5	18.2	910	Boston-Logan	0.77	0.77	Wet
ND	ND	0.50	42.266710	-71.094816	waded into river for sa	just upstream of Dent	0.2	24.6	427.7	Boston-Logan	0.77	0.77	Wet
ND	3.7	1.65	42.251173	-71.128400	lots of trash in stream	parked off Reservatio	0.3	25.9	625	Boston-Logan	0.77	0.77	Wet
0.05	8.7	21.90	42.247956	-71.125339	difficult access, white	parked off Glenwood.	0.2	20.5	476.6	Boston-Logan	0.77	0.77	Wet
0.66	7.4	14.25	42.244799	-71.126989	green algae in outfall,	behind tennis courts o	0.5	18.4	968	Boston-Logan	0.77	0.77	Wet
0.74	7.2	14.80	42.244799	-71.126989	Duplicate of NR162		na	na	na	Boston-Logan	0.77	0.77	Wet
0.14	4.8	1.15	42.242826	-71.127704	some gray bacteria, g	behind Stop & Shop o	1.2	22.4	24.11	Boston-Logan	0.77	0.77	Wet
0.08	ND	1.00	42.242874	-71.127669	Mainstem Neponset R	behind Stop & Shop o	0.2	25	486	Boston-Logan	0.77	0.77	Wet
0.12	4.6	2.95	42.513171	-71.142649	1 ft deep at sampling	Halls Brook behind 18	0.4	14.6	780	Bedford	0.01	0.01	Dry
0.74	7.3	26.60	42.513291	-71.142539	Unnamed stream just	upstream of Halls Broo	0.5	14.4	932	Bedford	0.01	0.01	Dry
1.26	4.6	31.50	42.518739	-71.146411	Halls Brook across fro	Southeast of Landfill E	0.5	14	9.17	Bedford	0.01	0.01	Dry
1.24	4.4	NA	42.518739	-71.146411	duplicate of Mys08		na	na	na	Bedford	0.01	0.01	Dry
0.73	7.3	28.80	42.51858	-71.146281	after confluence of La	Just south of Landfill E	0.5	14.2	955	Bedford	0.01	0.01	Dry
1.28	4.4	27.80	42.520981	-71.147709	Upstream of Mys08 w	Low flow, light brown	0.5	16.1	935	Bedford	0.01	0.01	Dry
0.31	5.2	3.00	42.3628777	-71.1509558	Sawins Brook, sample	Near lot off Arsenal S	0.8	16.2	1521	Boston-Logan	0	0	Dry
NA	NA	16.70	42.3636533	-71.1511559	pipe discharging to Sa	about 30 feet upstrear	0.3	15.3	806	Boston-Logan	0	0	Dry
0.09	3.1	1.05	42.3599847	-71.1809755	"New81" waded to lef	Outfall to Charles off	0.6	14.6	1308	Boston-Logan	0	0	Dry
0.14	ND	0.75	42.3646351	-71.1892039	Used waders	Laundry Brook off Cal	0.4	18	830	Boston-Logan	0	0	Dry
0.14	ND	na	42.3646351	-71.1892039	Duplicate of Laund01		na	na	na	Boston-Logan	0	0	Dry
0.14	3.6	1.35	42.3600600	-71.2169465	taken 6' downstream	Cheessecake Brook n	0.7	16.7	1378	Boston-Logan	0	0	Dry
0.17	4.4	2.20	42.3730420	-71.2283524	shallow stream, collec	Beaver Brook near co	0.5	16.7	1035	Boston-Logan	0	0	Dry
0.11	7.9	6.90	42.4277872	-71.2050922	Lots of duck weed on	Off Mass Ave	0.4	17.1	819	Boston-Logan	0	0	Dry
0.19	6.1	4.55	42.4503760	-71.2202638		Near corner Grant St	0.4	15.8	859	Boston-Logan	0	0	Dry
0.41	7.8	7.80	42.659814	-71.318830	large duckbill coverin	Beaver Brook outfall	0.1	18.2	468.5	Lawrence	0	0	Dry
NA	NA	1.45	42.659837	-71.318833	sample taken just ups	Beaver Brook Mainste	0.2	16.9	358.8	Lawrence	0	0	Dry
0.15	ND	0.60	42.650395	-71.314502	west channel sampled	off Suffolk Street, clim	0.1	19.1	170	Lawrence	0	0	Dry
0.16	ND	0.10	42.643823	-71.307889	sampled open channe	downstream from Cen	0.1	19.2	168.7	Lawrence	0	0	Dry
0.11	4.1	2.25	42.633655	-71.302505	overturned barrel and	River Meadow Brook	0.3	17.5	714	Lawrence	0	0	Dry
0.15	4	ND	42.633655	-71.302505	Duplicate of RMB1		na	na	na	Lawrence	0	0	Dry
NA	NA	1.10	42.631057	-71.305968	1ft at deepest, used re	sampled downstream	0.3	17.6	711	Lawrence	0	0	Dry
0.17	7.2	7.15	42.638346	-71.343658	Flow from 2 large me	Black Brook off Middle	0.6	17.8	1145	Lawrence	0	0	Dry
NA	NA	8.20	42.634459	-71.349404	rocks covered w/ alga	Black Brook off Baldw	0.5	19.5	1077	Lawrence	0	0	Dry
0.15	8.1	3.40	42.520940	-71.104975	about 6 inches deep (	corner of Washington	0.9	16.7	1682	Lawrence	0.01	0.01	Dry
0.2	6.9	4.35	42.65447823	-71.14660047	hiked down hill sampl	5 Dundee Park near Y	0.4	15.1	806	Lawrence	0.01	0.01	Dry
0.19	4.5	0.60	42.65573487	-71.13334922	some deeper pools	Off Chestnut Street, n	0.3	15.1	530	Lawrence	0.01	0.01	Dry
0.25	4.8	0.35	42.67330118	-71.14974812	2-3 feet deep	Across from Shawshe	0.3	15.9	537	Lawrence	0.01	0.01	Dry
NA	NA	NA	42.67247656	-71.15143865	lots of bacterial growt	Hussy Brook - sample	0.3	15.5	539	Lawrence	0.01	0.01	Dry
0.14	5.5	2.35	42.695971	-71.1455601	stream scoured, lots o	South Lawrence Elem	0.6	15.1	1158	Lawrence	0.01	0.01	Dry
0.1	5.8	2.30	42.695971	-71.1455601	duplicate of SLE3		na	na	na	Lawrence	0.01	0.01	Dry
0.32	28	34.90	42.70991636	-71.15129912	video taken of what lo	pipe off Lawrence Hos	0.4	19.1	888	Lawrence	0.01	0.01	Dry
0.14	8.5	0.80	42.633655	-71.302505	overturned barrel and	River Meadow Brook	0.5	16	1018	Lawrence	0.01	0.01	Dry
0.18	6.9	~7.5	42.251003	-71.051930	sample collected whe	about 1yard from outf	0.4	14.9	712	Boston-Logan	0.51	0.57	Wet
0.21	8.9	~10.5	42.24781922	-71.05546405	collected close to outfall in pool		0.5	15.4	933	Boston-Logan	0.51	0.57	Wet
0.1	2.8	~0.85	42.20481659	-71.19661788	sampled right culvert		0.6	16.7	1146	Norwood	0.54	0.63	Wet
0.16	3.3	~1.6	42.20509841	-71.964841	sample collected before two steams mix		0.2	15.5	515	Norwood	0.54	0.63	Wet
0.07	3.8	ND	42.204594	-71.198514	sample collected near culvert		0.3	17.4	712	Norwood	0.54	0.63	Wet
0.08	3.8	~1.7	42.204594	-71.198514	duplicate of PB02		0.3	17.4	712	Norwood	0.54	0.63	Wet
NA	NA	1.8	42.418716	-71.151379	just downstream of br	Mill Brook @ Mystic S	0.5	11.3	910	Bedford	0	0	Dry
NA	4.2	6.35	42.418597	-71.152247	Sample taken from flo	Mill Brook @ opening	0.5	11.7	921	Bedford	0	0	Dry
NA	NA	NA	42.41803618	-71.15649782	Start of culvert under	Mill Brook near bike p	0.4	11.6	884	Bedford	0	0	Dry
NA	3.6	1.05	42.41800384	-71.1599327	two 3 foot culverts an	Near Arlington High S	0.4	11.6	859	Bedford	0	0	Dry

NA	3.6	2.45	42.41800384	-71.1599327	duplicate of AHS		na	na	na	Bedford	0	0	Dry
NA	3.4	2.05	42.42030025	-71.16460763	6ft stone channel, foo	Mill Brook instream	0.4	12.1	755	Bedford	0	0	Dry
NA	NA	NA	42.42032496	-71.16473294	moss/algae growing o	Outfall to Mill Creek	0.6	10.4	1200	Bedford	0	0	Dry
NA	8.3	6	42.42321769	-71.17286099	lots of green algae inside pipe		1.4	11.4	2700	Bedford	0	0	Dry
NA	6.4	4.15	42.42389075	-71.17374022	fresh smelling	Off Ryder Street lot	1.1	12.8	2188	Bedford	0	0	Dry
NA	NA	2.65	42.42388575	-71.17372022	hole in wall/seep	East side of culvert wa	0.5	10.0	1394	Bedford	0	0	Dry
NA	3.8	1.25	42.42440075	-71.17458522	near Out of the Wood	Outfall to Mill Brook, E	0.7	10.1	1450	Bedford	0	0	Dry
NA	ND	0.65	42.42443302	-71.17464016	waders, culvert just up	Outfall to Mill Brook, V	0.6	9.8	1280	Bedford	0	0	Dry
NA	3.3	0.75	42.42475049	-71.18132349	Park St behind Penzy	Mill Brook main stem,	0.3	14.1	612	Bedford	0	0	Dry
NA	4.9	2	42.44732536	-71.13860428	near gauging station	Sampled above dam	0.4	10.3	821	Bedford	0	0.02	Dry
NA	NA	NA	42.45109149	-71.13689456	waterfall ~250ft upstre	Waterfield St bridge	0.4	10.2	806	Bedford	0.16	0.18	Wet
NA	NA	NA	42.45284032	-71.13542441	used reach and wade	Mt Vernon St bridge b	0.4	10.2	794	Bedford	0.16	0.18	Wet
NA	NA	NA	42.45571045	-71.13669402	used reach	Behind Stop & Shop	0.3	12.6	561	Bedford	0.16	0.18	Wet
NA	5.2	2.25	42.4564901	-71.13647243	outfall on far left looki	Skillings road from un	0.4	9.1	907	Bedford	0.16	0.18	Wet
NA	5.4	1.75	42.4564901	-71.13647243	duplicate of Skill01		na	na	na	Bedford	0.16	0.18	Wet
NA	NA	NA	42.45646101	-71.13649804	very low flow - if any	small pipe exiting nea	0.4	9.1	908	Bedford	0.16	0.18	Wet
NA	5.1	1.4	42.4608915	-71.13718955	just downstream near	Swanton Street bridge	0.4	9.1	905	Bedford	0.16	0.18	Wet
NA	5.6	2.6	42.463455	-71.149258	sampled far right of c	Russel Brook at the e	0.5	9.7	965	Bedford	0.16	0.18	Wet
NA	11	5.7	42.47549599	-71.15991194	rust/orange stain on r	main stream outfall on	0.8	19.8	1655	Bedford	0.17	0.19	Wet
NA	NA	NA	42.48090577	-71.15755569	slightly crushed small	Off Harrison Ave near	0.5	12.2	1070	Bedford	0.17	0.19	Wet
NA	15	4.75	42.4809258	-71.15751796	Main outfall	Off Harrison Ave near	1.3	7.9	2495	Bedford	0.17	0.19	Wet
NA	9.7	3.35	42.47993991	-71.15617846	very slow flow	opposite side of ballpa	0.8	12.5	1578	Bedford	0.17	0.19	Wet
NA	4.3	0.9	42.42029396	-71.16475294	Just upstream of Grov	Mill Brook instream	0.4	15.9	850	Bedford	0.12	0.12	Wet
NA	NA	NA	42.42032496	-71.16473294	moss/algae growing o	Outfall to Mill Creek	0.7	12.4	1307	Bedford	0.12	0.12	Wet
NA	4.2	1.8	42.42029396	-71.16475294	duplicate of Grove01a		na	na	na	Bedford	0.12	0.12	Wet
NA	NA	NA	42.422035	-71.170577	needed ladder/waders	At end of Robin Stree	0.8	12.5	1533	Bedford	0.12	0.12	Wet
NA	NA	NA	42.420417	-71.168133	lots of suspended sed	Mill Brook instream ne	0.4	16.1	847	Bedford	0.12	0.12	Wet
NA	NA	NA	42.42389075	-71.17374022	1/2 the flow from last	Off Ryder Street lot	1.1	13.6	2257	Bedford	0.12	0.12	Wet
NA	NA	NA	42.42440075	-71.17458522	near Out of the Wood	Outfall to Mill Brook, E	0.7	11.7	1407	Bedford	0.12	0.12	Wet
NA	3.9	1.35	42.424465	-71.174718	neighbor stopped ove	Just upstream of Ryde	0.4	17	729	Bedford	0.12	0.12	Wet
NA	3.8	1.95	42.42475049	-71.18132349	Park St behind Penzy	Mill Brook main stem,	0.3	17.6	714	Bedford	0.12	0.12	Wet
NA	3.7	2	42.425348	-71.186230	PPCP bottle broke, re	behind 1395 Mass Av	0.3	18.2	684	Bedford	0.12	0.12	Wet
NA	4.1	2.3	42.426894	-71.189660	Drake' slow flow, just	Between condo comp	0.4	15.8	726	Bedford	0.12	0.12	Wet
NA	NA	NA	42.426882	-71.189584	just before confluence	just downstream of Ar	0.3	20.2	660	Bedford	0.12	0.13	Wet
NA	6.3	1.2	42.4277872	-71.2050922	lots of duck weed on s	Mass ave across from	0.5	18	946	Bedford	0.12	0.13	Wet
NA	NA	NA	42.4503760	-71.2202638		Near corner Grant St	0.4	12.3	741	Bedford	0.12	0.13	Wet
NA	NA	0.4	42.513171	-71.142649	machinery stored nea	Halls Brook behind 18	0.4	11.1	875	Bedford	0	0	Dry
NA	NA	11.3	42.513291	-71.142539	sampled before timbe	Unnamed stream just	0.4	10.1	839	Bedford	0	0	Dry
NA	NA	19.5	42.518563	-71.146526	Algae and oil on surfa	New Boston St where	0.4	9..9	815	Bedford	0	0	Dry
NA	NA	20	42.518739	-71.146411	not as strong smelling	Opposite stream from	0.4	10.2	896	Bedford	0	0	Dry
NA	NA	3.85	42.51422481	-71.14551115	flow on downstream s	sampled from left ope	0.4	11.3	878	Bedford	0	0	Dry
NA	NA	3.55	42.51422481	-71.14551115	duplicate of Torr01		0.4	11.3	878	Bedford	0	0	Dry
NA	NA	2.65	42.51048269	-71.15492526	fair amount of litter	upstream of road cros	0.4	12.1	869	Bedford	0	0	Dry
NA	NA	2.7	42.5086557	-71.1583669	construction on bridge	bottom of stone run of	0.5	12.7	987	Bedford	0	0	Dry
NA	NA	NA	42.25766282	-71.00896849	sampled stream before bridge		0.2	12.2	360.6	Milton-Blue Hi	1.5	0	Wet
NA	NA	0.05	42.25766282	-71.00896849	duplicate of FBP02		na	na	na	Milton-Blue Hi	1.5	0	Wet
NA	NA	ND	42.25627321	-71.02067588	onleft side of culvert		0.2	12.3	428.5	Milton-Blue Hi	1.5	0	Wet
NA	NA	10.8	42.25620978	-70.99314315			8.1	13.3	14.1	Milton-Blue Hi	1.5	0	Wet
NA	NA	35.80	42.27602123	-71.0320993	sampled inflow from culvert		4.3	12.6	7.78	Milton-Blue Hi	1.5	0	Wet
NA	NA	11.3	42.277357	-71.008933	outfall across from cla	just south of WollB1 o	0.3	12.4	675	Milton-Blue Hi	1.5	0	Wet
NA	NA	8.65	42.278672	-71.012859		outfall between yacht	3.5	12.8	4.87	Milton-Blue Hi	1.5	0	Wet
NA	NA	NA	42.27361693	-71.03395231	5ft from outflow		1.1	13.1	1708	Milton-Blue Hi	1.5	0	Wet
NA	NA	2.2	42.39528219	-71.17631914	duplicate of WEB013		na	na	na	Bedford	0	0	Dry
NA	NA	1.1	42.39528219	-71.17631914	lots of suspended sed	Wellington Brook	0.7	12.6	1433	Bedford	0	0	Dry
NA	NA	NA	42.4225696	-71.14928822		Mystic Valley Parkway	0.6	13.8	1269	Bedford	0	0	Dry

NA	NA	0.25	42.41770489	-71.1574838	may be multiple pipe	pipe discharging to Mi	0.1	17.8	237	Bedford	0	0	Dry
NA	NA	NA	42.42471486	-71.17533266	collected from seep under pipe opening		1	18.1	1869	Bedford	0	0	Dry
NA	NA	1.05	42.426894	-71.189660	slow flow, just upstrea	Between condo comp	0.5	21.5	665	Bedford	0	0	Dry
NA	NA	0.18	42.426882	-71.189584	before confluence wit	just downstream of Ar	0.3	21.2	667	Bedford	0	0	Dry
NA	NA	2.45	42.42645629	-71.19436402		pipe discharging unde	1.3	17.6	2482	Bedford	0	0	Dry
NA	NA	ND	42.42648362	-71.19440958	6ft wide, rocky stream	Bow street, just downs	0.3	18.3	537	Bedford	0	0	Dry
NA	NA	1.45	42.42834205	-71.19676456	36" double culvert col	Just downstream of F	0.2	19.3	513	Bedford	0	0	Dry
NA	NA	0.05	42.42901218	-71.1975303	tributary, thick film co	Walked ~100yards up	0.2	20.9	362.9	Bedford	0	0	Dry
NA	NA	5.95	42.39988394	-70.99242127	duplicate of WashN01		na	na	na	Boston-Logan	0.08	0.43	Wet
NA	NA	6.90	42.39988394	-70.99242127	outfall about 1ft under	Behind Shaw's back c	0.5	16.9	993	Boston-Logan	0.08	0.43	Wet
NA	NA	11	42.39990454	-70.99237953	just upstream of Was	Sales Creek	1.3	18.2	2527	Boston-Logan	0.08	0.43	Wet
NA	NA	ND	42.40260397	-71.00346085	off 1A by esquire club	Green Street in Rever	0.5	17.8	943	Boston-Logan	0.08	0.43	Wet
NA	NA	17.7	42.3830573	-71.03016877	40min before low tide	Condor Street outfall,	23.3	16.1	36.7mS	Boston-Logan	0.08	0.43	Wet
NA	NA	50*	42.36126566	-71.05083507	near Christopher Colu	Climbed down betwee	26.7	16.3	44.67mS	Boston-Logan	0.08	0.43	Wet
NA	NA	35.50	42.3854766	-71.06883007	Appeared to be mixed	Behidnd Schraft's buil	18.7	18.7	30.85mS	Boston-Logan	0.08	0.43	Wet
NA	NA	33.90	42.38549883	-71.06886597	Outflow w/some tidal	Behidnd Schraft's buil	17.2	19.5	28.5mS	Boston-Logan	0.08	0.43	Wet
NA	NA	15.9	42.40367	-71.020987	significant gray bacte	privately owned, drain	0.5	16.2	1688	Boston-Logan	0.08	0.43	Wet
NA	NA	3	42.70688	-71.1476552	SLE3a' significant wh	South Lawrence Elem	0.5	14.6	1045/83	Lawrence	0.04	0.04	Dry
NA	NA	2.35	42.70688	-71.1476552	significant white/tan/g	South Lawrence Elem	na	na	na	Lawrence	0.04	0.04	Dry
NA	NA	1.25	42.70688	-71.1476552	SLE3b' Nitrate: 2. Nitr	South Lawrence Elem	0.5	14.83	984/790	Lawrence	0.04	0.04	Dry
NA	NA	1.65	42.70688	-71.1476552	SLEc' Lawrence DPW	South Lawrence Elem	0.5	14.7	957/747	Lawrence	0.04	0.04	Dry
NA	NA	NA	42.70991636	-71.15129912	samples sent for PCR	pipe off Lawrence Hos	0.1	18.8	12.18/18	Lawrence	0.04	0.04	Dry
NA	NA	12.4	42.465157	-71.392813	pool at base of culver	<1/2 mile from bridge	0.2	27.6	90.3/37	Bedford	0	0	Dry
NA	NA	ND			Effluent of a membrane bioreactor			24	495.8	Falmouth	0.12	0.21	Wet
NA	NA	25.10			6" below surface, 6"sa	tip pans (24/day - 1galeach) sto		22.9	479	Falmouth	0.12	0.21	Wet
NA	NA	38.70			12" below surface	12"sand		21.1	602	Falmouth	0.12	0.21	Wet
NA	NA	ND						21.6	351	Falmouth	0.12	0.21	Wet
NA	NA	ND			24" below surface			20.1	571	Falmouth	0.12	0.21	Wet
NA	NA	2.5			Influent			19.3	479	Falmouth	0.12	0.21	Wet
NA	NA	36.80			12" with air			20.3	579	Falmouth	0.12	0.21	Wet
NA	NA	11.5								Falmouth	0.12	0.21	Wet
NA	NA	ND						20.3	606	Falmouth	0.12	0.21	Wet
NA	NA	NA	42.968332	-71.472794	Oil sheen across all ro	called EPA incident re	0.3	18.1	29/446.	Manchester	0	0	Dry
NA	NA	NA	42.985780	-71.469196	Strong musty odor, ta	sampled flow out of pi	1	17.6	934/165	Manchester	0	0	Dry
NA	NA	NA	42.998669	-71.468348	next to outfall 047, thi	outfall just north (adja	2.1	15.2	992/321	Manchester	0	0	Dry
NA	NA	NA	42.998660	-71.468348	steam coming out of p	just south of 047N, by	2.5	17.5	4750	Manchester	0	0	Dry
NA	NA	NA	43.209555	-71.531041	thick black/orange coating on bottom, tadpol		0.6	16.7	1204	Concord	0	0	Dry
NA	NA	NA	43.21004	-71.530441	grated outfall, flow is approx. 10 gal/min poo		0.7	14	1070	Concord	0	0	Dry
NA	NA	NA	43.209555	-71.531041	duplicate of Mer4120		0.6	16.7	1204	Concord	0	0	Dry
NA	NA	NA	43.193970	-71.542492	midstream sample ne	Concord District Cour	0.7	22.9	1458	Concord	0	0	Dry
NA	NA	NA	43.199674	-71.548718	Just upstream of Clin	off Pleasant Street	0.5	23.1	1080	Concord	0	0	Dry
NA	NA	NA	42.38549883	-71.06886597	Behidnd Schraft's bui	Sampled 10 min befo	22.6	20.8	35.83mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.3854766	-71.06883007	Behidnd Schraft's bui	East of 29J212	21.7	21.8	34.4mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.38549883	-71.06886597	duplicate of 29J212		22.6	20.8	35.83mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.466942	-70.92203147	Stacey Brook, Swamp	Met Town Engineer, V	0.3	21.9	621	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.466942	-70.92203147	Stacey Brook, Lynn		0.4	21.9	776	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.51380064	-70.88804384	Palmer Cover, Salem	White bacterial growth	1.5	21.1	4209	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.54714736	-70.86166491	Lynch Park, Beverly N	sampled 2hrs after low	0.7	17.6	1339	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.55097916	-70.8503408	Down Brackenbury La	Brackenbury Beach	10	18.6	16.91mS	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.55443402	-70.84983196	sampled under bridge	lots of ducks upstream	0.2	20.5	409.2	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.54639263	-70.8616749	Lynch Park, Beverly	Small pipe exiting just	1.8	19.3	7.77mS	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.46084009	-71.13716417	Downstream of Swan	USGS gauge @ 0.9, g	0.5	20.6	1025	Boston-Logan	0	0	Dry
NA	NA	NA	42.469411	-71.1252171	Downstream of Wash	Water almost opaque	0.5	22	1083	Boston-Logan	0	0	Dry
NA	NA	NA	42.4694521	-71.1249571	Outfall upstream of W	OF more than 1/2 full	0.5	21.4	1004	Boston-Logan	0	0	Dry
NA	NA	NA	42.477141	-71.1176671	(previously '1Merrell')	low/slow flow could no	0.5	21.6	1096	Bedford	0.01	0.13	Dry

NA	NA	NA	42.4770646	-71.1175936	(previously '1Kraft')Sw	2 pipes just upstream	0.7	21.5	1366	Bedford	0.01	0.13	Dry
NA	NA	NA	42.491580	-71.128834	(previously 'Sal')1921	USGS field team mea	0.5	20.9	1086	Bedford	0.01	0.13	Dry
NA	NA	NA	42.50317874	-71.13529801	Mishawum Bridge, do	lots of moss on rocks/	0.4	23.2	1035	Bedford	0.01	0.13	Dry
NA	NA	NA	42.5026954	-71.1353458	Outfall downstream o	Raccoon prints in pipe	1.3	19.6	2743	Bedford	0.01	0.13	Dry
NA	NA	NA	42.5026965	-71.1351128	Stormdrain cover tipp	gray plaque at bottom	na	na	na	Bedford	0.01	0.13	Dry
NA	NA	NA	42.513171	-71.142649	1 ft deep at sampling	Halls Brook behind 18	0.4	19.6	873	Bedford	0.01	0.13	Dry
NA	NA	NA	42.513291	-71.142539	Unnamed stream just	Very low flow	0.4	23.4	897	Bedford	0.01	0.13	Dry
NA	NA	NA	42.513291	-71.142539	duplicate of DRR1		0.4	23.4	897	Bedford	0.01	0.13	Dry
NA	NA	NA	42.38549883	-71.06886597	Behidnd Schraft's bui	Sampled 10 min befo	28.3	18.9	44.82mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.3854766	-71.06883007	Behidnd Schraft's bui	East of 29J212	28.2	18.6	43.67mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.288373	-71.092879	Canterbury Brook, Bo	fine sediments on bot	0.2	20	344.4	Boston-Logan	0	0	Dry
NA	NA	NA	42.288373	-71.092879	Duplicate of CantB		0.2	20	344.4	Boston-Logan	0	0	Dry
NA	NA	NA	42.308203	-71.12058	Arnold Arboretum off	sides of outfall deterio	0.7	13.6	1304	Boston-Logan	0	0	Dry
NA	NA	NA	42.340354	-71.099856	Muddy River in Back	Sampled just downstr	0.5	20.5	1058	Boston-Logan	0	0	Dry
NA	NA	NA	42.330289	-71.114017	Two stone 5' semi-circ	across from 33 Pondv	0.5	25.4	966	Boston-Logan	0	0	Dry
NA	NA	NA	42.326763	-71.114752	Off Riverdale Pkwy in	downstream of outfall	0.9	15.1	1738	Boston-Logan	0	0	Dry
NA	NA	NA	42.321703	-71.119080	Parked on Chestnut S	just downstream from	0.3	27.1	606	Boston-Logan	0	0	Dry
NA	NA	NA	42.70991636	-71.15129912	samples sent for PCR	pipe off Lawrence Hos	1.4	20.1	2644	Lawrence	0	0	Dry
NA	NA	NA	42.70995636	-71.15139912	mainstem Spickett riv	lots of growth on botto	0.3	22.6	535	Lawrence	0	0	Dry
NA	NA	NA	42.713273	-71.158219	upstream of Jackson	heavy sedimentation o	0.3	23.1	530	Lawrence	0	0	Dry
NA	NA	NA	42.713893	-71.172624	mainstem Spickett riv	sampled at the end of	0.3	23.2	529	Lawrence	0	0	Dry
NA	NA	NA	42.70688	-71.1476552	significant white/tan/g	South Lawrence Elem	0.6	15.6	1120	Lawrence	0	0	Dry
NA	NA	NA	42.696984	-71.143777	Mainstem Shawsheen	river sample	na	na	na	Lawrence	0	0	Dry
NA	NA	NA	42.67330118	-71.14974812	2-3 feet deep	Across from Shawshe	0.2	24.3	471.5	Lawrence	0	0	Dry
NA	NA	NA	42.67247656	-71.15143865	lots of bacterial growt	Hussy Brook - sample	0.3	24.7	676	Lawrence	0	0	Dry
NA	NA	NA	42.67247656	-71.15143865	duplicate of Huss02		0.3	24.7	676	Lawrence	0	0	Dry
NA	NA	NA	42.4787841	-71.1131562	Sweetwater Brook we	behind service master	0.6	21.4	1193	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.4826072	-71.1046187	Cl2 exceeded holding	Unnamed tributary to	0.6	15.1	1280	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.483930	-71.1039388	Cl2 exceeded holding	Sweetwater Brook @	0.7	18.2	1432	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.484141	-71.103935	Inside culvert upstrea	sampled largest pipe -	0.5	19.4	950	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.48607	-71.0976008	Walked upstream fron	Large box culvert cov	0.8	16.1	1632	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.48607	-71.0976008	duplicate of Elm2		0.8	16.1	1632	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.490277	-71.101799	Cl2 exceeded holding	Off Toms Way in Ston	0.9	18.1	1701	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.513171	-71.142649	1 ft deep at sampling	Halls Brook behind 18	0.4	20.6	848	Bedford	0	0.1	Dry
NA	NA	NA	42.51339681	-71.14295383	outfall about 100ft upstream from Halls2 loca		0	24.8	50.3	Bedford	0	0.1	Dry
NA	NA	NA	42.51079059	-71.14820571	most of flow coming f	lots of frogs in stream	1	23.5	1960	Bedford	0	0.1	Dry
NA	NA	NA	42.51333787	-71.14802303	upstream of small ped	end of 2nd st, asked #	0.4	22.4	825	Bedford	0	0.1	Dry
NA	NA	NA	41.71543572	-71.36069556	sampled on outgoing	sampled between 2 ro	29.6	24.6	45.72mS	Providence TF	0	0	Dry
NA	NA	NA	41.71380905	-71.36475741		walked up 20 ft from b	20.6	22.4	32.83mS	Providence TF	0	0	Dry
NA	NA	NA	41.7135672	-71.36551541	Mill creek, 0.67 ng/L Sulfamethoxazole was		20.7	23.5	33.13mS	Providence TF	0	0	Dry
NA	NA	NA	41.71213909	-71.37518941	leaky storm drain pipe under bridge, layer of		1.3	21.1	2447	Providence TF	0	0	Dry
NA	NA	NA	41.71205509	-71.37524941	bacteria and kits only		na	na	na	Providence TF	0	0	Dry
NA	NA	NA	41.71372754	-71.37889632	downstream from roa	lockwood brook near b	0.2	20.2	314.2	Providence TF	0	0	Dry
NA	NA	NA	41.70908196	-71.38289364	racoon prints on bank	off westshore drive up	0.2	21.6	329	Providence TF	0	0	Dry
NA	NA	NA	41.70708421	-71.38031976	double culvert under t	upstream side of bridg	0.2	16.9	435.9	Providence TF	0	0	Dry
NA	NA	NA	41.71964024	-71.38696064	bacteria and kits only	upstream side of bridg	0.1	20.9	270	Providence TF	0	0	Dry
NA	NA	NA	41.71935982	-71.38618735	epipe designed to tak	at the end of emerson	0.1	20.1	225.8	Providence TF	0	0	Dry
NA	NA	NA	41.71461744	-71.38035705	bact and kits only	Meadowbrook road ou	0.1	22.2	173.9	Providence TF	0	0	Dry
NA	NA	NA	41.73964713	-71.39538267	1-2 in of green algae	end of sweetfern drive	0.1	18.4	220.9	Providence TF	0	0	Dry
NA	NA	NA	41.73964713	-71.39538267	duplicate of SweetF		0.1	18.4	220.9	Providence TF	0	0	Dry
NA	NA	NA	43.556117	-71.500635	Ahern State Park Bea	pre-storm sample. Rig	0	21.7	90.8	Laconia	0.01	0.02	Dry
NA	NA	NA	43.557084	-71.494182	Facility pipe to stream	Pre-storm sample.	0.1	16.8	184.6	Laconia	0.01	0.02	Dry
NA	NA	NA	43.556117	-71.500635	Ahern State Park Bea	2nd sample, taken du	0	89.3	21.7	Laconia	0.13	0.13	Wet
NA	NA	NA	43.556520	-71.500969	Governor Brook	No distinct flow, light o	0.1	16.3	198.8	Laconia	0.13	0.13	Wet
NA	NA	NA	43.556625	-71.499442	Road crossing upstrea	orange/green growth o	0.2	15.9	341.6	Laconia	0.21	0.21	Wet

NA	NA	NA	43.557084	-71.494182	Facility pipe to stream	same sample location	0	17.6	54	Laconia	0.21	0.21	Wet
NA	NA	NA	43.557084	-71.494182	Duplicate of 996-F		0	17.6	54	Laconia	0.21	0.21	Wet
NA	NA	NA	43.559021	-71.494120	sampled facility pipe b	sampled during storm	0	18.5	13.5	Laconia	0.21	0.21	Wet
NA	NA	NA	43.266493	-71.483356			0	15.5	14.5	Laconia	0.44	0.44	Wet
NA	NA	NA	43.209555	-71.531041			0	18.3	18.3	Concord	1.02	1.04	Wet
NA	NA	NA	42.40269115	-71.00375656	Cloudy; algae on rock	Sampled under pedes	0.9	21	1840	Boston-Logan	0	0	Dry
NA	NA	NA	42.40367	-71.020987	significant gray bacte	privately owned, drain	1	19.6	1850	Boston-Logan	0	0	Dry
NA	NA	NA	42.403340	-71.020587	gray bacteria plaque,	(Gillooly) Cabot St be	2	18.1	3750	Boston-Logan	0	0	Dry
NA	NA	NA	42.42547262	-71.02662504	walked upstream from	Sampled about 30ft u	2.4	21.5	4509	Boston-Logan	0	0	Dry
NA	NA	NA	42.42105874	-71.02615376	could see light at othe	Corner of Sargent and	0.3	18.3	687	Boston-Logan	0	0	Dry
NA	NA	NA	42.4922811	-70.85511019	near boat launch, sam	outfall across causewa	3.8	19.6	6.92mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.4922811	-70.85511019	duplicate of Dlaunch		3.8	19.6	6.92mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.4891136	-70.84335607	green alge at bottom	Ocean Ave off Marble	0.3	19	680	Boston-Logan	0	0	Dry
NA	NA	NA	42.51462618	-70.8462946	Grace Oliver Beach S	Corner of Crowninshie	0.2	21	632	Boston-Logan	0	0	Dry
NA	NA	NA	42.51447501	-70.86599014	Stamski Beach	sample 20ft from shor	28.3	23.5	43.87mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.3628777	-71.1509558	Sawins Brook	small trib flowing ~100	0.3	14.1	571	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.3628777	-71.1509558	duplicate of SawB01		0.3	14.1	571	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364451	-71.154419	downstream side of A	1 ft deep, started sprin	0.7	15.9	1407	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364313	-71.154481	Arlington St culvert - f	~30ft upstream, 8" pip	0.7	16	1414	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364256	-71.154481	Arlington St culvert - d	no inlet pipes can be s	0.7	15.9	1417	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364351	-71.154519	Arlington St culvert - f	sampled far rt of culve	0.7	15.9	1354	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.364037	-71.183908	Watertown outfall #13	weather - still sprinklin	0.1	17.8	260.3	Boston-Logan	0.03	0.52	Wet
NA	NA	NA	42.364489	-71.184223	Watertown outfall #12	some small fish, could	0.5	16.8	1012	Boston-Logan	0.03	0.52	Wet
NA	NA	NA	42.364774	-71.184952	Watertown outfall #11	outfall opening under	0.6	16.2	1168	Boston-Logan	0.03	0.52	Wet
NA	NA	NA	42.364733	-71.189067	Laundry Brook	sampled just inside op	0.3	15.5	565	Boston-Logan	0.03	0.52	Wet
NA	NA	NA	42.367449	-71.198957	culvert on right, not a lot of flow		0.7	18.1	1348	Boston-Logan	0.04	0.53	Wet
NA	NA	NA	42.367489	-71.198853	About 1ft of outfall un	can hear running wate	0.7	17.7	1299	Boston-Logan	0.04	0.53	Wet
NA	NA	NA	42.4922811	-70.85511019	Sampled left culvert,	more flow than last tin	20.7	11.9	33.13mS	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.4922811	-70.85511019	duplicate of Dlaunch		20.7	11.9	33.13mS	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.492557	-70.859421	Opened drain manhol	Brick sides w/hard bot	0.7	16.3	1483	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.493467	-70.860430	Opened drain manhol	used reach	0.4	16.3	743	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.492693	-70.860829	Opened drain manhol	gas odor	0.2	16	491.7	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.494598	-70.859443	Opened drain manhol	Sampled drain pipe en	0.2	16.9	440	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.496982	-70.856396	Opened drain manhol	double 36" pipes com	0.3	16.9	685	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.502967	-70.856873	Opened drain manhol	brick lined, used reach	0.4	16.4	744	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.506562	-70.856223	Opened drain manhol	Sampled main flow, 3	0.4	15.2	809	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.506562	-70.856223	Pipe flowing into storm	Started flowing after M	0.3	17.5	541	Boston-Logan	0	0.05	Dry
NA	NA	NA	42.278672	-71.012859	Pungent 'corpse-y' od	outfall between yacht	17.3	13.8	28.18mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.277357	-71.008933	trash in water and pla	just south of WollB1 o	13.2	14.3	24.89mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.277357	-71.008933	barnacle encrusted ou	outfall south of two ya	24.4	14.7	38.45mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.28935547	-71.04177324	Took Beach sample h	Tenean Beach, off Te	16.9	14.1	22.24mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.282780	-71.046962	large tide gate ~2? Ho	sampled center of sou	1.8	14.8	33.68mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.282780	-71.046962	duplicate of 10L094		1.8	14.8	33.68mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.282540	-71.046292	1/2 silted up	sampled about 10 fee	1.3	16.3	2514	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.275935	-71.031798	main chanell under he	previously named Sag	3.4	15.8	6.23mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.275941	-71.031767	green alge at bottom	former drainline that h	0	13.9	91.6	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.273601	-71.034010	large wooden tide gat	Previously named Sag	0.8	15.4	1590	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.273990	-71.030634	very dark sediments	Previously named Sag	1.5	16.9	33.20mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.299943	-71.006177	seep from sewage line to main interceptor on		8.4	17.9	834	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.299779	-71.005800	Sample collected at b	waded ~ 6 ft	37.1	13.7	43.74mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.277051	-71.009467	Wollaston Beach Sam	waded ~ 6ft between W	31.3	13.2	41.01mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.278670	-71.013452	Wollaston Beach Sam	waded ~ 6ft near Wol	31.3	13.6	47.97mS	Boston-Logan	0.13	0.14	Wet

RARE Stormwater Outfall Inspection & Samp ing Summary

Location				Outfall		Inspection					Sampling																												Coordinates		Comments	Additional Location Information	YSI Meter				Weather			Photo
																			PPCP ng/L												Cl2 (mg/l)				Flouride	Potassium (mg/L)											
Date	own	Site Name	ime	Pipe Mat	Dia (in)	Est Flow (gpm)	Odor	Color	urbidity	Floatables	E coli (MPN/100ml)	Entero (MPN/100ml)	Surfact (mg/l) Alpha	Surfact (mg/l) Field	NH3 (mg/l) Alpha	NH3 (mg/l) est St	Nitrate/Nitrite A pha	P EPA (µg/L)	Atenolol	Acetaminophen	Cotinine	D methylxanthine	Caffeine	Azithromycin	Primidone	Urobilin	Carbamazepine	Alpha Free	Alpha otal	Field	est St	Alpha	Alpha	Field	GPS North( )	GPS West ( )			Salinity ppt	emp C	Conductivity uS	Rain Gau Location	24hrs inche	48hrs inches	Wet/ Dry?	aken Y or N
/21/10	Arlington	91Mys	8:00	Open stre	na	na	none	eavy te	cloudy	me su	152	1	NA	~0.1	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	1.8	2. 18716	-71.151379	just downstream of bridge	Mill Brook @ Mystic Stree, next to 91	0.5	11 3	910	Bedford	0	0	Dry	Y
/21/10	Arlington	Mil B	8:10	Open stre	na	na	ong m	eavy te	irly cle	suds	395	52	0 06	~0.1	0.12	ND	1.1	28	.1	~20	3.1	6	3	0.7	ND (.0	90	1.	ND	ND	NA	ND	ND	.2	6.35	2. 18597	-71.1522 7	Sample taken from flow just below	Mill Brook @ opening in Cookes Hollo	0.5	11 7	921	Bedford	0	0	Dry	Y
/21/10	Arlington	MiBike	8:50	Stone (ins	10'X8	stream	odera	med te	clear	none	268	233	NA	~0.1	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 1803618	-71.156 9782	Start of culvert under park at Cooke	Mill Brook near bike path off Mill Stree	0.	11 6	88	Bedford	0	0	Dry	Y
/21/10	Arlington	AHS	9:05	Open stre	na	stream	none	ight te	clear	some	666	213	0 06	ND	ND	ND	0.95	37	.8	190	.6	12	70	1.2	ND (.0	1 00	0.93	ND	ND	NA	ND	ND	3.6	1.05	2. 180038	-71.1599327	two 3 foot culverts and one small <	Near Arlington High School o f Mi l Bro	0.	11 6	859	Bedford	0	0	Dry	Y
/21/10	Arlington	UR020	9:05	Open stre	na	stream	none	ight te	clear	some	15 9	173	0 06	ND	ND	ND	0.96	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND	ND	3.6	2. 5	2. 180038	-71.1599327	duplicate of AHS		na	na	na	Bedford	0	0	Dry	Y
/21/10	Arlington	Grove01	9: 0	Stone (ins	6'	stream	tural g	ight te	irly cle	me su	80	529	0 06	~0.1	0 079	ND	0.78	7	12	280	.7	30	170	2.9	ND (.0	2700	ND (0.)	ND	ND	NA	ND	ND	3.	2.05	2. 2030025	-71.16 60763	6ft stone channel, foot deep	Mill Brook instream	0.	12.1	755	Bedford	0	0	Dry	Y
/21/10	Arlington	GroveS	9: 5	Concrete	0	10-15	none	none	clear	none	7	7701	NA	0.2	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 2032 96	-71.16 7329	moss/algae growing on inside and	Outfa l to Mill Creek	0.6	10.	1200	Bedford	0	0	Dry	Y
/21/10	Arlington	Quinn2	10:30	Concrete	12	19	fresh	none	clear	none	ND	ND	0 05	0.3	ND	ND	3	9.1	ND (2.0	ND (2.0)	0.86	ND (2.0)	5.	ND (0.)	ND (.0	15	1.2	ND	ND	NA	ND	ND	8.3	6	2. 2321769	-71.17286099	lots of green algae inside pipe		1.	11.	2700	Bedford	0	0	Dry	Y
/21/10	Arlington	RyMill	11:05	Concrete	2'X3'	.00	fresh	none	clear	none	1302	0	0.16	0.3	0 677	3	1.6	185	250	15000	3.3	170	520	67	ND (5.0	15000	ND (0.5)	ND	ND	0.08	ND	ND	6.	.15	2. 2389075	-71.1737 022	fresh smel ing	Off Ryder Street lot	1.1	12 8	2188	Bedford	0	0	Dry	Y
/21/10	Arlington	RyMil 2	11:10	hole in wa	na	2.00	none	none	clear	none	ND	ND	NA	0.2	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.65	2. 2388575	-71.17372022	hole in wall/seep	East s de of culvert wa l	0.5	10 0	139	Bedford	0	0	Dry	Y
/21/10	Arlington	RyderE	11:20	Concrete	30	29	none	none	clear	none	271	336	0.16	0.25	0.13	ND	1.6	21	ND (2.0	ND (2.0)	1.1	5.8	11	0. 3	5.	230	1.3	ND	0.18	0.26	ND	ND	3.8	1.25	2. 2 0075	-71.17 58522	near Out of the Woods contracting	Outfa l to Mill Brook, East side of strea	0.7	10.1	1 50	Bedford	0	0	Dry	Y
/21/10	Arlington	RyderW	11:30	Concrete	36	20-30	none	none	clear	none	30	20	ND	ND	ND	ND	1.1	52	ND (2.5	ND (2.5)	1	ND (2.5)	ND (5.0	ND (0.5)	ND (5.0	1	ND (0.5)	ND	ND	0.05	ND	ND	0.65	2. 2 3302	-71.17 6 016	waders, culvert just upstream s dr	Outfa l to Mill Brook, West s de of stre	0.6	9.8	1280	Bedford	0	0	Dry	Y
/21/10	Arlington	30Park	12:25	Open stre	na	stream	none	ight te	clear	none	17 1	816	0 08	ND	ND	ND	0.57	56	1	76	.3	1	120	1.6	ND (.0	1900	0. 3	ND	ND	NA	ND	ND	3.3	0.75	2. 2 750 9	-71.181323 9	Park St behind Penzys	Mill Brook main stem, by Golds Gym	0.3	1 .1	612	Bedford	0	0	Dry	Y
/21/10	Winches	ABR006	8:30	Open stre	na	stream	none	none	irly cle	aves/b	899	199	0 09	0.2	0 528	2	1.2	28	2.3	21	21	7.9	170	ND (0.)	ND (.0	360	0.85	ND	ND	0.06	ND	ND	.9	2	2. 732536	-71.13860 28	near gauging station	Sampled above dam	0.	10 3	821	Bedford	0	0 02	Dry	Y
/21/10	Winches	Wf eld	8:50	Open stre	na	stream	none	none	htly tu	some	839	317	NA	0.22	NA	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 51091 9	-71.13689 56	waterfall ~250ft upstream, one goo	Waterfie d St br dge	0.	10 2	806	Bedford	0.16	0.18	Wet	Y
/21/10	Winches	Vern01	9:15	Open stre	na	stream	none	none	htly tu	aves/b	6 3	108	NA	0.22	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 528 032	-71.135 2 1	used reach and waders	Mt Vernon St bridge by fire stat on	0.	10 2	79	Bedford	0.16	0.18	Wet	Y
/21/10	Winches	Wedge01	9:32	Open stre	na	stream	none	none	htly tu	some	58	10	NA	~0.1	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 55710 5	-71.13669 02	used reach	Behind Stop & Shop	0.3	12 6	561	Bedford	0.16	0.18	Wet	Y
/21/10	Winches	Skill01	9:50	Concrete	3'	stream	none	eish/g	turb d	some	913	1 8	0.1	0.25	0 8	3	1.	25	ND (2.0	27	23	6.	220	1.	ND (.0	370	0.61	ND	ND	ND	ND	ND	5.2	2.25	2. 56 901	-71.136 72 3	outfa l on far left oaking upstream	Skillings road from under ball ield	0.	9.1	907	Bedford	0.16	0.18	Wet	Y
/21/10	Winches	UR021	9:50	Concrete	3'	stream	none	eish/g	turb d	some	16 2	132	0.1	0.25	0 837	3	1.	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	5.	1.75	2. 56 901	-71.136 72 3	duplicate of Skil 01		na	na	na	Bedford	0.16	0.18	Wet	Y
/21/10	Winches	Skill02	9:55	Concrete	12	5-10	none	none	irly cle	none	75	30	NA	~0.1	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND	ND	NA	NA	2. 56 6101	-71.136 980	very low flow - f any	sma l pipe exiting near Sk ll01	0.	9.1	908	Bedford	0.16	0.18	Wet	Y
/21/10	Winches	Swan1	10: 5	Open stre	na	stream	none	ight te	htly tu	me su	7 0	171	0 08	0.25	0 887	3	1.	23	ND (2.0	29	19	6.5	250	0.63	ND (.0	330	0.65	ND	ND	0.0	ND	ND	5.1	1.	2. 608915	-71.13718955	just downstream near gauging stat	Swanton Street bridge	0.	9.1	905	Bedford	0.16	0.18	Wet	Y
/21/10	Winches	Russ1	11:05	Stone (ins	'X '	stream	none	ight te	clear	me su	38	359	0 07	0.25	0 083	ND	1.	22	ND (2.5	2.8	8.2	ND (2.5)		ND (0.5)	ND (5.0	75	1.8	ND	ND	ND	ND	ND	5.6	2.6	2. 63 55	-71.1 9258	samp ed far right of culvert opening	Russel Brook at the end of Sylvester S	0.5	9.7	965	Bedford	0.16	0.18	Wet	Y
/21/10	Woburn	OF118	11:35	Concrete	30	50	none	none	clear	me su	15	52	0 07	0.3	0 381	0.5	2	23	ND (2.0	5.8	6.7	ND (2.0)	37	ND (0.)	6.5	1300	.8	ND	ND	0.0	ND	ND	11	5.7	2. 75 9599	-71.1599119	rust/orange stain on rocks	main stream out all on corner of Ellis a	0.8	19 8	1655	Bedford	0.17	0.19	Wet	Y
/21/10	Woburn	OF159A	12:0	Cor.Metal	18	5-10	none	none	clear	none	268	156	NA	0.3	NA	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 8090577	-71.15755569	sl ghtly crushed small outfa l pipe	Off Harrison Ave near ballpark, downs	0.5	12 2	1070	Bedford	0.17	0.19	Wet	Y
/21/10	Woburn	OF159	12:05	Cor.Metal	2 -30	20-30	ht sew	none	clear	none	318	109	0.1	0.25	1.38	1	0.59	36	ND (2.0	7.9	10	ND (2.0)	35	ND (0.)	16	1000	1.2	ND	ND	ND	ND	15	.75	2. 809258	-71.15751796	Main outfall	Off Harrison Ave near ballpark, downs	1.3	7.9	2 95	Bedford	0.17	0.19	Wet	Y
/21/10	Woburn	OF161	12:15	Cor. Meta	5'	stream	htly tu	none	htly tu	some	16 2	1 8	ND	0.3	0.153	ND	2.7	28	3.2	120	8.1	19	85	ND (0.5)	7.2	1500	8.6	ND	ND	ND	ND	9.7	3.35	2. 7993991	-71.156178 6	very slow flow	oppos te s de of ballpark on Harrison A	0.8	12 5	1578	Bedford	0.17	0.19	Wet	Y
5/5/10	Arlington	Grove01a	8:10	Stone (ins	6'	stream	tural g	ight te	irly cle	me su	27 7	520	0 07	~0.1	0.101	ND	0.59	58	8.5	53	10	12	130	ND (0.)	ND (.0	750	0. 2	ND	ND	0.09	ND	ND	.3	0.9	2. 2029396	-71.16 7529	Just upstream of Grove01, be ore t	Mill Brook instream	0.	15 9	850	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	GroveS	8:10	Concrete	0	10-15	ight g	none	clear	none	202	15531	NA	0.22	NA	2	NA	NA	ND (2.0	2900	5.8	70	190	13	ND (.0	810	1.9	NA	NA	NA	ND	ND	NA	NA	2. 2032 96	-71.16 7329	moss/algae growing on inside and	Outfa l to Mill Creek	0.7	12.	1307	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	UR022	8:10	Stone (ins	6'	stream	tural g	ight te	irly cle	me su	2069	583	0 07	~0.1	0 218	ND	0.6	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.0	ND	ND	.2	1.8	2. 2029396	-71.16 7529	duplicate of Grove01a		na	na	na	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	Robin	8: 5	oose join	2	10-15	natur	none	clear	none	9678	295	NA	0.	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 22035	-71.170577	needed ladder/waders dark slimy c	At end of Robin Street, accessed thro	0.8	12 5	1533	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	Bratt e	9:10	Open stre	na	stream	none	tea	ry turb	some	1 62	776	NA	~0.1	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 20 17	-71.168133	lots of suspended sediments, cons	Mill Brook instream near condo's off B	0.	16.1	8 7	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	RyMill	9:25	Concrete	2'X3'	3	nical/m	none	irly cle	none	2190	301	NA	~0.1	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 2389075	-71.1737 022	1/2 the f ow from last sample da e,	Off Ryder Street lot	1.1	13 6	2257	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	RyderE	9:32	Concrete	30	29	none	none	clear	none	9	30	NA	0.2	NA	0.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 2 0075	-71.17 58522	near Out of the Woods contracting	Outfa l to Mill Brook, East side of strea	0.7	11 7	1 07	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	Ryder01	9:35	Stone (ins	6'	stream	none	ight te	irly cle	me su	195	350	0 07	~0.1	0.135	0.25	0.37	5	9.1	100	7.7	13	73	0.65	ND (.0	1200	0.6	ND	ND	0.05	ND	ND	3.9	1.35	2. 2 65	-71.17 718	neighbor stopped over to say that h	Just upstream of Ryder St bridge and	0.	17	729	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	30Park	10:10	Open stre	na	stream	none	ight te	clear	none	1302	350	0 07	ND	0.16	ND	0.35	5	10	1	6.7	9	72	0.6	ND (.0	920	0.5	ND	ND	ND	ND	ND	3.8	1.95	2. 2 750 9	-71.181323 9	Park St behind Penzys	Mill Brook main stem, by Golds Gym	0.3	17 6	71	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	1395MA	10:30	Open stre	na	stream	none	ight te	htly tu	none	689	323	0.06	ND	0.133	ND	0.31	55	8	5.	5.7	7.3	35	ND (0.)	ND (.0	590	ND (0.)	ND	ND	0.0	ND	ND	3.7	2	2. 253 8	-71.186230	PPCP bottle broke, resampled at 1	behind 1395 Mass Ave, Sunrise assis	0.3	18 2	68	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	Drake01	10:55	Open stre	na	stream	none	med te	htly tu	none	2318	960	0.1	ND	0 257	0.75	0.52	129	32	23	12	19	98	0.8	ND (.0	2700	1.9	ND	ND	ND	ND	ND	.1	2.3	2. 2689	-71.189660	Drake' slow flow, just upstream or r	Between condo comp ex s off Drake	0.	15 8	726	Bedford	0.12	0.12	Wet	Y
5/5/10	Arlington	AtRes	11:05	Concrete	3'	stream	none	ight te	clear	me su	183	7	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2. 26882	-71.18958	just below confluence with Mill Bro	just downstream of Ar ington reservoir	0.3	20 2	660	Bedford	0.12	0.13	Wet	Y
5/5/10	Lexingto	WF01	11:25	Stone (ins	'X '	stream	none	none	cloudy	me sc	16	52	0 07	ND	ND	ND	1.	93	ND (2.5	2.6	1.5	ND (2.5)	5.8	ND (0.5)	ND (5.0	390	ND (0.5)	ND	ND	ND	ND	ND	6.3	1.2	2. 277872	-71.2050922	lots of duck weed on surface	Mass ave across from Wi son Farms	0.5	18	9 6	Bedford	0.12	0.13	Wet	Y
5/5/10	Lexingto	Vine01	11:55	Open stre	na	stream	none	eavy te	htly tu	me ea	1302	393	NA	~0.1	NA	3	NA	NA	.3	3	2.1	1	93	1.	ND (5.0	1700	2.9	NA	NA	NA	ND	NA	NA	NA	2. 503760	-71.2202638		Near comer Grant St & Hayes Ln	0.	12 3	7 1	Bedford	0.12	0.13	Wet	Y
5/12/10	Woburn	Ha ls2	8:00	Open stre	na	stream	none	ht bro	na	none	212	109	NA	~0.1	NA	ND	NA	NA	ND (2.5	ND (2.5)	9.3	8.3	300	ND (0.5)	ND (5.0	160	1.	NA	NA	ND	ND	NA	NA	NA	0.	2.513171	-71.1 26 9	machinery stored nearby	Ha ls Brook behind 185 New Boston,	0.	11.1	875	Bedford	0	0	Dry	Y
5/12/10	Woburn	DRR1	8:15	Open stre	na	stream	none	ht bro	clear	none	182	8	NA	~0.1	NA		NA	29	ND (2.5	2.3	1.5	ND (2.0)	6.7	ND (0.)	ND (.0	96	0.72	NA	NA	ND	ND	NA	NA	11.3	2.513291	-71.1 2539	samp ed before timber in stream,	Unnamed stream just upstream of Ha	0.	10.1	839	Bedford	0	0	Dry	Y
5/12/10	Woburn	Mys07	9:05	Open stre	na	stream	ch/sew	rk bro	ry mu	algae	131	1 5	NA	~0.1	NA		NA	22	ND (2.5	ND (2.5)	1.3	ND (2.5)	5.6	ND (0.5)	ND (5.0	100	0.77	NA	NA	0.06	ND	NA	NA	19.5	2.518563	-71.1 6526	A gae and oil on surface. Dumpste	New Boston St where culvert enters, d	0.	9. 9	815	Bedford	0	0	Dry	Y
5/12/10	Woburn	Mys08	9:10	Open stre	na	stream	ulch/s	ht bro	clear	none	92	ND	NA	ND	NA		NA	19	ND (2.5	3.3	1.7	ND (2.0)	ND (. .0	ND (0.)	ND (.0	29	0.63	NA	NA	ND	ND	NA	NA	20	2.518739	-71.1 6 11	not as strong smelling as Mys07	Opposite stream from Mys7	0.	10 2	896	Bedford	0	0	Dry	Y
5/12/10	Woburn	Tor01	10:00	Open stre	na	stream	none	ht bro	clear	none	223	120	NA	0.25	NA	ND	NA	38	ND (2.0	ND (2.0)	7.5	5.9	1 0	ND (0.)	ND (.0	80	1.	NA	NA	ND	ND	NA	NA	3.85	2.51 22 81	-71.1 551115	flow on downstream side of road	samp ed from eft opening	0.	11 3	878	Bedford	0	0	Dry	
5/12/10	Woburn	UR023	10:00	Open stre	na	stream	none	ht bro	clear	none	182	52	NA	0.25	NA	0.1	NA	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA	NA	3.55	2.51 22 81	-71.1 551115	duplicate of Tor01		0.	11 3	878	Bedford	0	0	Dry	
5/12/10	Woburn	Dart1	10:30	Open stre	na	stream	none	rk bro	clear	me su	6	31	NA	0.2	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA	NA	2.65	2.510 8269	-71.15 92526	fair amount of itter	upstream of road crossing	0.	12.1	869	Bedford	0	0	Dry	
5/12/10	Woburn	School01	11:05	Open stre	na	stream	none	rk bro	clear	none	109	20	NA	0.25	NA	0.25	NA	73	ND (2.0	2.5	17	6.	61	ND (0.)	ND (.0	230	1.2	NA	NA	0.11	ND	NA	NA	2.7	2.5086557	-71.1583669	construction on bridge above, lots o	bottom of stone run off channel	0.5	12 7	987	Bedford	0	0	Dry	
5/19/10	Quincy	FBP02	8:15	Open stre	na	stream	none	none	clear	none	813	3873	NA	0.25	NA	0.1	NA	58	3.7	30	17	7.7	190	1.3	ND (5.0	560	0.67	NA	NA	ND	ND	NA	NA	NA	2.25766282	-71.008968 9	samp ed stream before bridge		0.2	12 2	360.6	Milton-Blu	1.5	0	Wet	
5/19/10	Quincy	UR02	8:15	Open stre	na	stream	none	none	clear	none	3922	365	NA	0.3	NA	0.1	NA	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA	NA	0.05	2.25766282	-71.008968 9	duplicate of FBP02		na	na	na	Milton-Blu	1.5	0	Wet	
5/19/10	Quincy	FBP03	8:55	Open stre	na	stream	pt c sm	ht bro	nild	none	565	5172	NA	0.	NA	ND	NA	9	5	6	18	11	160	ND (0.5)	ND (5.0	600	0.68	NA	NA	ND	ND	NA	NA	ND	2.25627321	-71.02067588	onle t side of culvert		0.2	12 3	28.5	Milton-Blu	1.5	0	Wet	
5/19/10	Quincy	Broad1	9:25			stream	none	none	clear	none	3 66	2755	NA	2	NA	ND	NA	69	ND (2.0	53	17	7.5	180	ND (0.)	ND (.0	1300	0.8	NA	NA	0.03	ND	NA	NA	10.8	2.25620978	-70.9931 315			8.1	13 3	1 .1	Milton-Blu	1.5	0	Wet	Y
5/19/10	Quincy	Sag1A	10:15		ft	s ight	septic	ht bro	clear	none	133 0	2098	NA	1.7	NA	ND	NA	70	7.1	210	19	1	380	1.7	ND (.0	2700	3.6	NA	NA	0.15	ND	NA	NA	35.80	2.27602123	-71.0320993	samp ed inf ow from culvert		.3	12 6	7.78	Milton-Blu	1.5	0	Wet	
5/19/10	Quincy	Wo IB1A	10: 0	CM	'x3' bo	.5L/mi	sewag	none	clear	none	80	3282	NA	0.5	NA	0.1	NA	108	21	56	16	5	190	9.3	ND (.0	3900	1.	NA	NA	ND	ND	NA	NA	11.3	2.277357	-71.0008933	just south of Wo IB1 on Wollaston Be		0.3	12.	675	Milton-Blu	1.5	0	Wet	
5/19/10	Quincy	Wo IB1	11:00	CM	x bo	1	sewag	none	clear	none	27 7	6131	NA	0.75	NA	ND	NA	70	6.2	130	13	60	720	ND (0.)	ND (.0	15000	ND (0.)	NA	NA	0.07	ND	NA	NA	8.65	2.278672	-71.012859		outfa l between yacht clubs on Quincy	3.5	12 8	.87	Milton-Blu	1.5	0	Wet	
5/19/10	Quincy	Sag1B	11: 5		5x6 t	slowly	sewag	ht bro	mi d	none	20980	365	NA	0.5	NA	1	NA	118	6	350	22	1 0	530	17	ND (.0	6100	3	NA	NA	0.05	ND	NA	NA	2.27361693	-71.03395231	5ft from outflow		1.1	13.1	1708	Milton-Blu	1.5	0	Wet	
5/26/10	Belmont	UR025	9:10	Open stre	na	stream	musty	med te	htly tu	none	29090	7701	NA	0.2	NA	0.25	NA	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA	NA	2.2	2.39528219	-71.1763191	duplicate of WEB013		na	na	na	Bedford	0	0	Dry	
5/26/10	Belmont	WEB013	9:10	Open stre	na	stream	musty	med te	htly tu	none	11620	6 88	NA	0.2	NA	0.25	NA	79	5	1200	11	300	1100	.8	ND (5.0	12000	.3	NA	NA	0.0	ND	NA	NA	1.1	2.39528219	-71.1763191	lots of suspended sediments, wate	We lington Brook	0.7	12 6	1 33	Bedford	0	0	Dry	
5/26/10	Arlington	ARL0 3	9:58	Concrete	18-2	5	none	none	clear	none	79	109	NA	~0.1	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	2. 225696	-71.1 928822		Mystic Val ey Parkway	0.6	13 8	1269	Bedford	0	0	Dry	
5/26/10	Arlington	ARL137	10:25	Clay	16	20-30	none	none	clear	none	12	10	NA	ND	NA	0.25	NA	23	ND (2.0	ND (2.0)	.3	.2	39	ND (0.)	ND (.0	37	ND (0.)	NA	NA	0.71	1/0.3	NA	NA	0.25	2. 1770 89	-71.157 838	may be multiple pipe coming togetl	pipe d scharging to Mill Brook, Under	0.1	17 8	237	Bedford	0	0	Dry	
5/26/10	Arlington	ARL207	11:07	Seep	na	1-2	brassic	na	na	na	25	20	NA	~0.1	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.5	2. 2 71 86	-71.17533266	col ected from seep under pipe opening		1	18.1	1869	Bedford	0	0	Dry	
5/26/10	Arlington	Drake01	11:25	Open stre	na	stream	none	med te	htly tu	none	1230	663	NA	~0.1	NA	2	NA	205	3	99	1	67	230	1.3	ND (.0	3000	3.3	NA	NA	0.06	ND	NA	NA	1.05	2. 2689	-71.189660	slow flow, just upstream or reservoi	Between condo comp ex s off Drake	0.5	21 5	665	Bedford	0	0	Dry	
5/26/10	Arlington	AtRes	11:30	Open stre	na	stream	none	med te	htly tu	none	79	5 8	NA	~0.1	NA	2	NA	180	33	100	11	7	190	1	ND (.0	2000	2.8	NA	NA	~0.02	ND	NA	NA	0.18	2. 26882	-71.18958	before confluence with Mill Brook, f	just downstream of Ar ington reservoir	0.3	21 2	667	Bedford	0	0	Dry	
5/26/10	Lexingto	Bow01A	12:00	Concrete	12	<1	none	none	clear	none	12	ND	NA	0.2	NA	0.25	NA	NA	ND (2.5	ND (2.5)	2.	ND (2.5)	11	ND (0.5)	7.	30	6.6	NA	NA	0.11	ND	NA	NA	2. 5	2. 26 5629	-71.19 36 02		pipe d scharging under bow street br d	1.3	17 6	2 82	Bedford	0	0	Dry	
5/26/10	Lexingto	Bow01	12:05	Open stre	na	stream	none	med te	htly tu	none	6 3	809	NA	~0.1	NA	ND	NA	8	3.1	19	2.8	5.1	22	0.63	ND (.0	0	ND (0.)	NA	NA	0.08	ND	NA	NA	ND	2. 26 8362	-71.19 0958	6ft wide, rocky streambed flow <6in	Bow street, just downstream of bridge	0.3	18 3	537	Bedford	0	0	Dry	
5/26/10	Lexingto	Fott01	12:35	Open stre	na	stream	none	med te	htly tu	none	12	199	NA	ND	NA	1	NA	93	ND (2.0	ND (2.0)	2.2	ND (2.0)	ND (. .0	ND (0.)	ND (.0	0	ND (0.)	NA	NA	0.06	ND	NA	NA	1. 5	2. 283 205	-71.19676 56	36 double culvert co lected compo	Just downstream of Fottler ave Bridge	0.2	19 3	513	Bedford	0	0	Dry	
5/26/10	Lexingto	GMS01	12:55	Open stre	na	stream	none	eavy te	ry mu	ick fil	72	52	NA	0.2	NA	0.25	NA	36	ND (2.0	ND (2.0)	0. 5	ND (2.0)	ND (. .0	ND (0.)	ND (.0	ND (. .0	ND (0.)	NA	NA	ND	ND	NA	NA	0.05	2. 2901218	-71.1975303	tributary, thick film covering surface	Walked ~100yards upstream from Fo	0.2	20 9	362.9	Bedford	0	0	Dry	
6/2/10	Revere	UR026	8:01	Concrete	2	NA	none	brown	tur

| | | |

10/5/10	Watertow	Wat12	9:30	Concrete	36	na	none	none	clear	none	111990	1 136	NA	0.6	NA		NA	NA	190	1100	3	980	12000	ND (.0	ND (.0	1200	200	NA	NA	ND	ND	NA	NA	NA	2.36 89	-71.18 223	Wa ertown outfa l #12	some small fish, cou dn't determine fo	0.5	16 8	1012	Boston-Lo	0.03	0 52	Wet	Y
10/5/10	Watertow	Wat11	9: 0	Concrete	x3' be	na	none	med te	turb d	none	19350	1723	NA	0.3	NA	0.1	NA	NA	D (10.	90	16	160	270	ND (2.0)	ND (20.0	5	18	NA	NA	0.1	ND	NA	NA	NA	2.36 77	-71.18 952	Wa ertown outfa l #11	outfa l opening under water sampled a	0.6	16 2	1168	Boston-Lo	0.03	0 52	Wet	Y
10/5/10	Watertow	LB01	10:35	Concrete	0'x7'b	100	none	none	clear	none	6212	583	NA	0.2	NA	ND	NA	NA	6.3	6	1	2	510	ND (0.5)	ND (.7	92	3.6	NA	NA	0.11	ND	NA	NA	NA	2.36 733	-71.189067	Laundry Brook	samp ed just ins de opening	0.3	15 5	565	Boston-Lo	0.03	0 52	Wet	Y
10/5/10	Watertow	Wat5	11:07	Concrete		1	none	none	clear	none	6	20	NA	0.25	NA	ND	NA	NA	ND (2.0	ND (2.0)	0.52	.8	23	ND (0.)	ND (.0	ND (.0	6.6	NA	NA	ND	ND	NA	NA	NA	2.367 9	-71.198957	culvert on right, not a ot of f ow		0.7	18.1	13 8	Boston-Lo	0.0	0 53	Wet	Y
10/5/10	Watertow	Wat6	11:11	Concrete	5'	na	none	none	clear	none	510	122	NA	0.25	NA	ND	NA	NA	5.	37	3.7	19	82	ND (0.)	ND (.2	36	3.2	NA	NA	0.08	ND	NA	NA	NA	2.367 89	-71.198853	About 1ft of outfall underwater, som	can hear running water upstream	0.7	17 7	1299	Boston-Lo	0.0	0 53	Wet	Y
10/13/10	Marb ehe	DLaunch	8:15	Concrete	ft	0	none	none	clear	none	1376	860	NA	2.	NA	ND	NA	NA	ND (2.0	1	1.8	12		ND (0.)	ND (.0	8.5	ND (0.)	NA	NA	ND	ND	NA	NA	NA	2. 922811	-70.85511019	Sampled eft culvert,. ooking upstre	more f ow than last time DPW & DPH	20.7	11 9	33.13mS	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	UR038	8:15	Concrete	ft	0	none	none	clear	none	871	723	NA	2.	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	2. 922811	-70.85511019	duplicate of D aunch		20.7	11 9	33.13mS	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	MH19	8:38	stormdrai	na	~20	mus	none	clear	none	TNTC	2 196	NA	0.5	NA		NA	NA	120	500	37	2100	300	ND (. 0)	ND (.0	~1500	82	NA	NA	ND	ND	NA	NA	NA	2. 92557	-70.859 21	Opened drain manhole at #62 Bea	Br ck sides w/hard bottom, Wide slow	0.7	16 3	1 83	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	MH32	9:10	stormdrai	na	~15	none	none	clear	none	118	10	NA	~0.1	NA	ND	NA	NA	2.	8.	6.6	210	120	ND (0.5)	ND (.8	~97	ND (0.5)	NA	NA	ND	ND	NA	NA	NA	2. 93 67	-70.860 30	Opened drain manhole at #78 E. C	used reach	0.	16 3	7 3	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	MH 8	9:30	stormdrai	na	~15	hily m	none	clear	none	8	ND	NA	~0.1	NA	ND	NA	NA	ND (2.0	ND (2.0)	0.8	2.8	ND (.0	ND (0.)	ND (.0	~ .3	0.52	NA	NA	ND	ND	NA	NA	NA	2. 92693	-70.860829	Opened drain manhole at corner of	gas odor	0.2	16	91.7	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	MH29A	9:55	p ast c sto	18-2	~10	none	none	clear	none	689	1	NA	~0.1	NA	ND	NA	NA	2.2	21	1	9.	50	ND (0.5)	ND (.8	~15	0.66	NA	NA	0.03	ND	NA	NA	NA	2. 9 598	-70.859 3	Sampled drain pipe entering system		0.2	16 9	0	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	MH2336	10:30	stormdrai	na	na	none	none	clear	nall wh	565	2 82	NA	0.25	NA	0.75	NA	NA	13	310	19	1100	~ 8000	ND (0.)	ND (.0	~29	68	NA	NA	0.03	ND	NA	NA	NA	2. 96982	-70.856396	Opened drain manhole on Chestnu	double 36 pipes coming into 3 deep	0.3	16 9	685	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	MH2203	10:55	stormdrai	na	~15	musty	none	clear	none	565	5. 72	NA	0.3	NA	0.	NA	NA	6	630	13	70	790	ND (0 8)	ND (8.0)	~81	ND (0.8)	NA	NA	ND	ND	NA	NA	NA	2.502967	-70.856873	Opened drain manhole on Sewall S	brick lined, used reach	0.	16.	7	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	MHWinslo	11:11	stormdrai	na	na	musty	hily ye	clear	none	2 52	118	NA	0.	NA	0.3	NA	NA	ND (2.0	110	16	90	130	ND (0.)	ND (.0	ND (.0	1.7	NA	NA	ND	ND	NA	NA	NA	2.506562	-70.856223	Opened drain manhole at corner of	Sampled main flow, 3'deep	0.	15 2	809	Boston-Lo	0	0 05	Dry	Y
10/13/10	Marb ehe	MHWinslo	11:28	stormdrai	18	~5-10	h sme	none	clear	none	3	98	NA	0.2	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA	NA	NA	2.506562	-70.856223	Pipe flowing into stormdrain system	Star ed flowing after MHWins ow sam	0.3	17 5	5 1	Boston-Lo	0	0 05	Dry	Y
10/27/10	Quincy	Wo IB1	8:05	CM	x be	50	musty	none	clear	none	1 7	197	NA	1.25	NA	ND	NA	NA	D (10.	120	8.1	6	~130	ND (2.0)	ND (20.0	D (20.	ND (2.0)	NA	NA	0.0	ND	NA	NA	NA	2.278672	-71.012859	Pungent 'corpse-y' odor, thick seaw	outfa l between yacht clubs on Quincy	17.3	13 8	28.18mS	Boston-Lo	0.09	0.1	Dry	Y
10/27/10	Quincy	Wo IB1A	8:10	CM	x3' be	30- 0	sty/su	none	hily c	oily film	192	121	NA	2.	NA	ND	NA	NA	D (10.	~6.7	2.	12	~22	ND (2.0)	ND (20.0	20	ND (2.0)	NA	NA	ND	ND	NA	NA	NA	2.277357	-71.008933	trash in water and p astered on gra	just south of Wo IB1 on Wollaston Be	13.2	1 3	2 89mS	Boston-Lo	0.09	0.1	Dry	Y
10/27/10	Quincy	Wo IB1B	8:18	concrete	3-'	30- 0	sty/su	none	hily c	d me su	58	20	NA	2.5	NA	0.25	NA	NA	D (10.	ND (10.0)	2.6	10	D (20.	ND (2.0)	ND (20.0	D (20.	ND (2.0)	NA	NA	ND	ND	NA	NA	NA	2.277357	-71.008933	barnac e encrusted outfall, must be	outfa l south of two yacht clubs, about	2	1 7	38. 5mS	Boston-Lo	0.09	0.1	Dry	Y
10/27/10	Dorchest	Ten1	8:55	Pipe Mat.	2 -30	na	none	an/brow	ny turb	none	132	20	NA	1.5	NA	3	NA	NA	D (10.	7	16	13	~130	1	ND (20.0	20	ND (2.0)	NA	NA	0.0	ND	NA	NA	NA	2.289355 7	-71.0 17732	Took Beach sample here as well (s	Tenean Beach, off Tenean Street and	16.9	1 1	22 2 mS	Boston-Lo	0.09	0.1	Dry	Y
10/27/10	Boston	10L09	9:20	concrete	(2) 6x	na	sewag	grey	cloudy	none	813	1 136	NA	0.6	NA	3	NA	NA	D (10.	1800	190	00	~2700	.3	ND (20.0	180	ND (2.0)	NA	NA	ND	ND	NA	NA	NA	2.282780	-71.0 6962	large t de gate ~2? Holding back w	samp ed center of southern tide gate	1.8	1 8	33 68mS	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Boston	UR039	9:20	concrete	(2) 6x	na	sewag	grey	cloudy	none	1060	9208	NA	0.8	NA	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA	NA	NA	2.282780	-71.0 6962	duplicate of 10L09		1.8	1 8	33 68mS	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Boston	10L09 A	9:25	metal	2	5	musty	grey	cloudy	none	31 80	1 136	NA	1.5	NA	3	NA	NA	D (10.	270	970	170	~ 100	ND (2.0)	ND (20.0	D (20.	ND (2.0)	NA	NA	0.03	ND	NA	NA	NA	2.2825 0	-71.0 6292	1/2 si ted up	samp ed about 10 feet from outfall	1.3	16 3	251	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Quincy	Sag1A	10:15	open stre	na	na	ht mu	/med b	ry turb	me su	5630	2909	NA	0.75	NA	6	NA	NA	D (10.	330	260	130	~ 100	8	3	910	ND (2.0)	NA	NA	0.03	ND	NA	NA	NA	2.275935	-71.031798	main chane l under her tage Drive	prev ously named SagA	3.	15 8	6.23mS	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Quincy	SagA2	10:20	seep	12	1	none	none	clear	none	ND	ND	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA	NA	NA	2.2759 1	-71.031767	green a ge at bottom of outfall	former drainline that had been plugge	0	13 9	91.6	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Quincy	Sag1B	10:30	concrete	6 x6'	na	none	brown	ity/turb	none	80	2851	NA	0.5	NA	1	NA	NA	D (10.	320	99	110	~2000	ND (2.0)	ND (20.0	10	3.8	NA	NA	ND	ND	NA	NA	NA	2.273601	-71.03 010	large wooden tide gate ~5ft into ou	Previously named SagB	0.8	15.	1590	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Quincy	Sag1C	10:58	metal	30	na	tural g	ht bro	clear	none	2 52	2723	NA	0.6	NA	0.5	NA	NA	D (10.	81	280	100	~3200	38	ND (20.0	6	ND (2.0)	NA	NA	0.06	ND	NA	NA	NA	2.273990	-71.03063	very dark sediments 1/2 s ted, t de	Previously named SagC	1.5	16 9	33 20mS	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Quincy	Bay1	11: 0	Seep/poo	NA	NA	sewag	brown	cloudy	none	172200	965.00	NA	NA	NA	25.	NA	NA	2200	29000	360	12000	~69000	200	D (1000	20000	ND (100.0	NA	NA	NA	ND	NA	NA	NA	2.2999 3	-71.006177	seep from sewage line to main interceptor on Bayside drive		8.	17 9	83	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Quincy	BayBch	11: 5	Beach	NA	NA	none	none	cloudy	none	25	ND	NA	3.	NA	ND	NA	NA	ND (2.0	ND (2.0)	1.9	~1.6	~16	ND (0.)	ND (.0	~2.9	0.5	NA	NA	ND	ND	NA	NA	NA	2.299779	-71.005800	Sample collected at beach off Bays	waded ~ 6 ft	37.1	13 7	3 7 mS	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Quincy	Wo IBch2	12:30	Beach	NA	NA	none	none	cloudy	none	21	ND	NA	2.	NA	ND	NA	NA	ND (2.0	ND (2.0)	2.2	7	~11	ND (0.)	ND (.0	.	0. 6	NA	NA	ND	ND	NA	NA	NA	2.277051	-71.009 67	Wo laston Beach Sample	waded ~ 6ft between WollB1A & Wo I	31.3	13 2	1 01mS	Boston-Lo	0.13	0.1	Wet	Y
10/27/10	Quincy	Wo IBch1	12:35	Beach	NA	NA	none	none	cloudy	none	113	ND	NA	3.	NA	ND	NA	NA	ND (2.0	2.2	2.	7.5	~52	ND (0.)	16	ND (.0	ND (0.)	NA	NA	0.0	ND	NA	NA	NA	2.278670	-71.013 52	Wo laston Beach Sample	waded ~ 6ft near WollB1	31.3	13 6	7 97mS	Boston-Lo	0.13	0.1	Wet	Y

E. coli - color key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, Black < 235 col 100ml
Entero - co or key: Red ≥ 1000 col/100ml, Orange ≥ 350 Ye low ≥ 61 col/100ml, Black < 61 col/100ml
NH3 - co or key: Red ≥ 6 mg/L, Orange ≥ 3 mg/L, Ye low ≥ 0.5 mg/L, B ack < 0.5 mg/L
Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Ye low ≥ 0.25 mg/L, B ack < 0.25 mg/L *** may give alse positive at sa inity greater than 1 ppt
Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yel ow ≥ 0.02 mg L, B ack < 0.02 mg/L
Fluoride - color key: Red ≥ 2.0 mg/L, Orange ≥ 1.0 mg/L, Yel ow ≥ 0.5 mg/L, B ack < 0.5 mg/L
Potassium - Red ≥ 20.0 mg/L, Orange ≥ 10 mg/L, Yellow ≥ 6 mg/L, Black < 6 mg/L

REPOR ING LIMI S

E. coli = MPN/100mL
Enterococcus = 10 MPN/100mL
Surfactants Alpha = 0.05 mg/L (Except where otherwise
Surfactants Field = 0.1 mg/L
Surfactant DR-850 = 0.02 mg/L
Ammonia (Alpha) = 0.075 mg/L
Ammonia F eld = 0.1 mg/L
Ammonia Nessler = 0.2 mg/L
Ammonia DR-850 = 0.08 mg/L
Ammonia Test Strip = 0.1 mg/L

Total Phosphorus = 5 ug/L
CL2 (Total Res dual) = 0.02 mg/L
CL2 (Residual Free) = 0.05 mg/L
CL2 Field = 0.02 mg/L
CL2 Test Strip =
Flouride Alpha= 0.20 mg/L
Flouride DR-850 = 0.05 mg/L (Except where otherwise noted)
Potassium = 2.5 mg/L
Potassium Field = 0.2 mg L
N trogen, Nitrate/Nitr te = 0.10 mg/l

ND – not detected above the associated detection limit
NA – not applicable (analyte not tested for at that site at this time)
( ) data reported as estimate

RARE Stormwater Outfall Inspection & Sampl ng Summary

| Location | | | | Outfa l | | Inspection | | | |

9 22/09	Andover	Huss02	10:50	pen stream	na	None	light tea	clear	None	39	ND	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	2.672 7656	-71.151 3865	lots of bacter al grow	Hussy Brook - sampl	0.3	15 5	539	Lawrence	0 01	0.01	Dry
9 22/09	Lawrence	SLE3	11:30	crete ou	3'	na	ght mu	None	Clear	None	205	5	ND	−0.1	ND	ND	ND	0.	ND	ND	9	ND (2.1	11	ND (0.	ND (2.1)	17	ND (0.	ND (2	82	6.3	ND	ND	0.11	ND	ND	0.1	5.5	2.35	2.695971	-71.1 55601	stream scoured, lots	South Lawrence Elem	0.6	15.1	1158	Lawrence	0 01	0.01	Dry
9 22/09	Lawrence	UR018	11:30	crete ou	3'	na	ght mu	None	Clear	None	279	2 9	ND	−0.1	ND	ND	ND	0.	ND	ND	22	ND (2 0	11	ND (0.	−2.5	20	ND (0.	ND (0	6	6.1	ND	ND	0.09	ND	ND	0.1	5.8	2.30	2.695971	-71.1 55601	duplicate of SLE3		na	na	na	Lawrence	0 01	0.01	Dry
9 22/09	Lawrence	SPR05	12:30	concrete	18	10	ght mu	None	Clear	Yes, pape	29870	18863	−0.05	0.25	0.05	7.02	>2	>3	2.26	6	21	−310	6900	−1.6	−5600	5500	6.3	ND (0	28000	2.	ND	ND	0.0	ND	0.22	0.32	28	3 80	2.70991636	-71.15129912	v deo taken of what l	pipe off Lawrence Ho	0.	19.1	888	Lawrence	0 01	0.01	Dry
9 22/09	Lowell	RMB1	13:20	open stream	na	None	light tea	Clear	None	16 2	199	ND	−0.1	0.031	0.138	ND	0.6	ND	−0.10	28	ND (2.1	10	ND (0.	−10	5	−0 28	ND (2	280	3.	ND	ND	0.06	ND	ND	0.1	8.5	0.80	2.633655	-71.302505	overturned barrel and	River Meadow Brook	0.5	16	1018	Lawrence	0 01	0.01	Dry
9 29/09	Milton	CunPk02	8:30	concrete	18	2	mild se	None	M ld	Leave, bu	195	6131	0.06	0.18	0.0 1	0.291	ND	0.2	ND	−0.1	8	ND (1 0	3.8	ND (0.2)	2.	15	ND (0.2)	11	−210	ND (0.2)	ND	ND	0.0	ND	ND	0.18	6.9	−7.5	2.251003	-71.051930	sample collected wh	about 1yard from out	0.	1 9	712	Boston-Log	0 51	0.57	Wet
9 29/09	Milton	CunPk03	9:30	open stream	na	None	None	Clear	Foam	116	2098	0.06	−0.1	0.038	0.206	ND	−0.1	ND	−0.30	25	na	na	na	na	na	na	na	na	na	na	ND	ND	0.05	ND	ND	0.21	8.9	−10.5	2.2 781922	-71.055 6 05	co lected close to outfall in pool		0.5	15.	933	Boston-Log	0 51	0.57	Wet
9 29/09	Norwood	PB02A	10: 5		18	5	None	None	Clear	None	68	98	ND	0.15	ND	0.1	ND	−0.1	ND	ND	39	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	0.1	2.8	−0.85	2.20 81659	-71.19661788	sampled r ght culvert		0.6	16 7	11 6	Norwood	0 5	0.63	Wet
9 29/09	Norwood	PB02B	11:00	open stream	na	None	light brow	Clear	None	1379	2420	−0.05	−0.1	0.875	0.139	ND	ND	ND	ND	39	na	na	na	na	na	na	na	na	na	ND	ND	0.13	ND	ND	0.16	3.3	−1.6	2.205098 1	-71.96 8 1	sample collected before two s eams mix		0.2	15 5	515	Norwood	0 5	0.63	Wet
9 29/09	Norwood	PB02	12:00		18	3	Septic	C oudy	very turb	None	48000	6131	0.07	0.25	0.05	0.695	ND	1	0.15	0.50	109	−27	500	−0.95	80	710	6.	89	−8700	ND (0.2)	ND	ND	0.17	ND	ND	0.07	3.8	ND	2.20 59	-71.19851	sample collected near culvert		0.3	17.	712	Norwood	0 5	0.63	Wet
9 29/09	Norwood	UR019	12:00		18	3	Septic	C oudy	very turb	None	88 0	5 75	0.09	0.25	0.061	0.556	ND	1.6	0.17	0.70	103	−30	550	−0.92	560	770	6.	100	−9 00	ND (0.2)	ND	ND	0.05	ND	ND	0.08	3.8	−1.7	2.20 59	-71.19851	duplicate of PB02		0.3	17.	712	Norwood	0 5	0.63	Wet

E. coli - co or key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, Black < 235 col/100ml
Entero - color key: Red ≥ 1000 col/100ml, Orange ≥ 350 Ye low ≥ 61 col 100ml, B ack < 61 col/100ml
NH3 - color key: Red ≥ 6 mg L, Orange ≥ 3 mg/L, Ye low ≥ 0.5 mg/L, Black < 0.5 mg/L
Surfactants – co or key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0 25 mg/L, Black < 0.25 mg/L *** may give false posi ive at sa in ty grea er than 1 ppt
C 2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yellow ≥ 0 02 mg/L, Black < 0.02 mg/L
Fluoride - color key: Red ≥ 2.0 mg/L, Orange ≥ 1.0 mg/L, Ye low ≥ 0.5 mg/L, Black < 0.5 mg/L
Potassium - Red ≥ 20.0 mg/L, Orange ≥ 10 mg/L, Yellow ≥ 6 mg/L, Black < 6 mg/L

REPOR ING LIMI S

E. coli = MPN 100mL
Enterococcus = 10 MPN/100mL
Surfactants Alpha = 0 05 mg/L (Except where otherwise n
Surfactants Field = 0.1 mg/L
Surfactant DR-850 = 0 02 mg/L
Ammonia (Alpha) = 0.075 mg/L
Ammonia Fie d = 0.1 mg/L
Ammonia Nessler = 0.2 mg/L
Ammonia DR-850 = 0.08 mg/L
Ammonia Test Strip = 0.1 mg/L

To al Phosphorus = 5 ug/L
CL2 (Total Residual) = 0.02 mg/L
CL2 (Residual Free) = 0 05 mg/L
CL2 Field = 0.02 mg/L
CL2 Test Strip =
Flouride Alpha= 0.20 mg/L
Flouride DR-850 = 0.05 mg/L (Except where otherwise no ed)
Potassium = 2.5 mg/L
Potassium Fie d = 0.2 mg/L
Nitrogen, Nitrate/Nitr te = 0.10 mg/l

ND – not detected above the associated detection l mit
NA – not applicable (analyte not tested for at that site at this time)
( ) data reported as estimate

Urban Rivers Stormwater Outfall Inspection & Sampling Summary

Location				Outfall		Inspection					Sampling										Coordinates				YSI Meter			Weather			
															Field Kits				Test Strips												
Date	Town	Site Name	Time	Pipe Mat.	Dia. (in)	Est. Flow gpm	Odor	Color	Turbidity	Floatables	Sampler	E.coli (cfu / 100ml)	Entero (cfu / 100ml)	Lab PPCP	Surfact. mg/L	NH3 mg/L	Cl2 mg/L	K mg/L	NH3 mg/L	Cl2 mg/L	GPS North(+)	GPS West (-)	Comments	ditional Location Informa	Salinity ppt	Temp C	Condu uS	Rain G Locatio	24hrs inches	48hrs inches	et/Dry
6/10/09	Lawrence	Shaw1	12:30	pen strea	na		musty	tea	yes	None	TB	353	NA	NA	0.05	.5 nessl	NA	1.65	ND	ND	42.703501	-71.139591	Shawsheen River	Under 495/RR tracks off Sutto	0.3	16.6	700	Lawrence	0.1	0.1	Wet
6/10/09	Lawrence	SLE1	12:58	pen strea	na		None	light tea	Clear	None	LB	251	NA	NA	0.10	.4 nessl	NA	0.35	ND	ND	42.696201	-71.1459901	Combined sample from SLE2 and	Behind S. Lawrence elementa	0.3	16.7	577	Lawrence	0.1	0.1	Wet
6/10/09	Lawrence	SLE2	13:02	pen strea	na		None	light tea	Clear	None	LB	328	NA	NA	0.05	.5 nessl	NA	2.35	ND	ND	42.696209	-71.1457001	Shawsheen River	main stream sample before co	0.3	16.7	679	Lawrence	0.1	0.1	Wet
6/10/09	Lawrence	SLE3	13:11	CM	36	strong musty		None	Clear	None	TB	616	NA		0.10	.6 nessl	NA	5.05	ND	ND	42.695971	-71.1455601	strong flow, lots and lots of gray s	Concrete outfall metal grate co	0.5	14.1	1078	Lawrence	0.1	0.1	Wet
8/19/09	Lawrence	SPR01	7:55	open stream			None	None	Clear	None	LB	96	NA	NA	ND	ND	NA	NA	ND	ND	42.70688	-71.1476552	downstream of waterfall and Spik	confluence of canal & Spikett	0.1	26.5	188	Lawrence	0	0	Dry
8/19/09	Lawrence	SPR02	8:00	open stream			musty	None	Clear	None	LB	96	NA	NA	0.10	ND	NA	NA	0.10	ND	42.7070375	-71.1481583	some algae on streambed, water	just down stream of canal wat	0.1	25.6	192.9	Lawrence	0	0	Dry
8/19/09	Lawrence	SPR03	8:10	pen stream			None	None	Clear	ome suds	TB	319	NA	NA	0.10	ND	NA	NA	ND	ND	42.7074775	-71.1484665	shallow 1' aglae on rocks, some s	Upstream (~50') of Spickett R	0.2	23.2	480	Lawrence	0	0	Dry
8/19/09	Lawrence	SPR04	8:15	m concrete pipe			None	None	Clear	None	LB	ND	NA	NA	ND	NA	NA	NA	ND	ND	42.7072588	-71.1480978	on Merrimack river side	leaky pipe under Spickett Rive	0.1	22.6	230	Lawrence	0	0	Dry
8/19/09	Lawrence	SPR05	8:55	concrete	18"	10	ight sewa	None	Clear	None	LB	1741	NA	NA	0.25	0.6	na	NA	4.00	ND	42.7099164	-71.1512991	tace hemoglobin off urine test stri	pipe off Lawrence Hospital	1.2	22.6	2291	Lawrence	0	0	Dry
8/19/09	Lawrence	Shaw01	9:40	cement	8) 15' x 15'		None	med tea	cloudy	suds and	LB	157	NA	NA	0.10	NA	NA	NA	0.10	ND	42.7051688	-71.1400548	waded in, about 400' long channe	mouth of Shawsheen river, sa	0.3	24.6	633	Lawrence	0	0	Dry
8/19/09	Lawrence	UR012	9:40	cement	8) 15' x 15'		None	med tea	cloudy	suds and	LB	174	NA	NA	NA	NA	NA	NA	NA	NA	42.7051688	-71.1400548	duplicate of Shaw01		na	na	na	Lawrence	0	0	Dry
8/19/09	Lawrence	SLE3	10:20	ment ou	3'	trong, musty sew		None	Clear	None	TB	34	NA	NA	0.20	NA	NA	NA	ND	ND	42.695971	-71.1455601	took additional photos	South Lawrence Elementary, l	0.5	15.5	1072	Lawrence	0	0	Dry

E. coli - color key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, Black < 235 col/100ml
Entero - color key: Red ≥ 1000 col/100ml, Orange ≥ 350 Yellow ≥ 61 col/100ml, Black < 61 col/100ml
NH_3 - color key: Red ≥ 10 mg/L, Orange ≥ 3 mg/L, Yellow ≥ 0.5 mg/L, Black < 0.5 mg/L
Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.25 mg/L, Black < 0.25 mg/L
Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.02 mg/L, Black < 0.02 mg/L
Fluoride - color key: Red ≥ 2.0 mg/L, Orange ≥ 1.0 mg/L, Yellow ≥ 0.5 mg/L, Black < 0.5 mg/L
Potassium - Red ≥ 20.0 mg/L, Orange ≥ 10 mg/L, Yellow ≥ 6 mg/L, Black < 6 mg/L

Surfactant reading given as estimates (actual steps 0, 0.25, 0.5, 0.75, 1, 1.5, 2, 3)
Ammonia test strip reading given as estimates (actual steps 0, 0.25, 0.5, 1, 3, 6)

REPORTING LIMITS
E. coli = 4 MPN/100mL
Enterococcus = 10 MPN/100mL
Surfactants Field = 0.05 mg/L
Ammonia Field = 0.05 mg/L
Ammonia Nessler = 0.2 mg/L
Ammonia Test Strip = 0.1 mg/L
CL2 Test Strip =
Potassium Field = 0.2 mg/L

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Urban Rivers Stormwater Outfall Inspection & Sampling Summary

Location				Sampling										Coordinates		Comments
Date	Town	Site Name	Time	E.coli (cfu / 100ml)	Coliform (cfu / 100ml)	NH3 mg/L Alpha	NH3 mg/L Hach	Surfact. mg/L	OB	TSS	BOD	Cl2 mg/L	TP mg/L	GPS North(+)	GPS West (-)	
7/21/08	Chelsea	IsEnd01	11:20	2595	NA	ND	NA	0.08	87.5	NA	NA	NA	NA	42.394445	71.049817	End of beachum and
7/21/08	Chelsea	IsEnd02	11:25	3080	NA	ND	NA	0.19	213	NA	NA	NA	NA	42.394436	71.049780	End of beachum and
7/21/08	Chelsea	IsEnd04	11:30	>241960	NA	13.0	NA	0.14	20.0	NA	NA	NA	NA	42.394405	71.049676	End of beachum and
8/21/08	Chelsea	IsEnd04	10:35	2595	NA	2.68	NA	ND	178	NA	NA	NA	NA	42.394405	71.049676	End of beachum and
7/21/08	Chelsea	IsEnd04d	11:30	>241960	NA	13.5	NA	0.15	20.0	NA	NA	NA	NA	42.394405	71.049676	Duplicate
9/4/08	Chelsea	Mill	11:00	7945	NA	ND	NA	0.08	61.1	NA	NA	NA	NA	42.403301	71.017871	Mill Creek sample mid
7/21/08	Chelsea	Mill1	9:35	9330	NA	ND	NA	0.18	246	NA	NA	NA	NA	42.403156	71.018129	Broadway at New Cro
9/4/08	Chelsea	Mill1A	10:52	406	NA	0.78	NA	0.13	342	NA	NA	NA	NA	42.40334224	71.017761	Culvert across stream
7/21/08	Chelsea	Mill2	9:55	9678	NA	1.33	NA	0.18	308	NA	NA	NA	NA	42.403340	71.020587	(Gillooly) Cabot St bel
9/4/08	Chelsea	Mill2	11:20	38	NA	4.12	NA	0.24	324	NA	NA	ND	NA	42.403340	71.020587	(Gillooly) Cabot St bel
9/4/08	Chelsea	Mill2d	11:20	54	NA	4.01	NA	0.22	309.0	NA	NA	ND	NA	42.403340	71.020587	Duplicate
7/21/08	Chelsea	Mill3	10:10	15530	NA	ND	NA	0.09	170	NA	NA	NA	NA	42.407977	71.027112	Downstream of Rev06
8/21/08	Chelsea	Mill3	9:55	1844	NA	0.27	NA	0.07	66.6	NA	NA	NA	NA	42.407977	71.027112	Downstream of Rev06
8/21/08	Chelsea	Mill3A	10:04	271	NA	ND	NA	0.06	29.2	NA	NA	NA	NA	42.407993	71.027011	Small culvert opening
7/21/08	Chelsea	Mill4	10:35	3266	NA	ND	NA	0.11	266	NA	NA	NA	NA	42.410125	71.028722	Head of Millcreek
7/21/08	Chelsea	Rev06	10:30	7945	NA	ND	NA	0.08	185	NA	NA	NA	NA	42.409914	71.028297	Downstream of Mill04
7/21/08	Boston	Bos014	8:10	3266	NA	ND	NA	0.08	103	NA	NA	NA	NA	42.382423	71.027076	Upstream of Condor U
7/21/08	Boston	Con	7:55	54750	NA	ND	NA	0.09	101	NA	NA	NA	NA	42.383054	71.030131	Condor Urban Wild, o
8/21/08	Everett	AF1	11:56	138	NA	0.41	NA	0.14	213	NA	NA	NA	NA	42.407709	71.069853	Down Air force road b
8/21/08	Everett	Floyd	11:15	48	NA	0.11	NA	0.05	35.7	NA	NA	NA	NA	42.412663	71.069288	Culvert near Madeline
8/21/08	Everett	IsEnd03A	10:45	11870	NA	0.82	NA	0.11	138	NA	NA	NA	NA	42.399997	71.053984	Where stream exits u
9/4/08	Everett	IsEnd03A	9:57	86640	NA	1.03	NA	0.11	88.4	NA	NA	NA	NA	42.399997	71.053984	Where stream exits u
9/22/08	Everett	IsEnd03A	11:40	6932	NA	0.542	1.70	0.14	96.6	NA	NA	0.06	NA	42.399997	71.053984	Where stream exits u
8/21/08	Everett	IsEnd03B	10:50	3266	NA	1.17	NA	0.08	NA	NA	NA	0.10	NA	42.400115	71.050172	small pipe near IsEnd
9/4/08	Everett	IsEnd03B	9:58	9678	NA	0.56	NA	0.09	63.4	NA	NA	NA	NA	42.400115	71.050172	small pipe near IsEnd
9/22/08	Everett	IsEnd03B	11:42	1164	NA	0.48	NA	0.11	55.8	NA	NA	NA	NA	42.400115	71.050172	small pipe near IsEnd
8/4/08	Lawrence	SP01	7:16	458	NA	ND	NA	0.08	165	NA	NA	NA	NA	42 42'31.12"	71 9'1.07"	Channel
8/4/08	Lawrence	SP02	7:40	445	NA	ND	NA	0.08	165	NA	NA	NA	NA	42.711980	71.152671	Fulton Street
8/4/08	Lawrence	SP03	8:00	395	NA	ND	NA	0.07	161	NA	NA	NA	NA	42.714655	71.156191	Brook Street
8/4/08	Lawrence	SP04	8:23	12	NA	ND	NA	0.24	233	NA	NA	ND	NA	42 42'49.21"	71 10'21.11"	Exchange Street outfa
8/4/08	Lawrence	SP05	8:35	363	NA	ND	NA	0.07	160	NA	NA	NA	NA	42 42'49.31"	71 10'20.89"	Exchange Street
8/21/08	Malden	TLB2	8:47	312	NA	1.44	NA	0.10	154	NA	NA	NA	NA	42.424881	71.041827	Town Line Brook whe
9/4/08	Medford	Kohl01	8:40	68	NA	0.50	NA	0.09	382	NA	NA	NA	NA	42.40717819	71.090874	broken down culvert o
7/21/08	Medford	Mhb	12:30	7945	NA	ND	NA	0.06	98.2	NA	NA	NA	NA	42.419214	71.117619	Mystic Valley Pkwy (W
7/21/08	Medford	Mhb2	12:40	9678	NA	NA	NA	NA	203	NA	NA	NA	NA	42.419214	71.117619	Culvert off Meeting He
9/4/08	Medford	Ship01	7:42	4	NA	0.49	NA	ND	11.1	NA	NA	0.63	NA	42.41539348	71.103014	Small pipe next to cul
8/21/08	Medford	Tufts	12:09	91	NA	0.19	NA	0.06	79.1	NA	NA	NA	NA	42.413180	71.076268	Little Creek near Tufts
9/4/08	Medford	WB01	7:08	6212	NA	0.40	NA	0.07	79.7	NA	NA	NA	NA	42 25'07.64	71 87'40.33	Whittmore Brook off A
8/25/08	Melrose	Ell1	11:15	1741	NA	ND	NA	0.53	63	NA	NA	NA	NA	42.461136	71.069376	Across from 50 Tremo
8/25/08	Melrose	Ell1d	11:15	1462	NA	ND	NA	0.21	62.5	NA	NA	NA	NA	42.461136	71.069376	Duplicate
8/25/08	Melrose	Ell2	11:20	716	NA	ND	NA	0.20	68.4	NA	NA	NA	NA	42.461136	71.069370	Across from 50 tremo
8/25/08	Melrose	Ell3	11:35	23820	NA	0.09	NA	0.07	162	NA	NA	NA	NA	42.461429	71.068840	culvert across from D
8/25/08	Melrose	Mal1	7:53	774	NA	0.12	NA	0.06	103	NA	NA	NA	NA	42.440652	71.070136	Malden River across f
8/25/08	Melrose	Mal2	9:08	749	NA	0.10	NA	0.06	97.5	NA	NA	NA	NA	42.444227	71.069626	Just downstream of N
8/25/08	Melrose	Mal3	10:15	1462	NA	0.11	NA	0.06	83.2	NA	NA	NA	NA	42.449076	71.069831	Outlet of Malden Rive
8/25/08	Melrose	OM1	8:20	80	NA	0.14	NA	0.13	76.2	NA	NA	NA	NA	42.441688	71.071068	Old Mill at head of str
8/25/08	Melrose	OM2	8:15	25	NA	1.18	NA	0.16	162	NA	NA	NA	NA	42.441720	71.070899	Old Mill Sample small
8/25/08	Melrose	OM3	8:25	12	NA	ND	NA	ND	54.8	NA	NA	ND	NA	42.441687	71.071070	12inch clay pipe next
6/23/08	Melrose	Otis	8:50	3266	NA	0.77	NA	0.09	95.2	NA	NA	NA	NA	42.461342	71.075691	Corner of Otis and Ch
8/25/08	Melrose	Otis	11:52	96	NA	ND	NA	0.33	29.1	NA	NA	NA	NA	42.461342	71.075691	Corner of Otis and Ch
8/25/08	Melrose	Roo1	12:12	9678	NA	0.13	NA	0.08	153	NA	NA	NA	NA	42.464603	71.070066	Roosevelt School off E
8/25/08	Melrose	SP1	10:45	186	NA	0.15	NA	ND	33.5	NA	NA	NA	NA	42.455333	71.080747	Corner of Philips Rd &
6/30/08	Methuen	Mer1	8:43	1162	1495	ND	NA	0.05	224	NA	NA	NA	NA	42.743207	71.208453	walked in from small r
8/4/08	Methuen	Mer1	10:45	293	NA	ND	NA	0.07	137	NA	NA	NA	NA	42.743250	71.208438	walked in from small r
8/13/08	Methuen	MSPCA1	9:00	80	NA	ND	NA	NA	NA	NA	NA	NA	NA	42.729569	71.195557	mid-channel sample ju
8/13/08	Methuen	MSPCA3	9:30	81	NA	ND	NA	NA	NA	NA	NA	NA	NA	42.731521	71.200097	downstream side of 1s
8/13/08	Methuen	MSPCA4	9:40	54	NA	ND	NA	NA	NA	NA	NA	NA	NA	42.734448	71.199880	Just upstream of 2nd 1
8/13/08	Methuen	MSPCA5	9:55	136	NA	ND	NA	NA	NA	NA	NA	NA	NA	42.734293	71.199230	pond Northwest of MS
8/13/08	Methuen	MSPCA6	10:30	58	NA	ND	NA	NA	NA	NA	NA	NA	NA	42.734889	71.200300	~ 50m upsreatm of MS
8/13/08	Methuen	MSPCA7	10:40	20	NA	ND	NA	NA	NA	NA	NA	NA	NA	42.736056	71.201397	~100m upsreatm of MS
8/4/08	Methuen	SP06	9:05	342	NA	ND	NA	0.08	153	NA	NA	NA	NA	42.724919	71.183033	RT 28 castle park
8/4/08	Methuen	SP07	9:55	12	NA	ND	NA	0.05	49.2	NA	NA	~0.02	NA	42.727453	71.188366	Outfall downstream el
7/21/08	Revere	Hadd	9:00	612	NA	ND	NA	0.15	257	NA	NA	NA	NA	42.402480	71.010704	Revere Beach Parkwa
8/21/08	Revere	LinB	7:55	2190	NA	0.27	NA	0.07	79	NA	NA	NA	NA	42.434553	71.020547	Linden Brook as it day
8/21/08	Revere	Rt1trib	8:10	351	NA	0.14	NA	0.07	83.7	NA	NA	NA	NA	42.434497	71.020322	Tributary to Linden Br
8/21/08	Revere	TLB1	8:25	3266	NA	0.30	NA	0.08	153	NA	NA	NA	NA	42.433793	71.021460	Town Line Brook at ho
8/21/08	Revere	trifone	9:20	14010	NA	0.11	NA	0.06	96.8	NA	NA	NA	NA	42.425568	71.026803	Stream at the of Amel
6/30/08	Salem, NH	Mer2	9:06	288	694	ND	NA	0.05	195	NA	NA	NA	NA	42.755268	71.207933	Walked in behind auto
8/4/08	Salem, NH	Mer2	12:02	302	NA	ND	NA	0.07	127	NA	NA	NA	NA	42.755035	71.208086	Walked in behind auto
6/30/08	Salem, NH	Mer3	9:35	590	590	ND	NA	0.07	303	NA	NA	NA	NA	42.762503	71.222746	Parked at Lancelot Co
6/30/08	Salem, NH	Mer4	10:00	580	590	ND	NA	0.06	298	NA	NA	NA	NA	42.763121	71.232673	Parked at Uncle Bob's
6/30/08	Salem, NH	Mer4d	10:00	631	811	ND	NA	0.07	306	NA	NA	NA	NA	42.763121	71.232673	Parked at Uncle Bob's
6/30/08	Salem, NH	Mer5	10:27	883	739	ND	NA	0.06	340	NA	NA	NA	NA	42.767438	71.223016	Parked behind Kohl's
6/30/08	Salem, NH	Mer6	11:05	775	955	ND	NA	0.07	355	ND	NA	NA	NA	42.774065	71.224326	Parked at Salem Man
6/30/08	Salem, NH	Mer6A	10:55	802	847	ND	NA	0.07	385	ND	NA	NA	NA	42.774045	71.224331	Parked at Salem Man

6/30/08	Salem, NH	Mer7	11:30	775	955	ND	NA	0.05	267	ND	NA	NA	NA	42.778121	71.227147	Parked across from no
6/30/08	Salem, NH	Mer8	11:51	568	649	ND	NA	0.05	257	ND	NA	NA	NA	42.776593	71.231045	West side of Rt 38 wh
8/4/08	Salem, NH	SP08	11:43	464	NA	0.108	NA	0.07	127	NA	NA	NA	NA	42.751038	71.212086	Spencer Street
8/4/08	Salem, NH	SP08d	11:43	847	NA	ND	NA	0.07	128	NA	NA	NA	NA	42.751038	71.212086	duplicate
6/23/08	Stoneham	100A	11:00	14400	NA	ND	NA	0.19	246	NA	NA	NA	NA	42.4787841	71.1131562	Sweetwater Brook wes
9/15/08	Stoneham	100A	9:42	1642	NA	ND	NA	0.07	135	NA	NA	NA	NA	42.4787841	71.1131562	Sweetwater Brook wes
6/23/08	Stoneham	1Linden	11:16	6932	NA	ND	NA	0.20	243	NA	NA	NA	NA	42.4824877	71.1060371	Sweetwater Brook @
9/15/08	Stoneham	1Linden	9:54	1549	NA	ND	NA	0.06	122	NA	NA	NA	NA	42.4824877	71.1060371	Sweetwater Brook @
9/15/08	Stoneham	1Lindend	9:54	1844	NA	ND	NA	0.05	122	NA	NA	NA	NA	42.4824877	71.1060371	Duplicate
6/23/08	Stoneham	1West	11:42	14100	NA	0.410	NA	0.29	305	NA	NA	~0.02	NA	42.4826072	71.1046187	Unnamed tributary to
7/15/08	Stoneham	1West	7:57	3266	NA	ND	0.00	0.05	36.2	NA	NA	~0.02	NA	42.4826072	71.1046187	Unnamed tributary to
8/12/08	Stoneham	1West	7:29	4813	NA	0.18	NA	NA	147	NA	NA	~0.02	NA	42.4826072	71.1046187	Unnamed tributary to
9/22/08	Stoneham	1West	10:45	54750	NA	ND	0.30	0.05	24	NA	NA	0.09	NA	42.4826072	71.1046187	Unnamed tributary to
6/23/08	Stoneham	2dLinden	12:02	13700	NA	ND	NA	0.30	336	NA	NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @
9/22/08	Stoneham	2dLinden	9:56	3266	NA	0.098	0.40	0.06	56.7	NA	NA	0.10	NA	42.483930	71.1039388	Duplicate
7/15/08	Stoneham	2Lincul	8:20	430	NA	ND	NA	0.06	40.7	NA	NA	NA	NA	42.484141	71.103935	Inside culvert upstrea
9/22/08	Stoneham	2Lincul	10:10	9678	NA	0.078	0.55	0.06	23.4	NA	NA	0.03	NA	42.484141	71.103935	Inside culvert upstrea
6/23/08	Stoneham	2Linden	12:02	9600	NA	ND	NA	0.32	361	NA	NA	ND	NA	42.483930	71.1039388	Sweetwater Brook @
7/15/08	Stoneham	2Linden	8:15	689	NA	ND	0.00	0.05	83.5	NA	NA	ND	NA	42.483930	71.1039388	Sweetwater Brook @
8/12/08	Stoneham	2Linden	7:18	8800	NA	0.37	NA	0.14	108	NA	NA	ND	132	42.484033	71.103950	Sweetwater Brook @
9/22/08	Stoneham	2Linden	9:56	2747	NA	0.217	0.40	0.07	55.4	NA	NA	0.10	NA	42.483930	71.1039388	Sweetwater Brook @
9/11/08	Waltham	1st	13:28	455	NA	ND	NA	0.14	130	NA	NA	NA	NA	42.397176	-71.265148	across street from 55
9/11/08	Waltham	BB1	12:05	2595	NA	ND	NA	0.12	354	NA	NA	NA	NA	42.381368	-71.213770	Beaver Brook just ups
9/11/08	Waltham	CB1	12:59	310	NA	ND	NA	0.09	274	NA	NA	0.03	NA	42.381687	-71.233383	DPW outfall flowing in
9/11/08	Waltham	CB1d	12:59	319	NA	ND	NA	0.11	278	NA	NA	0.03	NA	42.381687	-71.233383	Duplicate
9/11/08	Waltham	Pars	12:01	714	NA	ND	NA	0.07	36.9	NA	NA	NA	NA	42.381394	-71.213800	Edwin Rd and Parson
9/11/08	Waltham	Wal23	11:10	4185	NA	ND	NA	0.09	71.8	NA	NA	ND	NA	42.367267	-71.218116	Intersection of Pleasa
9/11/08	Watertown	LB1	9:41	2190	NA	ND	NA	0.05	211	NA	NA	0.10	NA	42.364733	-71.189067	Laundry Brook just off
9/11/08	Watertown	Saw1	8:08	395	NA	ND	NA	0.09	162	NA	NA	NA	NA	42.361991	-71.147963	Corner of Greenough
9/11/08	Watertown	Saw2	9:04	416	NA	ND	NA	0.09	111	NA	NA	NA	NA	42.363675	-71.155668	Outfall - So. Sawins B
9/11/08	Watertown	Wat5	10:25	222	NA	ND	NA	0.08	212	NA	NA	NA	NA	42.367449	-71.198957	Culvert on right, 290 R
9/11/08	Watertown	Wat6	10:27	260	NA	ND	NA	0.12	225	NA	NA	NA	NA	42.367489	-71.198853	Culvert on left, 290 Pl
6/23/08	Winchester	62Sun	9:30	533	NA	ND	NA	ND	179	NA	NA	NA	NA	42.4733306	71.1187503	unnamed stream in W
7/28/08	Winchester	M01	7:35	2452	NA	ND	NA	0.09	124	NA	NA	NA	NA	42.441521	71.149149	Sandy Beach Location
7/28/08	Winchester	M02	7:58	4813	NA	ND	NA	0.09	133	NA	NA	NA	NA	42.442878	71.142845	Mystic River pkwy, un
7/28/08	Winchester	M03	8:14	3683	NA	ND	NA	0.09	132	NA	NA	NA	NA	42.444363	71.138845	commuter rail station
7/28/08	Winchester	M04	8:31	156	NA	ND	NA	0.07	84.6	NA	NA	NA	NA	42.455647	71.137980	Main street bridge bet
7/28/08	Winchester	M05	8:42	126	NA	ND	NA	0.06	88.6	NA	NA	NA	NA	42.456789	71.138966	bridge across from W
7/28/08	Winchester	M06	9:10	44	NA	ND	NA	0.06	82.6	NA	NA	NA	NA	42.464865	71.151279	Horn Pond outlet, lake
7/28/08	Winchester	M07	9:26	4813	NA	ND	NA	0.08	155	NA	NA	NA	NA	42.456149	71.136269	ambient stream samp
8/25/08	Winchester	M07	12:55	806	NA	0.24	NA	0.07	122	NA	NA	NA	NA	42.456149	71.136269	ambient stream samp
7/28/08	Winchester	M08	9:40	64	NA	3.11	NA	0.07	145	NA	NA	ND	NA	42.456399	71.136447	small pipe exiting ball
9/4/08	Winchester	M08A	12:15	408	NA	0.994	NA	0.25	99.3	NA	NA	NA	NA	42.456365	71.136337	flow from directly und
7/28/08	Winchester	M09	9:55	6212	NA	ND	NA	0.07	157	NA	NA	NA	NA	42.460935	71.137149	down street from Abe
7/28/08	Winchester	M10	10:16	5654	NA	ND	NA	0.06	157	NA	NA	NA	NA	42.464339	71.132424	Tufts school behind s
7/28/08	Winchester	M10a	10:30	162	NA	ND	NA	0.07	81.4	NA	NA	NA	NA	42.464200	71.131111	Tufts school stream ne
7/28/08	Winchester	M11	10:48	241	NA	ND	NA	0.07	122	NA	NA	NA	NA	42.468186	71.130921	park near Forest rd, o
7/28/08	Winchester	M11d	10:48	248	NA	ND	NA	0.09	120	NA	NA	NA	NA	42.468186	71.130921	Duplicate
7/28/08	Winchester	M12	11:35	6932	NA	ND	NA	0.05	165	NA	NA	NA	NA	42.469507	71.125285	behind hospital, MyR
9/15/08	Winchester	M12	8:25	7945	NA	0.63	NA	0.09	268	NA	NA	NA	NA	42.469507	71.125285	behind hospital, MyR
7/28/08	Winchester	M13	12:31	248	NA	NA	NA	NA	56.8	NA	NA	NA	NA	42.467019	71.120658	outlet to resevoir
9/15/08	Winchester	MO5	8:00	373	NA	ND	NA	0.07	148	NA	NA	NA	NA	42.456789	71.138966	bridge across from W
9/15/08	Winchester	MO8	7:35	7945	NA	0.615	NA	0.08	250	NA	NA	NA	NA	42.456399	71.136447	small pipe exiting ball
9/15/08	Winchester	MO8main	7:40	5654	NA	0.876	NA	0.08	259	NA	NA	NA	NA	42.456425	71.136466	Main stream next to M
6/23/08	Woburn	1Kraft	10:17	5654	NA	ND	NA	0.27	346	NA	NA	NA	NA	42.4770646	71.1175936	Sweetwater Brook jus
9/15/08	Woburn	1Kraft	8:50	767	NA	ND	NA	0.09	131	NA	NA	NA	NA	42.4770646	71.1175936	Sweetwater Brook jus
6/23/08	Woburn	1Merrell	10:00	2069	NA	0.76	NA	0.10	244	NA	NA	NA	NA	42.4764251	71.1182001	Aberjona mainstem in
9/15/08	Woburn	1Merrell	8:40	6212	NA	0.776	NA	0.08	274	NA	NA	NA	NA	42.4764251	71.1182001	Aberjona mainstem in
6/23/08	Woburn	2Merrell	10:23	2190	NA	0.41	NA	0.08	236	NA	NA	NA	NA	42.477141	71.1176671	Aberjona upstream o
7/15/08	Woburn	Aber	9:20	408	NA	ND	NA	0.06	194.3	NA	NA	NA	NA	42.493138	71.124117	Washington street cor
7/15/08	Woburn	Burb	9:08	599	NA	ND	0.00	0.06	197.0	NA	NA	NA	NA	42.491300	71.127027	Operator of AMR gra
7/15/08	Woburn	Fit	10:55	152	NA	3.91	>3	0.09	226.0	NA	NA	NA	NA	42.501121	71.134909	near 60 Olympia Ave
7/15/08	Woburn	Fitd	10:55	152	NA	3.94	>3	0.08	228.7	NA	NA	NA	NA	42.501121	71.134909	Duplicate
9/15/08	Woburn	McDO1	9:20	5654	NA	1.02	NA	0.09	278	NA	NA	NA	NA	42.478598	71.118001	
8/12/08	Woburn	Mys 9	9:15	445	NA	NA	NA	NA	89.3	NA	NA	NA	59	42.520981	71.147709	Upstream of Mys 8 wi
7/10/08	Woburn	Mys1	8:15	7945	NA	2.37	NA	0.09	334	NA	NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis
7/15/08	Woburn	Mys1	11:15	164	NA	3.46	>3	0.08	237.0	NA	NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis
8/12/08	Woburn	Mys1	8:35	3922	NA	NA	NA	NA	185	NA	NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis
7/10/08	Woburn	Mys10	11:13	2452	NA	1.25	NA	0.06	339	ND	2.50	NA	NA	42.517881	71.150535	Just upstream from M
8/12/08	Woburn	Mys10	10:00	4480	NA	NA	NA	NA	175	NA	NA	NA	18	42.517881	71.150535	Upstream of Mys 7 an
7/10/08	Woburn	Mys2	8:45	1230	NA	3.70	NA	0.08	116	NA	NA	NA	NA	42.513504	71.138870	74 Commerce Way (M
7/10/08	Woburn	Mys3	9:11	6932	NA	ND	NA	0.08	307	NA	NA	NA	NA	42.515744	71.136289	Marshall's shipping lot
7/10/08	Woburn	Mys4	9:20	5199	NA	0.50	NA	0.10	289	NA	NA	NA	NA	42.516016	71.136885	Across Street from las
7/10/08	Woburn	Mys5	9:38	239	NA	ND	NA	ND	175	NA	NA	NA	NA	42.517193	71.141968	Turn on Atlantic Ave p
7/10/08	Woburn	Mys6	9:56	2452	NA	0.73	NA	0.08	296	NA	NA	NA	NA	42.513758	71.144110	where hulls brook cros
7/10/08	Woburn	Mys7	10:18	27230	NA	4.29	NA	0.07	396	ND	6.30	NA	NA	42.518563	71.146526	New Boston St where
8/12/08	Woburn	Mys7	8:46	111990	NA	NA	NA	NA	236	NA	NA	NA	181	42.518563	71.146526	New Boston St where
9/22/08	Woburn	Mys7	8:09	3080	NA	6.22	>3	0.06	121	NA	NA	ND	NA	42.518563	71.146526	New Boston St where
8/12/08	Woburn	Mys71	9:50	57940	NA	106.00	NA	0.16	329	NA	NA	NA	196	42.518477	71.148139	Stream entering upstr
9/22/08	Woburn	Mys71	9:00	3466	NA	124	NA	0.18	582	NA	NA	NA	NA	42.518477	71.148139	Stream entering upstr
8/12/08	Woburn	Mys72	9:45	32550	NA	3.30	NA	0.08	176	NA	NA	NA	27	42.518433	71.148226	upstream from 7 and

9/22/08	Woburn	Mys72	8:51	395	NA	4.45	NA	0.07	112	NA	NA	NA	NA	42.518433	71.148226	upstream from 7 and 7
7/10/08	Woburn	Mys8	10:30	41060	NA	4.57	NA	0.06	192	10.0	4.90	NA	NA	42.518739	71.146411	Opposite stream from
8/12/08	Woburn	Mys8	8:47	1954	NA	16.40	NA	0.06	92.5	NA	NA	NA	34	42.518739	71.146411	Opposite stream from
8/12/08	Woburn	Mys81	9:10	992	NA	15.10	NA	0.06	88.7	NA	NA	NA	41	42.519578	71.146937	Just upstream from M
7/10/08	Woburn	Mys8d	10:30	41060	NA	4.52	NA	0.06	178	12.0	3.20	NA	NA	42.518739	71.146411	Duplicate
8/12/08	Woburn	Mys8d	8:47	1954	NA	16.90	NA	0.05	88.5	NA	NA	NA	35	42.518739	71.146411	Duplicate
7/10/08	Woburn	Mys9	10:45	1549	NA	4.93	NA	0.06	190	ND	ND	NA	NA	42.520981	71.147709	Just upstream from M
7/15/08	Woburn	Olym	10:35	606	NA	ND	0.50	0.09	123.9	NA	NA	NA	NA	42.500145	71.141333	Olympia Ave
8/12/08	Woburn	Olym1	10:45	3922	NA	0.26	NA	0.12	188	NA	NA	NA	51	42.498925	71.137440	Olympia Ave, just dov
9/15/08	Woburn	Olym1	11:31	258	NA	ND	NA	0.08	272	NA	NA	NA	NA	42.498925	71.137440	Olympia Ave, just dov
9/15/08	Woburn	Olym2	11:20	568	NA	ND	NA	0.08	266	NA	NA	NA	NA	42.497445	71.134658	Off Olym Ave back o
9/22/08	Woburn	Olym2	7:46	1549	NA	0.196	NA	0.09	104	NA	NA	NA	NA	42.497445	71.134658	Off Olym Ave back o
7/15/08	Woburn	Sal	9:40	430	NA	1.84	NA	0.09	231.5	NA	NA	NA	NA	42.491580	71.128834	1921yr culvert
7/15/08	Woburn	US1	9:55	125	NA	ND	0.30	0.07	108.3	NA	NA	NA	NA	42.495445	71.134031	behind United Station
7/15/08	Woburn	US2	10:05	740	NA	ND	0.60	1.60	117.8	NA	NA	NA	NA	42.495411	71.133994	closer to culvert than
8/12/08	Woburn	US3	7:53	>241960	NA	0.14	NA	0.18	120	NA	NA	NA	NA	42.495550	71.133700	Blue culvert across R
9/15/08	Woburn	US3	10:38	7945	NA	ND	NA	0.08	128	NA	NA	NA	NA	42.495550	71.133700	Blue culvert across R
9/22/08	Woburn	US3	7:14	1140	NA	0.132	0.45	0.07	55.7	NA	NA	0.05	NA	42.495550	71.133700	Blue culvert across R
8/12/08	Woburn	US4	8:03	198630	NA	0.12	NA	0.17	117	NA	NA	NA	NA	42.495400	71.133700	Culvert just 5 ft south
9/15/08	Woburn	US4	10:41	1164	NA	ND	NA	0.09	162	NA	NA	NA	NA	42.495400	71.133700	Culvert just 5 ft south
9/15/08	Woburn	US5	10:47	2595	NA	ND	NA	0.07	129	NA	NA	NA	NA	42.495412	71.134111	Upstream of US3, sar
9/22/08	Woburn	US5	7:24	1102	NA	0.109	NA	0.08	55.4	NA	NA	NA	NA	42.495412	71.134111	Upstream of US3, sar
7/15/08	Woburn	WashC	8:55	316	NA	1.32	2.20	0.07	220.5	NA	NA	NA	NA	42.485896	71.120882	Wash Cir, just off Wa

Additional Location Information	Weather			
	Rain Gauge	24hrs	48hrs	Wet/Dry?
	Location	inches	inches	
(closest to road) stron	Boston-Logan	1.28	1.28	Wet
(midpoint from road) s	Boston-Logan	1.28	1.28	Wet
(farthest from road) s	Boston-Logan	1.28	1.28	Wet
not quite as black as l	Boston-Logan	0	0	Dry
Duplicate	Boston-Logan	1.28	1.28	Wet
Clear flow, low flow ro	Boston-Logan	0	0	Dry
Outfall on opposite st	Boston-Logan	1.28	1.28	Wet
Lots of orange flock a	Boston-Logan	0	0	Dry
Sewage odor (Gillool	Boston-Logan	1.28	1.28	Wet
water looks clear. Flo	Boston-Logan	0	0	Dry
	Boston-Logan	0	0	Dry
Plaque covering outfa	Boston-Logan	1.28	1.28	Wet
Very little flow, greeni	Boston-Logan	0	0	Dry
water clea,r gray bact	Boston-Logan	0	0	Dry
	Boston-Logan	1.28	1.28	Wet
- walked culvert	Boston-Logan	1.28	1.28	Wet
White plaque coverin	Boston-Logan	1.28	1.28	Wet
Sewage odor, plaque	Boston-Logan	1.28	1.28	Wet
Scum on top, some pe	Boston-Logan	0	0	Dry
1/4" growth/deposit of	Boston-Logan	0	0	Dry
orange all over the ro	Boston-Logan	0	0	Dry
very silty, bacteria and	Boston-Logan	0	0	Dry
plaque accumulation,	Boston-Logan	0.31	0.31	Wet
very orange, very turb	Boston-Logan	0	0	Dry
orange, slimy, and ve	Boston-Logan	0	0	Dry
orange, slimy, and ve	Boston-Logan	0.31	0.31	Wet
No GPS taken at site, no satellites avail		0.12		Wet
No noticable odor to stream.		0.12		Wet
No noticable odor to stream.		0.12		Wet
No odor, a little foam though		0.12		Wet
No noticable odor to stream.		0.12		Wet
Orange floc, oil slick,	Boston-Logan	0	0	Dry
culvert has collapsed	Boston-Logan	0	0	Dry
Pretty clear	Boston-Logan	1.28	1.28	Wet
Strong sewage odor c	Boston-Logan	1.28	1.28	Wet
Very fresh smelling	Boston-Logan	0	0	Dry
slight film on top of wa	Boston-Logan	0	0	Dry
Some plaque on rocks	Boston-Logan	0	0	Dry
slight flow, clear	Bedford	0.01	0.02	Dry
	Bedford	0.01	0.02	Dry
flow appeared to chan	Bedford	0.01	0.02	Dry
flow clear, some algae	Bedford	0.01	0.02	Dry
6-8" in depth, slight tu	Bedford	0.01	0.02	Dry
sampled western char	Bedford	0.01	0.02	Dry
Highly turbid - orange	Bedford	0.01	0.02	Dry
flow 3x-4x in matter o	Bedford	0.01	0.02	Dry
~2 gal/min. entering c	Bedford	0.01	0.02	Dry
2 or 3gal/min, clear flo	Bedford	0.01	0.02	Dry
4 gal/min flow est, Mu	Boston-Logan	0	0	Dry
Had to move manhole	Bedford	0.01	0.02	Dry
Trash gate clogged ~S	Bedford	0.01	0.02	Dry
downstream of spot p	Bedford	0.01	0.02	Dry
Dry weather during sampling		0.43		Wet
Right on MA/NH border		0.12		Wet
ıst past RR bridge		0.48	0.38	Wet
t 113 bridge		0.48	0.38	Wet
113 bridge		0.48	0.38	Wet
Pond entirely covered in duck weed		0.48	0.38	Wet
SPCA		0.48	0.38	Wet
SPCA		0.48	0.38	Wet
No noticable odor to stream.		0.12		Wet
Possible stream culvert, lots of algae th		0.12		wet
White PVC beside br	Boston-Logan	1.28	1.28	Wet
Heavy silt deposits on	Boston-Logan	0	0	Dry
Good flow, high sedim	Boston-Logan	0	0	Dry
Very silty	Boston-Logan	0	0	Dry
Deer prints, low flow,	Boston-Logan	0	0	Dry
parts/glass stor on right after bridge beh		0.43		Wet
No noticable odor to stream.		0.12		Wet
urt apartments behind 1st bu8ilding on le		0.43		Wet
storage on left off So. Policy. Sampled		0.43		Wet
storage on left off So. Policy. Sampled		0.43		Wet
		0.43		Wet
No noticable odor to stream. Dark to m		0.43		Wet
No noticable odor to stream. Very dark		0.43		Wet

No noticable odor to stream. Low turbid		0.43		Wet
No noticable odor to stream. Low turbid		0.43		Wet
Took GPS from street, no satellites at s		0.12		Wet
		0.12		Wet
Slight musty odor	Boston-Logan	0.38	0.38	Wet
Clear flow, no obvious	Bedford	0.33	0.33	Wet
No odor	Boston-Logan	0.38	0.38	Wet
downstream	Bedford	0.33	0.33	Wet
Duplicate	Bedford	0.33	0.33	Wet
Medium sewage odor	Boston-Logan	0.38	0.38	Wet
Musty odor	Boston-Logan	0.07	0.07	Dry
Unnamed tributary to	Bedford	0.24	0.51	Wet
No distinct odor	Boston-Logan	0.31	0.31	Wet
Duplicate	Boston-Logan	0.38	0.38	Wet
Duplicate	Boston-Logan	0.31	0.31	Wet
sampled largest pipe -	Boston-Logan	0.07	0.07	Dry
flow about 2-3 gal/min	Boston-Logan	0.31	0.31	Wet
Slight odor coming fro	Boston-Logan	0.38	0.38	Wet
No odor	Boston-Logan	0.07	0.07	Dry
(0.1" 48hrs prior to sa	Bedford	0.24	0.51	Wet
Slightly musty odor	Boston-Logan	0.31	0.31	Wet
sampled pond as it flowed out into culve		0	0.35	Wet
water tannish tea color pretty clear, high		0	0.35	Wet
water fairly clear no odor		0	0.35	wet
		0	0.35	Wet
Walked in along stream, water was poss		0	0.35	Wet
Water flowing approx. 5 gal/min. Looks		0	0.35	Wet
Fairly clear, no odor waded to just outsid		0	0.35	wet
Green algae covering rocks, grayish tint		0	0.35	Wet
Good flow strong rushing water sound h		0	0.35	Wet
light tannish tint to water, medium suspe		0	0.35	Wet
very large snapping turtle half inside/ha		0	0.35	Wet
No odor	Boston-Logan	0	0	Dry
	Bedford	0.31	0.64	Wet
Downstream	Bedford	0.31	0.64	Wet
bacon street bridge M	Bedford	0.31	0.64	Wet
between car lot and g	Bedford	0.31	0.64	Wet
Wedge Pond inlet	Bedford	0.31	0.64	Wet
lake ave, near water	Bedford	0.31	0.64	Wet
Near Super Stop & S	Bedford	0.31	0.64	Wet
Murky, some foam on	Bedford	0.01	0.02	Dry
small pipe	Bedford	0.31	0.64	Wet
site has deep deposits	Boston-Logan	0	0	Dry
2 pipes on bridge bot	Bedford	0.31	0.64	Wet
Next to Amtrack rail	Bedford	0.31	0.64	Wet
ear bus circle	Bedford	0.31	0.64	Wet
on cross culvert unde	Bedford	0.31	0.64	Wet
Duplicate	Bedford	0.31	0.64	Wet
MyRWA baseline site	Bedford	0.31	0.64	Wet
High flow no distinct o	Bedford	0.33	0.33	Wet
Across from Highland	Bedford	0.31	0.64	Wet
High flow pretty clear	Bedford	0.33	0.33	Wet
Occasional discharge	Bedford	0.33	0.33	Wet
Lots of leaf litter, mar	Bedford	0.33	0.33	Wet
strong strawberry jello	Bedford	0.18	0.18	Wet
very little odor, may b	Bedford	0.33	0.33	Wet
No odor	Bedford	0.18	0.18	Wet
Low TSS, tannish sta	Bedford	0.33	0.33	Wet
strong strawberry jello	Bedford	0.18	0.18	Wet
ner of Salem St	Bedford	0.01	0.01	Dry
Lots of seeds in the w	Bedford	0.01	0.01	Dry
Pretty clear water	Bedford	0.01	0.01	Dry
Duplicate	Bedford	0.01	0.01	Dry
Manhole nearby with	Bedford	0.33	0.33	Wet
Low flow, light brown	Bedford	0.24	0.51	Wet
culvert to right not flo	Bedford	0.89	0.89	Wet
Sampled main stream	Bedford	0.01	0.01	Dry
Waded 3 ft upstream	Bedford	0.24	0.51	Wet
walked in about 1-2 m	Bedford	0.89	0.89	Wet
Good flow	Bedford	0.24	0.51	Wet
No odor	Bedford	0.89	0.89	Wet
Marshalls shipping lo	Bedford	0.89	0.89	Wet
some geese swimmin	Bedford	0.89	0.89	Wet
No odor	Bedford	0.89	0.89	Wet
ses under New Boston	Bedford	0.89	0.89	Wet
water very turbid sligh	Bedford	0.89	0.89	Wet
Film on water, low flo	Bedford	0.24	0.51	Wet
Water grayish/green	Bedford	0.15	0.15	wet
Thick sediment, oily, t	Bedford	0.24	0.51	Wet
most likiliy from lands	Bedford	0.15	0.15	Wet
Thick layer of duck w	Bedford	0.24	0.51	Wet

'1, downstream of Mys	Bedford	0.15	0.15	Wet
Very turbid, foul odor	Bedford	0.89	0.89	Wet
Suspended solids	Bedford	0.24	0.51	Wet
were driveway enters	Bedford	0.24	0.51	Wet
Duplicate	Bedford	0.89	0.89	Wet
Duplicate	Bedford	0.24	0.51	Wet
were stream exits outf	Bedford	0.89	0.89	Wet
On N. side grass clipp	Bedford	0.01	0.01	Dry
Sandy bottom, beave	Bedford	0.24	0.51	Wet
Sandy bottom, med f	Bedford	0.33	0.33	Wet
Lots of duck weed. Li	Bedford	0.33	0.33	Wet
Clear, low flow (less t	Bedford	0.15	0.15	Wet
Downstream side	Bedford	0.01	0.01	Dry
Lots of trash in the ar	Bedford	0.01	0.01	Dry
Very turbid water, bro	Bedford	0.01	0.01	Dry
Grey, turbid water	Bedford	0.24	0.51	Wet
Med flow tannish colo	Bedford	0.33	0.33	Wet
Clear, good flow, no c	Bedford	0.15	0.15	Wet
Lots of green duck we	Bedford	0.24	0.51	Wet
Very little flow, believ	Bedford	0.33	0.33	Wet
Clear flow	Bedford	0.33	0.33	Wet
Clear flow	Bedford	0.15	0.15	Wet
downstream side	Bedford	0.01	0.01	Dry

	RARE 2009					RARE 2010					Urban Rivers (2009)			
Town	Sites	Events	Lab	Field	YSI	Sites	Events	Lab	Field	YSI	**Sites	Events	Lab	Field
Andover	4	4	39	27	4	2	3	27	12	2	4	5	5	15
Arlington	2	2	24	10	0	26	32	363	142	32	0	0	0	0
Belmont	1	2	23	12	0	1	2	15	10	2	0	0	0	0
Beverly	0	0	0	0	0	4	4	28	20	4	0	0	0	0
Boston	8	9	115	71	5	12	19	290	80	19	6	9	10	30
Brookline	0	0	0	0	0	1	1	12	4	1	0	0	0	0
Chelsea	6	8	95	68	5	2	3	25	13	3	0	2	2	8
Concord, MA	0	0	0	0	0	1	1	11	5	1	0	0	0	0
Concord, NH	0	0	0	0	0	4	6	72	24	6	0	0	0	0
Danvers	2	2	26	12	3	0	0	0	0	0	0	0	0	0
Dorchester	2	3	39	14	2	0	0	0	0	0	0	2	1	5
Everett	0	0	0	0	0	0	0	0	0	0	1	1	1	4
Falmouth	0	0	0	0	0	8	9	99	45	8	0	0	0	0
Groveland	0	0	0	0	0	0	0	0	0	0	2	2	2	8
Haverhill	0	0	0	0	0	0	0	0	0	0	5	6	7	23
Laconia, NH	0	0	0	0	0	6	9	69	35	9	0	0	0	0
Lawrence	2	3	39	24	2	6	11	116	48	10	8	12	13	45
Lexington	2	2	26	13	2	4	4	47	20	4	0	0	0	0
Lowell	8	10	91	79	9	0	0	0	0	0	0	0	0	0
Lynn	1	2	23	12	1	1	1	12	4	1	1	1	1	3
Malden	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manchester, NH	0	0	0	0	0	4	4	48	16	4	0	0	0	0
Marblehead	2	2	26	12	2	12	15	161	60	15	3	3	4	12
Medford	2	2	23	12	2	0	0	0	0	0	1	2	2	4
Melrose	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Methuen	0	0	0	0	0	0	0	0	0	0	4	4	4	18
Milton	4	4	49	30	4	0	0	0	0	0	7	9	10	30
Newton	3	4	52	31	3	0	0	0	0	0	0	0	0	0
Norwood	3	4	50	32	4	0	0	0	0	0	11	13	15	39
Peabody	0	0	0	0	0	0	0	0	0	0	5	5	5	15
Plymouth	5	6	71	41	5	0	0	0	0	0	0	0	0	0
Quincy	8	13	159	78	10	14	19	208	72	19	8	18	20	66
Reading	1	1	13	8	1	0	0	0	0	0	7	10	10	31
Revere	0	0	0	0	0	5	7	71	32	7	8	9	9	32
Salem	0	0	0	0	0	1	1	12	4	1	2	2	4	6
Salem, NH	0	0	0	0	0	0	0	0	0	0	8	9	9	38
Somerville	1	2	20	14	2	0	0	0	0	0	2	3	3	9
Stoneham	5	8	86	51	5	8	9	102	44	11	1	5	5	13
Swampscott	0	0	0	0	0	1	1	12	4	1	1	2	2	3
Waltham	1	1	13	7	1	0	0	0	0	0	0	0	0	0
Warwick, RI	0	0	0	0	0	12	13	106	52	12	0	0	0	0
Watertown	2	2	15	14	2	11	12	96	36	12	0	0	0	0
Winchester	1	2	25	16	1	11	12	109	45	12	7	8	9	26
Woburn	11	16	184	115	10	19	23	214	94	20	15	24	30	104
Total	**87**	**114**	**1326**	**803**	**85**	**176**	**221**	**2325**	**921**	**216**	**117**	**166**	**183**	**587**
TOTAL RARE	**263**	**335**	**3651**	**1724**	**301**									
TOTAL (All)	**511**	**680**	**4335**	**2525**	**417**									

Upper Mystic														
Melrose	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reading	1	1	13	8	1	0	0	0	0	0	7	10	10	31
Stoneham	5	8	86	51	5	8	9	102	44	11	1	5	5	13
Winchester	1	2	25	16	1	11	12	109	45	12	7	8	9	26
Woburn	11	16	184	115	10	19	23	214	94	20	15	24	30	104
Total	**18**	**27**	**308**	**190**	**17**	**38**	**44**	**425**	**183**	**43**	**30**	**47**	**54**	**174**
TOTAL	**154**	**221**	**1057**	**679**	**78**									

Lower Mystic														
Arlington	2	2	24	10	0	26	32	363	142	32	0	0	0	0
Belmont	1	2	23	12	0	1	2	15	10	2	0	0	0	0
Chelsea	6	8	95	68	5	2	3	25	13	3	0	2	2	8
Everett	0	0	0	0	0	0	0	0	0	0	1	1	1	4
Lexington	2	2	26	13	2	4	4	47	20	4	0	0	0	0
Malden	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medford	2	2	23	12	2	0	0	0	0	0	1	2	2	4
Somerville	1	2	20	14	2	0	0	0	0	0	2	3	3	9
Total	**14**	**18**	**211**	**129**	**11**	**33**	**41**	**450**	**185**	**41**	**4**	**8**	**8**	**25**
TOTAL	**73**	**98**	**764**	**376**	**55**									
South Shore														
Dorchester	2	3	39	14	2	0	0	0	0	0	0	2	1	5
Milton	4	4	49	30	4	0	0	0	0	0	7	9	10	30
Quincy	8	13	159	78	10	14	19	208	72	19	8	18	20	66
Total	**14**	**20**	**247**	**122**	**16**	**14**	**19**	**208**	**72**	**19**	**15**	**29**	**31**	**101**
TOTAL	**43**	**68**	**486**	**295**	**60**									
North Shore														
Beverly	0	0	0	0	0	4	4	28	20	4	0	0	0	0
Danvers	2	2	26	12	3	0	0	0	0	0	0	0	0	0
Lynn	1	2	23	12	1	1	1	12	4	1	1	1	1	3
Marblehead	2	2	26	12	2	12	15	161	60	15	3	3	4	12
Peabody	0	0	0	0	0	0	0	0	0	0	5	5	5	15
Revere	0	0	0	0	0	5	7	71	32	7	8	9	9	32
Salem	0	0	0	0	0	1	1	12	4	1	2	2	4	6
Swampscott	0	0	0	0	0	1	1	12	4	1	1	2	2	3
Total	**5**	**6**	**75**	**36**	**6**	**24**	**29**	**296**	**124**	**29**	**20**	**22**	**25**	**71**
TOTAL	**54**	**62**	**411**	**236**	**55**									
Merrimack														
Andover	4	4	39	27	4	2	3	27	12	2	4	5	5	15
Concord, NH	0	0	0	0	0	4	6	72	24	6	0	0	0	0
Groveland	0	0	0	0	0	0	0	0	0	0	2	2	2	8
Haverhill	0	0	0	0	0	0	0	0	0	0	5	6	7	23
Laconia, NH	0	0	0	0	0	6	9	69	35	9	0	0	0	0
Lawrence	2	3	39	24	2	6	11	116	48	10	8	12	13	45
Lowell	8	10	91	79	9	0	0	0	0	0	0	0	0	0
Machester, NH	0	0	0	0	0	4	4	48	16	4	0	0	0	0
Methuen	0	0	0	0	0	0	0	0	0	0	4	4	4	18
Salem, NH	0	0	0	0	0	0	0	0	0	0	8	9	9	38
Total	**14**	**17**	**169**	**130**	**15**	**22**	**33**	**332**	**135**	**31**	**31**	**38**	**40**	**147**
TOTAL	**90**	**115**	**629**	**435**	**77**									
Plymouth														
Plymouth	5	6	71	41	5	0	0	0	0	0	0	0	0	0
Total	**5**	**6**	**71**	**41**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL	**5**	**6**	**71**	**41**	**5**									
Norwood														
Norwood	3	4	50	32	4	0	0	0	0	0	11	13	15	39
Total	**3**	**4**	**50**	**32**	**4**	**0**	**0**	**0**	**0**	**0**	**11**	**13**	**15**	**39**
TOTAL	**25**	**30**	**80**	**110**	**26**									
Charles														
Boston	8	9	115	71	5	12	19	290	80	19	6	9	10	30
Brookline	0	0	0	0	0	1	1	12	4	1	0	0	0	0
Newton	3	4	52	31	3	0	0	0	0	0	0	0	0	0

Waltham	1	1	13	7	1	0	0	0	0	0	0	0	0	0
Watertown	2	2	15	14	2	11	12	96	36	12	0	0	0	0
Total	**14**	**16**	**195**	**123**	**11**	**24**	**32**	**398**	**120**	**32**	**6**	**9**	**10**	**30**
TOTAL	**51**	**64**	**624**	**281**	**51**									
Concord, MA														
Concord, MA	0	0	0	0	0	1	1	11	5	1	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**11**	**5**	**1**	**0**	**0**	**0**	**0**
TOTAL	**1**	**1**	**11**	**5**	**1**									
Falmouth, MA														
Falmouth, MA	0	0	0	0	0	8	9	99	45	8	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**8**	**9**	**99**	**45**	**8**	**0**	**0**	**0**	**0**
TOTAL	**8**	**9**	**99**	**45**	**8**									
Warwick, RI														
Warwick, RI	0	0	0	0	0	12	13	106	52	12	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**12**	**13**	**106**	**52**	**12**	**0**	**0**	**0**	**0**
TOTAL	**12**	**13**	**106**	**52**	**12**									

	Urban Rivers (2008)					Incomplete Sample Sets	
YSI	**Sites	Events	Lab	Field	YSI	Lab	Field
5	0	0	0	0	0		
0	0	0	0	0	0	3	15
0	0	0	0	0	0		
0	0	0	0	0	0		
8	2	2	6	2	0		
0	0	0	0	0	0		
2	11	16	48	18	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
1	0	0	0	0	0		
1	4	8	24	10	0		8
0	0	0	0	0	0		
2	0	0	0	0	0		
5	0	0	0	0	0		
0	0	0	0	0	0		
11	5	5	15	6	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
1	0	0	0	0	0		
0	1	1	6	2	0		
0	0	0	0	0	0		
3	0	0	0	0	0		
0	6	6	17	7	0		
0	12	14	42	15	0		
2	9	10	24	5	0		
8	0	0	0	0	0		
0	0	0	0	0	0		
11	0	0	0	0	0		
5	0	0	0	0	0		
0	0	0	0	0	0		
16	0	0	0	0	0		
3	0	0	0	0	0		
8	5	5	15	5	0		
2	0	0	0	0	0		
6	9	12	49	12	0		10
0	0	0	0	0	0		
0	5	17	52	33	0		15
1	0	0	0	0	0		
0	6	6	12	9	0		
0	0	0	0	0	0		
0	5	5	15	6	0		
6	20	22	65	23	0		1
9	31	50	111	61	0		
116	**131**	**179**	**501**	**214**	**0**	**3**	**49**

0	12	14	42	15	0		
3	0	0	0	0	0		
0	5	17	52	33	0		15
6	20	22	65	23	0		1
9	31	50	111	61	0		
18	**68**	**103**	**270**	**132**	**0**		**16**

0	0	0	0	0	0	3	15
0	0	0	0	0	0		
2	11	16	48	18	0		
1	4	8	24	10	0		8
0	0	0	0	0	0		
0	1	1	6	2	0		
0	6	6	17	7	0		
0	0	0	0	0	0		
3	**22**	**31**	**95**	**37**	**0**	**3**	**23**

1	0	0	0	0	0		
8	0	0	0	0	0		
16	0	0	0	0	0		
25	**0**	**0**	**0**	**0**	**0**		**0**

0	0	0	0	0	0		
0	0	0	0	0	0		
1	0	0	0	0	0		
3	0	0	0	0	0		
5	0	0	0	0	0		
8	5	5	15	5	0		
2	0	0	0	0	0		
1	0	0	0	0	0		
20	**5**	**5**	**15**	**5**	**0**	**0**	**0**

5	0	0	0	0	0		
0	0	0	0	0	0		
2	0	0	0	0	0		
5	0	0	0	0	0		
0	0	0	0	0	0		
11	5	5	15	6	0		
0	0	0	0	0	0		
0	0	0	0	0	0		
2	9	10	24	5	0		
6	9	12	49	12	0		10
31	**23**	**27**	**88**	**23**	**0**	**0**	**10**

0	0	0	0	0	0		
0	**0**	**0**	**0**	**0**	**0**		**0**

11	11	13	15	39	11		
11	**11**	**13**	**15**	**39**	**11**		**0**

8	2	2	6	2	0		
0	0	0	0	0	0		
0	0	0	0	0	0		

0	0	0	0	0	0		
0	5	5	15	6	0		
8	**7**	**7**	**21**	**8**	**0**		**0**

0	0	0	0	0	0		
0	**0**	**0**	**0**	**0**	**0**		**0**

0	0	0	0	0	0		
0	**0**	**0**	**0**	**0**	**0**		**0**

0	0	0	0	0	0		
0	**0**	**0**	**0**	**0**	**0**		**0**

RARE Stormwater Outfall Inspection & Sampling Summary

Location				Outfall		Inspection										
													Surfact. (mg/l)			
Date	Town	Site Name	Time	Pipe Mat.	Dia. (in)	Est. Flow (gpm)	Odor	Color	Turbidity	Floatables	E.coli (MPN/100ml)	Entero (MPN/100ml)	Alpha	Field	DR-850	Alpha
4/21/10	Arlington	30Park	12:25	open stream	na	stream	none	light tea	clear	none	1741	8164	0.08	ND	NA	ND
5/5/10	Arlington	30Park	10:10	open stream	na	stream	none	light tea	clear	none	1302	350	0.07	ND	NA	0.164
5/5/10	Arlington	ArlRes	11:05	concrete	3'	stream	none	light tea	clear	some suds	183	74	NA	ND	NA	NA
5/26/10	Arlington	ArlRes	11:30	concrete	3'	stream	none	med tea	lightly turbi	none	479	548	NA	~0.1	NA	NA
5/5/10	Arlington	Brattle	9:10	open stream	na	stream	none	tea	very turbid	some	1462	776	NA	~0.1	NA	NA
5/5/10	Arlington	Drake01	10:55	open stream	na	stream	none	med tea	lightly turbi	none	2318	960	0.1	ND	NA	0.257
5/26/10	Arlington	Drake01	11:25	open stream	na	stream	none	med tea	lightly turbi	none	1230	663	NA	~0.1	NA	NA
4/21/10	Arlington	GroveS	9:45	concrete	40"	10-15	none	none	clear	none	744	7701	NA	0.2	NA	NA
5/5/10	Arlington	GroveS	8:10	concrete	40"	10-15	slight gas	none	clear	none	202	15531	NA	0.22	NA	NA
4/21/10	Arlington	RyderE	11:20	concrete	30"	29.0040741	none	none	clear	none	271	336	0.16	0.25	NA	0.13
5/5/10	Arlington	RyderE	9:32	concrete	30"	29.0040741	none	none	clear	none	49	30	NA	0.2	NA	NA
4/21/10	Arlington	RyMill	11:05	concrete	2'X3'	4.00407407	fresh	none	clear	none	1302	404	0.16	0.3	NA	0.677
5/5/10	Arlington	RyMill	9:25	concrete	2'X3'	3	emical/mus	none	fairly clear	none	2190	301	NA	~0.1	NA	NA
5/5/10	Arlington	UR022	8:10	Stone (instream)	6'	stream	natural gas	light tea	fairly clear	some suds	2069	583	0.07	~0.1	NA	0.218
5/5/10	Lexington	Vine01	11:55	open stream	na	stream	none	heavy tea	lightly turbi	some leaves	1302	393	NA	~0.1	NA	NA
5/5/10	Lexington	WF01	11:25	Stone (instream)	4'X4'	stream	none	none	cloudy	some scum	16	52	0.07	ND	NA	ND
6/2/10	Boston	29J212	10:22	concrete	60"	na	none	none	cloudy	particulates	568	52	NA	2	NA	NA
7/14/10	Boston	29J212	7:17	concrete	60"	na	none	none	clear	none	3683	199	NA	3	NA	NA
7/28/10	Boston	29J212	7:15	concrete	60"	na	lightly must	none	clear	none	890	ND	NA	3	NA	NA
6/2/10	Boston	Bos017	10:20	concrete	72"	na	none	none	cloudy	particulates	612	203	NA	2	NA	NA
7/14/10	Boston	Bos017	7:17	concrete	72"	na	musty	none	ightly cloud	some	129970	2489	NA	2.5	NA	NA
7/28/10	Boston	Bos017	7:16	concrete	72"	na	lightly must	none	clear	some	120330	2613	NA	3	NA	NA
7/14/10	Boston	UR029	7:17	concrete	60"	na	none	none	clear	none	3922	256	NA	3	NA	NA
7/21/08	Chelsea	IsEnd02	11:25	CM, semi-round	7'						3080	NA	0.19	NA	NA	ND
7/28/09	Chelsea	IsEnd02	9:25	CM, semi-round	7'		strong petroleum		tea/tan	cloudy	None	5654	122	0.16	0.6	0.068	0.252
7/21/08	Chelsea	IsEnd04	11:30									>241960	NA	0.14	NA	NA	13.0
8/21/08	Chelsea	IsEnd04	10:35									2595	NA	ND	NA	NA	2.68
7/21/08	Chelsea	IsEnd04d	11:30									>241960	NA	0.15	NA	NA	13.5
7/21/08	Chelsea	Mill2	9:55	concrete	~30 inches							9678	NA	0.18	NA	NA	1.33
9/4/08	Chelsea	Mill2	11:20	concrete	~30 inches							38	NA	0.24	NA	NA	4.12
5/26/09	Chelsea	Mill2	10:06	concrete	~30 inches	5-10gal/min	strong odor	clear	none	some suds		44	20	0.19	1.5	NA	4.31
7/28/09	Chelsea	Mill2	8:05	concrete	~30 inches	15	sharp sewa	clear	none	None		310	12	0.23	0.8	0.126	3.84
7/29/09	Chelsea	Mill2	8:30	concrete	~30 inches	10	strong odor	clear	none	none		NA	52	NA	0.70	NA	NA
9/1/10	Chelsea	Mill2	8:55	concrete	~30 inches	15	sharp sewa	clear	none	None		282	41	NA	0.5	NA	NA
5/26/09	Chelsea	Mill2A	11:10	CM	~24 inches	1 gal/min	none	clear	none	None		~4	ND	0.39	1	NA	7.02
7/29/09	Chelsea	Mill2A	8:40			3	dor - chemi	None	none	None		NA	10	NA	0.75	NA	NA
6/2/10	Chelsea	Mill2A	11:20	concrete	24	<5	usty/chemic	none	clear	trash		58	175	NA	0.8	NA	NA
9/1/10	Chelsea	Mill2A	8:30	concrete	24	<5	usty/chemic	none	clear	trash		8	ND	NA	0.6	NA	NA
9/4/08	Chelsea	Mill2d	11:20									54	NA	0.22	NA	NA	4.01
7/21/08	Chelsea	Mill3	10:10									15530	NA	0.09	NA	NA	ND
8/21/08	Chelsea	Mill3	9:55									1844	NA	0.07	NA	NA	0.27
7/7/10	Concord, NH	Mer4120	10:45	brick	48" semi-circle	NA	none	none	ightly cloud	rash & debri		218	399	NA	1	NA	NA
8/25/10	Concord, NH	Mer4120	12:45	brick	48" semi-circle	NA	musty	grey	cloudy	e suds & de		38730	51720	NA	0.25	NA	NA
7/7/10	Concord, NH	UR028	10:45	brick	48" semi-circle	NA	none	none	ightly cloud	rash & debri		263	448	NA	1	NA	NA
8/21/08	Everett	IsEnd03A	10:45									11870	NA	0.11	NA	NA	0.82
9/4/08	Everett	IsEnd03A	9:57									86640	NA	0.11	NA	NA	1.03
9/22/08	Everett	IsEnd03A	11:40									6932	NA	0.14	NA	NA	0.542
7/28/09	Everett	IsEnd03A	9:05		open stream	na	odor; slight	ayish/yellow	none	None		9678	388	0.1	0.8	0.054	0.831
8/21/08	Everett	IsEnd03B	10:50									3266	NA	0.08	NA	NA	1.17
9/4/08	Everett	IsEnd03B	9:58									9678	NA	0.09	NA	NA	0.56
9/22/08	Everett	IsEnd03B	11:42									1164	NA	0.11	NA	NA	0.48
7/29/09	Everett	IsEnd03B	12:40	NS	NS	20	slight musty	orange	very cloudy	None		NA	ND	NA	0.25	NA	NA
8/25/10	Laconia, NH	996-F	8:50	concrete	16	~10	none	none	clear	none		353	52	NA	0.4	NA	NA
8/25/10	Laconia, NH	996-F	11:11	concrete	16	~20	none	none	clear	some suds		6932	19863	NA	0.2	NA	NA
8/25/10	Laconia, NH	Beach RT	8:30	Beach	NA	NA	none	none	clear	none		21	ND	NA	0.2	NA	NA
8/25/10	Laconia, NH	Beach RT	10:30	Beach	NA	NA	none	none	clear	none		16	ND	NA	0.25	NA	NA
8/25/10	Laconia, NH	UR035	11:11	concrete	16	~20	none	none	clear	some suds		6978	17329	NA	0.2	NA	NA
8/19/09	Lawrence	Shaw01	9:40	cement	(3) 15' x 15'		None	med tea	cloudy	e suds and le		157	NA	NA	0.10	NA	NA
8/4/10	Lawrence	Shaw01	9:50	open stream	na	stream	none	oil sheen, slight tea		leaves		208	86	NA	~0.1	NA	NA
6/10/09	Lawrence	Shaw1	12:30	open stream	na	stream	musty	tea	yes	None		353	NA	NA	0.05	NA	NA
6/10/09	Lawrence	SLE3	13:11	concrete	3'		strong musty o	None	Clear	None		616	NA	NA	0.10	NA	NA
8/19/09	Lawrence	SLE3	10:20	concrete	3'		strong, musty sewa	None	Clear	None		34	NA	NA	0.20	NA	NA
9/22/09	Lawrence	SLE3	11:30	concrete	3'	na	slight musty	None	Clear	None		205	445	ND	~0.1	ND	ND
6/10/10	Lawrence	SLE3	7:25	concrete	3'	NA	strong must	hite/tan/gra	ightly cloud	ilamentous		1954	2359	NA	1	NA	NA
6/10/10	Lawrence	SLE3	8:25	concrete	3'	NA	strong must	none	ightly cloud	ilamentous		899	4884	NA	0.2	NA	NA
6/10/10	Lawrence	SLE3	9:00	concrete	3'	NA	strong must	none	ightly cloud	ilamentous		806	2014	NA	0.5	NA	NA
8/4/10	Lawrence	SLE3	9:30	concrete	3'		sharp punge	none	clear	nks of bact		1230	275	NA	~0.1	NA	NA
9/8/09	Lexington	Vine01	13:00	concrete	3x3 box	na	Musty	rust/brown	cloudy	None		29090	2752	0.08	NA	0.19	1.12
9/8/09	Lexington	WF01	12:26	concrete	3'	20-30	slight musty	None	clear	None		44	40	~0.05	ND	0.03	0.266
6/17/09	Lynn	StaceyS	12:11	CM	4'x8'		NS	None	Clear	None		NA	14136	NA	0.70	NA	NA
7/14/10	Lynn	StaceyS	8:20	CM	4'x8'	300-400	musty	none	cloudy	me suds/tra		38730	68670	NA	0.2	NA	NA
7/21/08	Medford	Mhb	12:30									7945	NA	0.06	NA	NA	ND
5/13/09	Medford	MHB	8:07	CM			None	None	Clear	None		455	NA	NA	0.10	NA	NA
6/2/09	Medford	MHB	7:25	CM	40	low	gas	lightly cloud	none	None		534	78	ND	~0.1	ND	0.2
7/21/08	Medford	Mhb2	12:40									9678	NA	NA	NA	NA	NA
5/13/09	Medford	MHB2	8:07	CM	24	5-10	None	Yellowish	Light	None		117	NA	NA	ND	NA	NA
6/30/08	Methuen	Mer1	8:43									1162	1495 Fecal	0.05	NA	NA	ND
8/4/08	Methuen	Mer1	10:45									293	NA	0.07	NA	NA	ND
6/3/09	Methuen	Mer1	8:57	open stream	na	stream	None	tea	very	None		58	NA	NA	0.10	NA	NA

8/4/08	Methuen	SP06	9:05								342	NA	0.08	NA	NA	ND
6/3/09	Methuen	SP06	7:38	open stream	na	stream	None	None	Clear	None	124	NA	NA	0.10	NA	NA
8/4/08	Methuen	SP07	9:55								12	NA	0.05	NA	NA	ND
6/3/09	Methuen	SP07	8:10	open stream	na	stream	None	None	Clear	None	86	NA	NA	ND	NA	NA
8/12/09	Milton	CunPk02	8:12	cement	2, 2'	30	None	None	Clear	None	3466	NA	NA	0.30	NA	NA
9/29/09	Milton	CunPk02	8:30	concrete	18"	2	d sewage sr	None	Mild	Leave, bubb	1954	6131	0.06	0.18	0.041	0.291
8/5/09	Norwood	PB02	11:24		2-3ft	20	y and natur	None	Clear	None	4185	NA	NA	0.15	NA	NA
9/29/09	Norwood	PB02	12:00		18"	3	Septic	Cloudy	very turbid	None	68670	6131	0.07	0.25	0.05	0.695
9/29/09	Norwood	UR019	12:00		18"	3	Septic	Cloudy	very turbid	None	48840	5475	0.09	0.25	0.061	0.556
8/12/09	Quincy	FBP02	8:40	open stream	na	stream	None	None	Clear	None	4813	NA	NA	0.20	NA	NA
5/19/10	Quincy	FBP02	8:15	open stream	na	stream	none	none	clear	none	4813	3873	NA	0.25	NA	NA
8/12/09	Quincy	FBP03	9:10	cement	2, 3'		None	None	Clear	None	2069	NA	NA	0.10	NA	NA
5/19/10	Quincy	FBP03	8:55	open stream	na	stream	septic smel	light brown	nild	none	5654	5172	NA	0.4	NA	NA
5/27/09	Quincy	SAG1	9:15	cement	10x10box		None	tea	cloudy	Yes	~6212	NA	NA	1.00	NA	NA
8/11/09	Quincy	SAG1	8:25	concrete	10x10 box	na	slight musty	brown	very turbid	None	3922	1230	ND	2	0.025	0.4
8/12/09	Quincy	SAG1	10:20	cement	10x10box		petroleum od	very brown	y turbid; clo	some suds	NA	2359	NA	2.00	NA	NA
5/19/10	Quincy	Sag1A	10:15		4ft		slight septic sn	light brown	clear	none	13340	2098	NA	1.7	NA	NA
10/27/10	Quincy	Sag1A	10:15	open stream	na	stream	slight musty	rk/med brov	very turbid	some suds	5630	2909	NA	0.75	NA	NA
5/19/10	Quincy	Sag1B	11:45		5x6ft	slowly	sewage	light brown	mild	none	20980	3654	NA	0.5	NA	NA
10/27/10	Quincy	Sag1B	10:30	concrete	6'x6'	na	none	brown	silty/turbid	none	4480	2851	NA	0.5	NA	NA
8/11/09	Quincy	SAG2	8:50	ground seep		3-5	Strong sulfu	clear	none	None	ND	ND	NA	0.7	NA	NA
8/12/09	Quincy	SAG2	10:22	seep	na	3 gal/min	strong sulfu	None	Clear	None	NA	ND	NA	0.60	NA	NA
7/14/09	Quincy	UR001	11:27	CM	4x4 box	50-100	sulfur odor	clear	none	None	1741	5654	ND	NA	0.033	0.196
8/11/09	Quincy	UR009	10:25	concrete	4x4 box	30-40	Strong sulfu	mostly clear	none	None	489	363	ND	0.6	0.028	0.076
8/12/09	Quincy	UR010	11:30	cement	6' x 8' box		None	None	Clear	None	4185	NA	NA	0.10	NA	NA
5/19/10	Quincy	UR024	8:15	open stream	na	stream	none	none	clear	none	3922	3654	NA	0.3	NA	NA
5/27/09	Quincy	WollB1	7:58	CM	4x4 box	50-100	sewage odo	None	Clear	Some suds	NA	~12997	NA	1.00	NA	NA
6/9/09	Quincy	WollB1	7:35	CM	4x4 box	50-100	thick musty	clear	none	some suds	420	1741	ND	1.5	ND	0.187
7/14/09	Quincy	WollB1	11:27	CM	4x4 box	50-100	sulfur odor	clear	none	None	2190	6932	~0.05	0.25	0.04	0.125
8/11/09	Quincy	WollB1	10:25	concrete	4x4 box	30-40	Strong sulfu	mostly clear	none	None	626	518	ND	0.7	0.024	ND
8/12/09	Quincy	WollB1	11:00	CM	4x4 box		sulfur	None	Clear	None	NA	1720	NA	0.75	NA	NA
5/19/10	Quincy	WollB1	11:00	CM	4x4 box	1	sewage	none	clear	none	2747	6131	NA	0.75	NA	NA
10/27/10	Quincy	WollB1	8:05	CM	4x4 box	50	musty	none	clear	none	147	197	NA	1.25	NA	NA
7/14/09	Quincy	WollB1A	11:08	CM	3'x3' box	10-15gal/min	strong must	clear	none	e trash in w	3080	1844	ND	0.75	0.023	0.19
8/11/09	Quincy	WollB1A	9:45	CM	3'x3' box	na	musty/sulfu	clear	none	None	437	161	ND	1.5	0.026	0.136
8/12/09	Quincy	WollB1A	10:50	CM	3'x3' box		musty/sulfur	gray	cloudy	None	NA	2755	NA	2.00	NA	NA
5/19/10	Quincy	WollB1A	10:40	CM	3'x3' box	0.5L/min	sewage	none	clear	none	4480	3282	NA	0.5	NA	NA
10/27/10	Quincy	WollB1A	8:10	CM	3'x3' box	30-40	musty/sulfu	none	ightly cloud	oily film	192	121	NA	2	NA	NA
7/29/09	Revere	Green01	11:11	NS	NS		slight musty	None	cloudy	None	NA	14136	NA	0.70	NA	NA
6/2/10	Revere	Green01	8:40	open stream	na	stream	musty	grey	turbid	trash	>241960	31300	NA	0.75	NA	NA
9/1/10	Revere	Green01	8:10	open stream	na	stream	musty	none	clear	none	27550	6867	NA	0.25	NA	NA
7/29/09	Revere	WashN01	10:10	concrete	24		none	NS	NS	None	NA	2282	NA	0.75	NA	NA
6/2/10	Revere	WashN01	8:01	concrete	24	NA	none	brown	turbid	none	17250	16070	NA	0.3	NA	NA
6/30/08	Salem, NH	Mer2	9:06	open stream	na	stream					288	694 Fecal	0.05	NA	NA	ND
8/4/08	Salem, NH	Mer2	12:02	open stream	na	stream					302	NA	0.07	NA	NA	ND
6/3/09	Salem, NH	Mer2	9:22	open stream	na	stream	None	reddish	med	None	48	NA	NA	0.10	NA	NA
6/30/08	Salem, NH	Mer3	9:35	open stream	na	stream					590	590 Fecal	0.07	NA	NA	ND
6/3/09	Salem, NH	Mer3	9:46	open stream	na	stream	None	tea	Clear	None	75	NA	NA	0.05	NA	NA
6/3/09	Salem, NH	Mer5	10:45	open stream	na	stream	None	tea	Clear	None	465	NA	NA	0.15	NA	NA
6/30/08	Salem, NH	Mer5	10:27	open stream	na	stream					883	739 Fecal	0.06	NA	NA	ND
6/30/08	Salem, NH	Mer6A	10:55								802	847 Fecal	0.07	NA	NA	ND
6/3/09	Salem, NH	Mer6a	11:13				None	tea	Clear	None	293	NA	NA	0.20	NA	NA
6/30/08	Salem, NH	Mer7	11:30	CM	3-4 ft						775	955 Fecal	0.05	NA	NA	ND
6/3/09	Salem, NH	Mer7	11:46	CM	3-4 ft		None	light tea	Clear	None	166	NA	NA	0.05	NA	NA
6/3/09	Salem, NH	Mer7d	11:46	CM	3-4ft		None	light tea	Clear	None	114	NA	NA	NA	NA	NA
6/30/08	Salem, NH	Mer8	11:51	open stream	na	stream					568	649 Fecal	0.05	NA	NA	ND
6/3/09	Salem, NH	Mer8	12:07	open stream	na	low flow	None	None	Clear	None	126	NA	NA	ND	NA	NA
5/13/09	Somerville	MWRA205	10:07	CM	4x4 box	me in, some	None	Murky	Light	None	NA	10462	NA	1.80	NA	NA
5/26/09	Somerville	MWRA205	7:57	CM	4x4 box	na	none	light tea	none	None	77010	1989	0.22	2	NA	1.93
7/28/09	Somerville	MWRA205	11:08	CM	4x4 box		slight sewage o	gray/green	e suspende	None	9678	1211	0.24	1.2	0.154	2.65
6/23/08	Stoneham	100A	11:00	open stream	na	stream					14400	NA	0.19	NA	NA	ND
9/15/08	Stoneham	100A	9:42	open stream	na	stream					1642	NA	0.07	NA	NA	ND
8/11/10	Stoneham	100A	7:42	open stream	na	stream	ght musty o	light tea	clear	none	22820	323	NA	0.35	NA	NA
6/23/08	Stoneham	1West	11:42	stone	2x3						14100	NA	0.29	NA	NA	0.410
7/15/08	Stoneham	1West	7:57	stone	2x3						3266	NA	0.05	NA	NA	ND
8/12/08	Stoneham	1West	7:29	stone	2x3						4813	NA	NA	NA	NA	0.18
9/22/08	Stoneham	1West	10:45	stone	2x3						54750	NA	0.05	NA	NA	ND
5/13/09	Stoneham	1West	11:45	stone	2x3		None	None	Clear	None	913	NA	NA	0.10	NA	NA
7/21/09	Stoneham	1West	9:20	stone	2x3	50-100	lightly must	clear	none	None	~64880	~2318	~0.28	0.6	0.148	0.117
8/11/10	Stoneham	1West	8:03	stone	2x3	50-100	moldy mus	light film	clear	surface suds	7945	2613	NA	0.2	NA	NA
6/23/08	Stoneham	2dLinden	12:02	open stream	na	stream					13700	NA	0.30	NA	NA	ND
9/22/08	Stoneham	2dLinden	9:56	open stream	na	stream					3266	NA	0.06	NA	NA	0.098
7/15/08	Stoneham	2Lincul	8:20	clay	8"						430	NA	0.06	NA	NA	ND
9/22/08	Stoneham	2Lincul	10:10	clay	8"						9678	NA	0.06	NA	NA	0.078
8/11/10	Stoneham	2Lincul	8:30	clay	8"	~1 -2	none	none	clear	none	173290	6131	NA	0.2	NA	NA
6/23/08	Stoneham	2Linden	12:02	open stream	na	stream					9600	NA	0.32	NA	NA	ND
7/15/08	Stoneham	2Linden	8:15	open stream	na	stream					689	NA	0.05	NA	NA	ND
8/12/08	Stoneham	2Linden	7:18	open stream	na	stream					8800	NA	0.14	NA	NA	0.37
9/22/08	Stoneham	2Linden	9:56	open stream	na	stream					2747	NA	0.07	NA	NA	0.217
5/13/09	Stoneham	2Linden	12:05	open stream	na	stream	None	None	Clear	None	2190	NA	NA	0.20	NA	NA
7/21/09	Stoneham	2Linden	9:35	open stream	na	stream	none	light tea	none	None	~7945	~1302	~0.32	0.75	0.142	0.206
8/11/10	Stoneham	2Linden	8:25	open stream	na	stream	petroleum	lightly cloud	clear	none	713	285	NA	0.2	NA	NA
5/13/09	Stoneham	Toms	12:27	tal w/asphalt bot	3'	20-30	None	None	Clear	None	242	NA	NA	0.10	NA	NA
7/21/09	Stoneham	Toms	10:30	tal w/asphalt bot	3'	50	lightly must	clear	none	None	~16070	~5818	~0.43	0.75	0.176	0.204
7/21/09	Stoneham	Toms	11:30	tal w/asphalt bot	3'	250-500	strong must	gray	cloudy	s, sticks, pa	~3080	~690	~0.08	0.6	0.169	0.193
8/11/10	Stoneham	Toms	9:50	tal w/asphalt bot	3'	~5 -7	phault/ petro	none	nge flocc o	none	212	10	NA	0.15	NA	NA

5/13/09	Stoneham	Tomsd	12:27	tal w/asphalt bot	3'	20-30	None	None	Clear	None	186	NA	NA	NA	NA	NA
7/21/09	Stoneham	UR003	10:30	tal w/asphalt bot	3'	50	lightly must	clear	none	None	~2069	~924	~0.43	0.75	0.189	0.198
8/11/10	Stoneham	URO33	9:00	ert with metal gra	2' x 4'	~30 - 40	musty	none	clear	none	41060	4352	NA	0.2	NA	NA
6/17/09	Swampscot	StaceyN	12:45	CM	4'x8'	40-50	musty sewa	NS	low	None	NA	ND	NA	0.50	NA	NA
7/14/10	Swampscot	StaceyN	8:20	CM	4'x8'	100-150	Cl2 strong	none	clear	rubber glove	109	161	NA	0.2	NA	NA
6/17/09	Swampscot	StaceyND	12:45	CM	4'x8'	40-50	musty sewa	NS	low	None	NA	ND	NA	NA	NA	NA
9/8/09	Watertown	SawB01	8:45	open stream	na	50-100	g petroleum	Orange	cloudy	some suds	1642	104	~0.05	0.2	0.032	0.308
10/5/10	Watertown	SawB01	8:15	open stream	na	stream	none	med tea	clear	e leaves & d	899	156	NA	0.2	NA	NA
9/8/09	Watertown	SawB01b	9:05	cast iron	12"	5	ht sewage c	None	clear	None	~4	ND	NA	0.25	NA	NA
10/5/10	Watertown	UR037	8:15	open stream	na	stream	none	med tea	clear	e leaves & d	890	122	NA	0.2	NA	NA
7/28/08	Winchester	M07	9:26								4813	NA	0.08	NA	NA	ND
8/25/08	Winchester	M07	12:55								806	NA	0.07	NA	NA	0.24
7/22/09	Winchester	Russ1	7:55	Stone (instream)	4'X4'		slightly must	None	Clear	some suds*	1954	NA	NA	0.10	NA	NA
8/4/09	Winchester	Russ1	8:00	Stone (instream)	4'X4'	na	musty	grayish	ightly cloud	None	147	196	~0.05	0.2	0.025	0.108
4/28/10	Winchester	Russ1	11:05	Stone (instream)	4'X4'	stream	none	light tea	clear	some suds	384	359	0.07	0.25	NA	0.083
5/13/09	Winchester	Swan1	11:11	metal	12	50	None	None	Clear	None	98	NA	NA	0.08	NA	NA
4/28/10	Winchester	Swan1	10:45	open stream	na	stream	none	light tea	lightly turbi	some suds	740	171	0.08	0.25	NA	0.887
8/4/09	Winchester	UR007	8:00	stone	3'x4' box	na	musty	grayish	ightly cloud	None	176	118	ND	0.2	0.028	ND
6/23/08	Woburn	1Merrell	10:00	open stream	na	stream					2069	NA	0.10	NA	NA	0.76
9/15/08	Woburn	1Merrell	8:40	open stream	na	stream					6212	NA	0.08	NA	NA	0.776
7/15/09	Woburn	1Merrell	8:55	open stream	na	stream	none	light tea	lightly turbi	None	~494	NA	NA	0.10	NA	NA
7/10/08	Woburn	Mys01	8:15	open stream	na	stream					7945	NA	0.09	NA	NA	2.37
7/15/08	Woburn	Mys01	11:15	open stream	na	stream					164	NA	0.08	NA	NA	3.46
8/12/08	Woburn	Mys01	8:35	open stream	na	stream					3922	NA	NA	NA	NA	NA
5/20/09	Woburn	Mys01	7:36	open stream	na	low flow	None	None	Clear	None	~250	NA	NA	0.10	NA	NA
7/21/10	Woburn	Mys01	9:56	open stream	na	stream	none	bluish	ightly cloud	rash & debri	238	110	NA	0.2	NA	NA
7/10/08	Woburn	Mys07	10:18	open stream	na	stream					27230	NA	0.07	NA	NA	4.29
8/12/08	Woburn	Mys07	8:46	open stream	na	stream					111990	NA	NA	NA	NA	NA
9/22/08	Woburn	Mys07	8:09	open stream	na	stream					3080	NA	0.06	NA	NA	6.22
5/19/09	Woburn	Mys07	10:01	open stream	na	stream	none	tea	heavy	None	518	~63	0.06	~0.1	NA	4.88
5/12/10	Woburn	Mys07	9:05	open stream	na	stream	hulch/sewag	dark brown	very murky	algae	131	145	NA	~0.1	NA	NA
7/10/08	Woburn	Mys08	10:30	open stream	na	stream					41060	NA	0.06	NA	NA	4.57
8/12/08	Woburn	Mys08	8:47	open stream	na	stream					1954	NA	0.06	NA	NA	16.40
5/19/09	Woburn	Mys08	10:20	open stream	na	stream	none	med tea	none	None	~4	~10	~0.05	~0.1	NA	15.80
9/1/09	Woburn	Mys08	9:30	open stream	na	stream	None	light brown	clear	None	363	150	ND	0.25	0.027	14.3
5/12/10	Woburn	Mys08	9:10	open stream	na	stream	t mulch/sew	light brown	clear	none	92	ND	NA	ND	NA	NA
5/19/09	Woburn	Mys08d	10:20	open stream	na	stream	none	med tea	none	None	12	ND	~0.05	~0.1	NA	15.50
7/10/08	Woburn	Mys09	10:45	open stream	na	stream					1549	NA	0.06	NA	NA	4.93
9/1/09	Woburn	Mys09	10:45	open stream	na	stream	None	None	clear	None	205	82	ND	~0.1	ND	16
8/12/08	Woburn	Olym1	10:45	open stream	na	stream					3922	NA	0.12	NA	NA	0.26
9/15/08	Woburn	Olym1	11:31	open stream	na	stream					258	NA	0.08	NA	NA	ND
8/4/09	Woburn	Olym1	9:55	open stream	na	stream	none	light tan	clear	None	2069	205	~0.05	0.2	0.02	0.076
9/1/09	Woburn	UR015	9:30	open stream	na	stream	None	light brown	clear	None	422	148	ND	NA	0.021	14
8/12/08	Woburn	US3	7:53	stone	~16inches	na					>241960	NA	0.18	NA	NA	0.14
9/15/08	Woburn	US3	10:38	stone	~16inches	na					7945	NA	0.08	NA	NA	ND
9/22/08	Woburn	US3	7:14	stone	~16inches	na					1140	NA	0.07	NA	NA	0.132
8/4/09	Woburn	US3	8:50	stone	~16inches	na	none	light tea	ightly cloud	None	587	140	~0.05	ND	0.029	0.14
8/12/08	Woburn	US4	8:03	CM	~24 inches	na					198630	NA	0.17	NA	NA	0.12
9/15/08	Woburn	US4	10:41	CM	~24 inches	na					1164	NA	0.09	NA	NA	ND
8/4/09	Woburn	US4	8:55	CM	~24 inches	na	none	light tan	ightly cloud	None	806	222	~0.05	ND	0.026	0.167
9/15/08	Woburn	US5	10:47	open stream	na	stream					2595	NA	0.07	NA	NA	ND
9/22/08	Woburn	US5	7:24	open stream	na	stream					1102	NA	0.08	NA	NA	0.109
8/4/09	Woburn	US5	9:05	open stream	na	stream	none	light tea	clear	None	542	184	ND	ND	0.032	0.133

NH3 (mg/l)				Nitrate/Nitrite	P	PPCP ng/L									Cl2 (mg/l)				Flou
Field	Nessler	DR-850	Test St.	Alpha	EPA (µg/L)	Atenolol	Acetaminophen	Cotinine	1,7 Dimethylxanthine	Caffeine	Azithromycin	Primidone	Urobilin	Carbamazepine	Alpha Free	Alpha Total	Field	Test St.	Alpha
NA	NA	NA	ND	0.57	56	14	76	4.3	14	120	1.6	ND (4.0)	1900	0.43	ND	ND	NA	ND	ND
NA	NA	NA	ND	0.35	54	10	14	6.7	9	72	0.6	ND (4.0)	920	0.5	ND	ND	ND	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	2	NA	180	33	100	11	47	190	1	ND (4.0)	2000	2.8	NA	NA	~0.02	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.75	0.52	129	32	23	12	19	98	0.84	ND (4.0)	2700	1.9	ND	ND	ND	ND	ND
NA	NA	NA	2	NA	205	43	99	14	67	230	1.3	ND (4.0)	3000	3.3	NA	NA	0.06	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	2	NA	NA	ND (2.0)	2900	5.8	470	190	13	ND (4.0)	810	1.9	NA	NA	NA	ND	NA
NA	NA	NA	ND	1.6	21	ND (2.0)	ND (2.0)	1.1	5.8	11	0.43	5.4	230	1.3	ND	0.18	0.26	ND	ND
NA	NA	NA	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	3	1.6	185	250	15000	3.3	170	520	67	ND (5.0)	15000	ND (0.5)	ND	ND	0.08	ND	ND
NA	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	0.6	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.04	ND	ND
NA	NA	NA	3	NA	NA	4.3	43	2.1	14	93	1.4	ND (5.0)	1700	2.9	NA	NA	NA	ND	NA
NA	NA	NA	ND	1.4	93	ND (2.5)	2.6	1.5	ND (2.5)	5.8	ND (0.5)	ND (5.0)	390	ND (0.5)	ND	ND	ND	ND	ND
NA	NA	NA	ND	NA	NA	5.4	68	14	26	200	0.7	ND (5.0)	510	3.2	NA	NA	0.05	ND	NA
NA	NA	NA	0.25	NA	119	10	ND (2.0)	2	2.2	28	3	ND (4.0)	300	300	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	121	ND (2.5)	ND (2.5)	1.2	ND (2.5)	6.6	0.5	ND (5.0)	6.3	ND (0.5)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	4.3	33	14	17	180	ND (0.5)	ND (5.0)	120	1.3	NA	NA	0.03	ND	NA
NA	NA	NA	1	NA	173	32	1100	30	360	1200	1.9	ND (4.0)	4700	13	NA	NA	0.03	ND	NA
NA	NA	NA	2	NA	152	46	610	23	200	1400	1.2	ND (4.0)	2000	12	NA	NA	ND	ND	NA
NA	NA	NA	0.5	NA	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	1.6	ND	0.2	NA	52	~3.0	200	~0.89	37	110	0.69	ND (4.0)	250	1.4	ND	ND	0.08	ND	0.45
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
0.25	NA	NA	3	NA	155	ND (2.0)	3.8	ND (0.2)	~7.7	19	ND (2.0)	5.9	ND (20.0	ND (0.2)	ND	ND	0.10	0.1/0.1	0.50
1.5	>3.0	1.11	6	NA	144	ND (10.0)	ND (10.0	ND (2.0)	ND (10.0)	ND (20.0	ND (2.0)	ND (20.0)	40	ND (2.0)	ND	ND	~0.01	ND	0.44
1.1	NA	NA	6.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
>2	NA	NA	6	NA	170	~1.8	21	~46	~67	1600	ND (2.0)	ND (2.0)	1100	9.8	ND	ND	0.05	ND	0.22
~1.1	NA	NA	>6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	6	NA	NA	ND (2.0)	8.7	33	9.7	220	ND (0.4)	ND (4.0)	47	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	>6	NA	53	ND (2.0)	ND (2.0)	31	15	110	ND (0.4)	ND (4.0)	ND (4.0)	5.6	NA	NA	ND	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	17	ND (2.0)	4.5	5.5	4.7	40	1	ND (4.0)	3000	ND (4.0)	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	97	ND (2.5)	ND (2.5)	16	24	110	ND (2.5)	ND (5.0)	7.3	0.76	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.09	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1.70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	NA	NA
0.3	2.3	0.19	3	NA	80	~11	470	~2.5	150	430	1.9	8.7	1100	2.2	ND	ND	ND	ND	0.6
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
~0.2	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.25 (0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	68	ND (2.0)	ND (2.0)	ND (0.4)	11	7.8	ND (2.0)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
NA	NA	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	NA	NA
NA	NA	NA	ND	NA	12	ND (2.0)	ND (2.0)	1.3	10	7.9	ND (2.0)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	0.03	ND	NA
NA	NA	NA	0.1	NA	62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	23	ND (2.0)	ND (2.0)	6.3	12	45	ND (0.4)	ND (4.0)	5.1	2.1	NA	NA	0.04	ND	NA
0.5 nessle	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
0.6 nessle	NA	NA	ND	NA	NA										NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	0.4	ND	ND	NA	9	ND (2.1)	11	ND (0.4)	ND (2.1)	17	ND (0.4)	ND (4.2)	82	6.3	ND	ND	0.11	ND	ND
NA	NA	NA	ND	NA	NA	ND (4.0)	7.5	16	5.3	51	ND (0.8)	ND (8.0)	ND (8.0)	3.3	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (4.0)	28	78	24	400	ND (0.8)	ND (8.0)	130	3.5	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	NA	ND (5.0)	24	49	18	310	ND (1.0)	ND (10.0)	130	3	NA	NA	0.04	ND	NA
NA	NA	NA	ND	NA	52	5.8	22	2.3	15	150	ND (0.4)	ND (4.0)	18	2.6	NA	NA	0.05	ND	NA
2	2.2	ND	2.00	NA	121	~4.7	600	ND (0.5)	100	750	2.9	ND (4.6)	1300	4.6	ND	ND	0.03	ND	ND
~0.1	1.1	ND	0.50	NA	211	ND (2.2)	ND (2.2)	ND (0.4)	3.8	27	ND (0.4)	ND (4.3)	76	ND (0.4)	ND	ND	0.06	ND	ND
NA	NA	NA	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.75	NA	97	ND (2.0)	62	27	5.1	350	0.66	ND (4.0)	8000	2.1	NA	NA	0.03	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.2	NA	0.2	ND	NA	23.0	~6.9	170.0	ND (0.4)	21.0	33.0	~2.1	ND (4.0)	230.0	6.0	ND	ND	~0.02	ND	ND
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA

NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	~0.02	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.00	NA	NA										NA	NA	NA	ND	NA
ND	0.2	ND	~0.1	NA	48	ND (1.0)	3.8	ND (0.2)	2.4	15	ND (0.2)	11	~210	ND (0.2)	ND	ND	0.04	ND	ND
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	1	0.15	0.50	NA	109	~27	500	~0.95	480	710	6.4	89	~8700	ND (0.2)	ND	ND	0.17	ND	ND
ND	1.6	0.17	0.70	NA	103	~30	550	~0.92	560	770	6.4	100	~9400	ND (0.2)	ND	ND	0.05	ND	ND
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.1	NA	58	3.7	30	17	7.7	190	1.3	ND (5.0)	560	0.67	NA	NA	ND	ND	NA
NA	NA	NA	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	49	5	64	18	11	160	ND (0.5)	ND (5.0)	600	0.68	NA	NA	ND	ND	NA
0.35*	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
~0.25	1.6	ND	0.75	NA	92	~3.3	81	ND (0.4)	14	100	0.55	ND (4.0)	700	2.9	ND	ND	0.11	ND	0.58
NA	NA	NA	2.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	70	7.1	210	19	41	380	1.7	ND (4.0)	2700	3.6	NA	NA	0.15	ND	NA
NA	NA	NA	6	NA	NA	ND (10.0)	330	260	130	~4100	84	34	910	ND (2.0)	NA	NA	0.03	ND	NA
NA	NA	NA	1	NA	118	64	350	22	140	530	17	ND (4.0)	6100	3	NA	NA	0.05	ND	NA
NA	NA	NA	1	NA	NA	ND (10.0)	320	99	110	~2000	ND (2.0)	ND (20.0)	410	3.8	NA	NA	ND	ND	NA
1.75	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.21	ND	NA
NA	NA	NA	5.00	NA	NA										NA	NA	NA	ND	NA
NA	NA	ND	NA	NA	69	7	17	1.1	60	59	ND (0.2)	ND (2.0)	1900	0.46	ND	ND	NA	ND	0.36
0.2	0.6	ND	~0.10	NA	68	ND (2.0)	40	~0.78	6.6	28	1.6	ND (4.0)	260	0.54	ND	ND	~0.02	ND	0.47
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.1	NA	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	ND	ND	NA	87	~1.9	55	~0.63	47	71	ND (0.2)	ND (2.0)	78	0.58	ND	ND	ND	ND	0.46
ND	NA	ND	ND	NA	66	6.3	15	0.93	55	58	ND (0.2)	ND (2.0)	2500	0.48	ND	ND	0.10	ND	0.38
0.2	0.7	ND	~0.10	NA	69	ND (2.0)	41	~0.82	7	31	1.6	ND (4.0)	250	0.6	ND	ND	~0.02	ND	0.47
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	ND	NA	70	6.2	130	13	60	720	ND (0.4)	ND (4.0)	15000	ND (0.4)	NA	NA	0.07	ND	NA
NA	NA	NA	ND	NA	NA	ND (10.0)	120	8.1	46	~130	ND (2.0)	ND (20.0)	ND (20.0)	ND (2.0)	NA	NA	0.04	ND	NA
~0.1	NA	ND	ND	NA	154	3.1	26	0.43	~22	58	ND (0.2)	ND (2.0)	290	4	ND	ND	0.53	ND	0.39
~0.1	0.9	ND	ND	NA	73	ND (2.0)	3.8	ND (0.4)	ND (2.0)	20	ND (0.4)	ND (4.0)	23	3.2	ND	ND	0.15	ND	0.44
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.1	NA	108	21	56	16	54	190	9.3	ND (4.0)	3900	1.4	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	ND (10.0)	~6.7	2.4	12	~22	ND (2.0)	ND (20.0)	20	ND (2.0)	NA	NA	ND	ND	NA
ND	NA	NA	4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	2	NA	NA	140	3900	100	850	1800	3.5	ND (4.0)	24000	13	NA	NA	0.06	ND	NA
NA	NA	NA	2	NA	285	ND (2.0)	550	82	40	290	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	NA	NA	ND	ND	NA
~0	NA	NA	6.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	6	NA	NA	14	4900	80	400	1900	13	ND (4.0)	24000	1.8	NA	NA	0.04	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.5	NA	NA	0.25	NA	315	~30	1500	~2.9	650	2800	14	ND (2.0)	13000	26	ND	ND	0.04	ND	0.67
0.5	>3.0	0.96	1	NA	300	~94	4100	~18	970	5000	31	ND (4.0)	20000	340	ND	ND	0.16	ND	0.48
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	100	39	4.6	42	30	490	ND (0.4)	8.1	4.4	2.4	NA	NA	0.09	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	~0.02	NA	NA
0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	~0.02	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	~0.02	NA	NA
0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.09	NA	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA
~0.1	NA	ND	ND	NA	48	ND (5.0)	120	2	110	710	ND (1.0)	ND (10.0)	680	ND (1.0)	na	na	~0.0	ND	ND
NA	NA	NA	0.75	NA	84	15	14	20	280	330	ND (0.4)	ND (4.0)	1400	1.4	NA	NA	ND	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	NA	NA
NA	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
NA	NA	NA	NA	NA	132	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
0.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10	NA	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
~0.1	0.9	ND	ND	NA	56	~27	350	~3.1	94	710	ND (1.0)	33	17	ND (1.0)	na	na	~0.0	ND	ND
NA	NA	NA	ND	NA	25	91	31	32	31	140	ND (0.5)	ND (5.0)	48	2.3	NA	NA	ND	ND	NA
NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
ND	0.7	0.24	ND	NA	47	ND (5.0)	95	~2.4	60	790	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	na	na	~0.02	ND	ND
0.3	0.6	0.22	0.3	NA	203	ND (5.0)	77	~2.3	67	540	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	NA	NA	ND	ND	ND
NA	NA	NA	0.4	NA	34	ND (2.0)	9.9	22	27	750	ND (0.4)	ND (4.0)	4	ND (0.4)	NA	NA	0.13	ND	NA

NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	0.8	ND	ND	NA	49	ND (5.0)	96	~3.0	69	900	ND (1.0)	ND (10.0)	ND (10.0)	ND (1.0)	NA	NA	ND	ND	ND
NA	NA	NA	4	NA	95	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	3	NA	342	29	490	27	95	1200	0.56	ND (5.0)	2600	2.7	NA	NA	0.56	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	0.8	0.11	0.35	NA	42	~4.4	250	~0.79	62	170	1.4	ND (4.0)	480	5.5	ND	ND	0.08	ND	0.29
NA	NA	NA	0.25	NA	NA	ND (20.0)	99	21	99	550	ND (4.0)	ND (40.0)	ND (40.0)	ND (4.0)	NA	NA	ND	ND	NA
~0.1	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	ND	NA
NA	NA	NA	0.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	ND	NA	NA										NA	NA	NA	ND	NA
ND	0.2	ND	ND	NA	18	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	15	~2.9	ND	ND	~0.01	ND	ND
NA	NA	NA	ND	1.4	22	ND (2.5)	2.8	8.2	ND (2.5)	44	ND (0.5)	ND (5.0)	75	1.8	ND	ND	ND	ND	ND
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08	NA	NA
NA	NA	NA	3	1.4	23	ND (2.0)	29	19	6.5	250	0.63	ND (4.0)	330	0.65	ND	ND	0.04	ND	ND
ND	0.2	ND	ND	NA	19	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	12	~2.2	ND	ND	0.09	ND	ND
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
>3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1.10	NA	NA	0.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA
NA	NA	NA	>6	NA	23	ND (2.0)	ND (2.0)	11	ND (2.0)	79	ND (0.4)	ND (4.0)	67	ND (4.0)	NA	NA	0.07	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	181	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
>3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA
1.5	NA	NA	NA	NA	NA	ND (1.0)	4.7	ND (0.2)	~4.8	18	~0.4	10	150	1.8	ND	ND	0.03	ND	ND
NA	NA	NA	4	NA	22	ND (2.5)	ND (2.5)	1.3	ND (2.5)	5.6	ND (0.5)	ND (5.0)	100	0.77	NA	NA	0.06	ND	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.75	NA	NA	NA	NA	NA	ND (1.1)	7.6	ND (0.2)	~6.2	13	1.4	ND (2.2)	74	1.5	ND	ND	ND	ND	1.1
2	>3	14.7	>3	NA	18	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	10	~1.1	ND	ND	0.08	ND	1.2
NA	NA	NA	4	NA	19	ND (2.0)	3.3	1.7	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	29	0.63	NA	NA	ND	ND	NA
0.5	NA	NA	NA	NA	NA	ND (1.0)	7.7	ND (0.2)	~5.5	15	ND (0.2)	ND (2.0)	86	1.5	ND	ND	0.04	ND	1.1
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	>3	16.7	>3	NA	25	ND (2.2)	ND (2.2)	ND (0.4)	ND (2.2)	ND (4.4)	ND (0.4)	ND (4.4)	7.5	~1.1	ND	ND	0.07	ND	1.2
NA	NA	NA	NA	NA	51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
~0.1	0.65	ND	ND	NA	50	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	7.8	ND (0.4)	ND (4.0)	ND (4.0)	~0.71	ND	ND	0.04	ND	ND
NA	NA	13.8	NA	NA	23	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	ND (4.0)	ND (0.4)	ND (4.0)	15	~0.55	ND	ND	NA	ND	1.2
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05	NA	NA
~0.1	0.6	ND	0.75	NA	45	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	14	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.08	ND	ND
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0.2	0.7	~0.08	0.6	NA	64	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	11	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.08	ND	ND
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ND	0.6	ND	0.5	NA	44	ND (2.0)	ND (2.0)	ND (0.4)	ND (2.0)	14	ND (0.4)	ND (4.0)	ND (4.0)	ND (0.4)	ND	ND	0.06	ND	ND

			Coordinates				YSI Meter				Weather		
ride	Potassium (mg/L)						Salinity	Temp	Cond uctivit	Rain Gauge	24hrs	48hrs	Wet/Dry ?
DR-850	Alpha	Field	GPS North(+)	GPS West (-)	Comments	Additional Location Information	ppt	C	uS	Location	inches	inches	
NA	3.3	0.75	42.42475049	-71.18132349	Park St behind Penzy	Mill Brook main stem,	0.3	14.1	612	Bedford	0	0	Dry
NA	3.8	1.95	42.42475049	-71.18132349	Park St behind Penzy	Mill Brook main stem,	0.3	17.6	714	Bedford	0.12	0.12	Wet
NA	NA	NA	42.426882	-71.189584	just before confluence	just downstream of Ar	0.3	20.2	660	Bedford	0.12	0.13	Wet
NA	NA	0.18	42.426882	-71.189584	before confluence wit	just downstream of Ar	0.3	21.2	667	Bedford	0	0	Dry
NA	NA	NA	42.420417	-71.168133	lots of suspended sed	Mill Brook instream ne	0.4	16.1	847	Bedford	0.12	0.12	Wet
NA	4.1	2.3	42.426894	-71.189660	Drake' slow flow, just	Between condo comp	0.4	15.8	726	Bedford	0.12	0.12	Wet
NA	NA	1.05	42.426894	-71.189660	slow flow, just upstrea	Between condo comp	0.5	21.5	665	Bedford	0	0	Dry
NA	NA	NA	42.42032496	-71.16473294	moss/algae growing o	Outfall to Mill Creek	0.6	10.4	1200	Bedford	0	0	Dry
NA	NA	NA	42.42032496	-71.16473294	moss/algae growing o	Outfall to Mill Creek	0.7	12.4	1307	Bedford	0.12	0.12	Wet
NA	3.8	1.25	42.42440075	-71.17458522	near Out of the Wood	Outfall to Mill Brook, E	0.7	10.1	1450	Bedford	0	0	Dry
NA	NA	NA	42.42440075	-71.17458522	near Out of the Wood	Outfall to Mill Brook, E	0.7	11.7	1407	Bedford	0.12	0.12	Wet
NA	6.4	4.15	42.42389075	-71.17374022	fresh smelling	Off Ryder Street lot	1.1	12.8	2188	Bedford	0	0	Dry
NA	NA	NA	42.42389075	-71.17374022	1/2 the flow from last	Off Ryder Street lot	1.1	13.6	2257	Bedford	0.12	0.12	Wet
NA	4.2	1.8	42.42029396	-71.16475294	duplicate of Grove01a		na	na	na	Bedford	0.12	0.12	Wet
NA	NA	NA	42.4503760	-71.2202638		Near corner Grant St	0.4	12.3	741	Bedford	0.12	0.13	Wet
NA	6.3	1.2	42.4277872	-71.2050922	lots of duck weed on s	Mass ave across from	0.5	18	946	Bedford	0.12	0.13	Wet
NA	NA	33.90	42.38549883	-71.06886597	Outflow w/some tidal	Behidnd Schraft's buil	17.2	19.5	28.5mS	Boston-Logan	0.08	0.43	Wet
NA	NA	NA	42.38549883	-71.06886597	Behidnd Schraft's bui	Sampled 10 min befo	22.6	20.8	35.83mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.38549883	-71.06886597	Behidnd Schraft's bui	Sampled 10 min befo	28.3	18.9	44.82mS	Boston-Logan	0	0	Dry
NA	NA	35.50	42.3854766	-71.06883007	Appeared to be mixed	Behidnd Schraft's buil	18.7	18.7	30.85mS	Boston-Logan	0.08	0.43	Wet
NA	NA	NA	42.3854766	-71.06883007	Behidnd Schraft's bui	East of 29J212	21.7	21.8	34.4mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.3854766	-71.06883007	Behidnd Schraft's bui	East of 29J212	28.2	18.6	43.67mS	Boston-Logan	0	0	Dry
NA	NA	NA	42.38549883	-71.06886597	duplicate of 29J212		22.6	20.8	35.83mS	Boston-Logan	0.1	0.35	Wet
NA	NA	NA	42.394436	71.049780	End of beachum and	(midpoint from road) s	na	na	na	Boston-Logan	1.28	1.28	Wet
0.97	140	35.30	42.394436	-71.049780	lots of trash; ground v	Just a few feet West o	8	20.2	12.28	Boston-Logan	0	0	Dry
NA	NA	NA	42.394405	71.049676	End of beachum and	(farthest from road) s	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.394405	71.049676	End of beachum and	not quite as black as l	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.394405	71.049676	Duplicate	Duplicate	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.403340	71.020587	(Gillooly) Cabot St be	Sewage odor (Gillool	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.403340	71.020587	(Gillooly) Cabot St be	water looks clear. Flo	na	na	na	Boston-Logan	0	0	Dry
NA	150	50+	42.403340	-71.020587	gray bacteria plaque,	(Gillooly) Cabot St be	7.5	11.5	na	Boston-Logan	0	0.42	Wet
0.62	77	49.20	42.403340	-71.020587	grey bacterial plaque	Corner of Cabot and C	0.7	16.7	3631	Boston-Logan	0	0	Dry
NA	NA	NA	42.40333987	71.020587	gray plaque on bottom	and below outfall	0.5	15.8	291-246	Boston-Logan	0	0	Dry
NA	NA	NA	42.403340	-71.020587	gray bacteria plaque,	(Gillooly) Cabot St be	2	18.1	3750	Boston-Logan	0	0	Dry
NA	42	50+	42.40367	-71.020987	significant gray bacte	privately owned, drain	na	na	na	Boston-Logan	0	0.42	Wet
NA	NA	NA	42.40376623	-71.02130017	significant gray bacterial	plaque; some suds,	1.1/0.1	17.5/17.5	517/142	Boston-Logan	0	0	Dry
NA	NA	15.9	42.40367	-71.020987	significant gray bacte	privately owned, drain	0.5	16.2	1688	Boston-Logan	0.08	0.43	Wet
NA	NA	NA	42.40367	-71.020987	significant gray bacte	privately owned, drain	1	19.6	1850	Boston-Logan	0	0	Dry
NA	NA	NA	42.403340	71.020587	Duplicate		na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.407977	71.027112	Downstream of Rev06	Plaque covering outfa	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.407977	71.027112	Downstream of Rev06	Very little flow, greeni	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	43.209555	-71.531041	thick black/orange coating on bottom, tadpol		0.6	16.7	1204	Concord	0	0	Dry
NA	NA	NA	43.209555	-71.531041			0	18.3	18.3	Concord	1.02	1.04	Wet
NA	NA	NA	43.209555	-71.531041	duplicate of Mer4120		0.6	16.7	1204	Concord	0	0	Dry
NA	NA	NA	42.399997	71.053984	Where stream exits u	orange all over the roc	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.399997	71.053984	Where stream exits u	very silty, bacteria and	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.399997	71.053984	Where stream exits u	plaque accumulation,	na	na	na	Boston-Logan	0.31	0.31	Wet
0.96	140	50*	42.399997	-71.053984	thick bacteria/algae o	top corner of Boston M	6.5	20.34	11.36	Boston-Logan	0	0	Dry
NA	NA	NA	42.400115	71.050172	small pipe near IsEnd	very orange, very turb	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.400115	71.050172	small pipe near IsEnd	orange, slimy, and ve	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.400115	71.050172	small pipe near IsEnd	orange, slimy, and ve	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.4001152	-71.050172	Very cloudy, significa	Upstream of Island En	1	19.5	2014	Boston-Logan	0	0	Dry
NA	NA	NA	43.557084	-71.494182	Facility pipe to stream	Pre-storm sample.	0.1	16.8	184.6	Laconia	0.01	0.02	Dry
NA	NA	NA	43.557084	-71.494182	Facility pipe to stream	same sample location	0	17.6	54	Laconia	0.21	0.21	Wet
NA	NA	NA	43.556117	-71.500635	Ahern State Park Bea	pre-storm sample. Rig	0	21.7	90.8	Laconia	0.01	0.02	Dry
NA	NA	NA	43.556117	-71.500635	Ahern State Park Bea	2nd sample, taken du	0	89.3	21.7	Laconia	0.13	0.13	Wet
NA	NA	NA	43.557084	-71.494182	Duplicate of 996-F		0	17.6	54	Laconia	0.21	0.21	Wet
NA	NA	NA	42.70516882	-71.14005475	waded in, about 400'	mouth of Shawsheen	0.3	24.6	633	Lawrence	0	0	Dry
NA	NA	NA	42.696984	-71.143777	Mainstem Shawsheen	river sample	na	na	na	Lawrence	0	0	Dry
NA	NA	1.65	42.703501	-71.139591	Shawsheen River	Under 495/RR tracks	0.3	16.6	700	Lawrence	0.1	0.1	Wet
NA	NA	5.05	42.695971	-71.1455601	strong flow, lots and lo	Concrete outfall meta	0.5	14.1	1078	Lawrence	0.1	0.1	Wet
NA	NA	NA	42.695971	-71.1455601	took additional photos	South Lawrence Elem	0.5	15.5	1072	Lawrence	0	0	Dry
0.14	5.5	2.35	42.695971	-71.1455601	stream scoured, lots o	South Lawrence Elem	0.6	15.1	1158	Lawrence	0.01	0.01	Dry
NA	NA	3	42.70688	-71.1476552	SLE3a' significant wh	South Lawrence Elem	0.5	14.6	1045/83	Lawrence	0.04	0.04	Dry
NA	NA	1.25	42.70688	-71.1476552	SLE3b' Nitrate: 2. Nitr	South Lawrence Elem	0.5	14.83	984/790	Lawrence	0.04	0.04	Dry
NA	NA	1.65	42.70688	-71.1476552	SLEc' Lawrence DPW	South Lawrence Elem	0.5	14.7	957/747	Lawrence	0.04	0.04	Dry
NA	NA	NA	42.70688	-71.1476552	significant white/tan/g	South Lawrence Elem	0.6	15.6	1120	Lawrence	0	0	Dry
0.19	6.1	4.55	42.4503760	-71.2202638		Near corner Grant St	0.4	15.8	859	Boston-Logan	0	0	Dry
0.11	7.9	6.90	42.4277872	-71.2050922	Lots of duck weed on	Off Mass Ave	0.4	17.1	819	Boston-Logan	0	0	Dry
NA	NA	NA	42.466942	-70.92203147	1 culvert, 2 gates; son	sampled gate to the S	0.5	14.2	1780	Beverly	0	0	Dry
NA	NA	NA	42.466942	-70.92203147	Stacey Brook, Lynn		0.4	21.9	776	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.419214	71.117619	Mystic Valley Pkwy (W	Pretty clear	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.41921413	-71.11761932	Meeting House Brook		na	na	na	Boston-Logan	0	0	Dry
0.3	ND	0.85	42.419214	-71.117619	clouder than normal w	Meeting house brook,	0.3/1	11.7/11.9	550/180	Boston-Logan	0	0.03	Dry
NA	NA	NA	42.419214	71.117619	Culvert off Meeting H	Strong sewage odor c	na	na	na	Boston-Logan	1.28	1.28	Wet
NA	NA	NA	42.41921413	-71.11761932	Pipe off Meeting House	Brook	na	na	na	Boston-Logan	0	0	Dry
NA	NA	NA	42.743207	71.208453	walked in from small	Dry weather during sa	na	na	na		0.43		Wet
NA	NA	NA	42.743250	71.208438	walked in from small	Right on MA/NH bord	na	na	na		0.12		Wet
NA	NA	2.10	42.74320743	-71.20845291	needed reach	Hampshire Rd on boa	0.2	16.9	365.2	Lawrence	0	0	Dry

NA	NA	NA	42.724919	71.183033	RT 28 castle park	No noticable odor to s	na	na	na		0.12		Wet
NA	NA	0.30	42.72491896	-71.18303334	sample collected just	RT 28 castle park	0.2	16.7	384.6	Lawrence	0	0	Dry
NA	NA	NA	42.727453	71.188366	Outfall downstream e	Possible stream culve	na	na	na		0.12		wet
NA	NA	NA	42.72745251	-71.18836554	hydroelectric stream,	Osgood Street	na	na	na	Lawrence	0	0	Dry
NA	NA	NA	42.25100306	-71.0519303	Stream 2ft deep. thick	corner of Fullers Road	0.3	18.1	635	Boston-Logan	0.05	0.06	Dry
0.18	6.9	~7.5	42.251003	-71.051930	sample collected whe	about 1yard from outf	0.4	14.9	712	Boston-Logan	0.51	0.57	Wet
NA	NA	NA	42.20459437	-71.19851397	Plantingfield Brook, a	corner of Ash Rd and	0.3	16.9	663	Norwood	0	0	Dry
0.07	3.8	ND	42.204594	-71.198514	sample collected near culvert		0.3	17.4	712	Norwood	0.54	0.63	Wet
0.08	3.8	~1.7	42.204594	-71.198514	duplicate of PB02		0.3	17.4	712	Norwood	0.54	0.63	Wet
NA	NA	NA	42.25774194	-71.00886049	6 feet across	sampled just upstream	0.3	18	709	Boston-Logan	0.05	0.06	Dry
NA	NA	NA	42.25766282	-71.00896849	sampled stream before bridge		0.2	12.2	360.6	Milton-Blue Hi	1.5	0	Wet
NA	NA	NA	42.25623392	-71.02049266	2 cement culverts san	off Furnace Brook Par	0.4	17.1	790	Boston-Logan	0.05	0.06	Dry
NA	NA	ND	42.25627321	-71.02067588	onleft side of culvert		0.2	12.3	428.5	Milton-Blue Hi	1.5	0	Wet
NA	NA	>50	42.27616359	-71.03722522	oil sheen, jelly fish co	Office park off Heritag	8.1	13.4	na	Boston-Logan	0	0	Dry
1.15	270	50*	42.276164	-71.037225	occasional fine soap s	Sagamore Creek outf	13	18.5	*23.3m	Boston-Logan	0.01	0.01	Dry
NA	NA	NA	42.27616359	-71.03722522	sampled on incoming	Office park off Heritag	23.7	20	**37.4	Boston-Logan	0.05	0.06	Dry
NA	NA	35.80	42.27602123	-71.0320993	sampled inflow from culvert		4.3	12.6	7.78	Milton-Blue Hi	1.5	0	Wet
NA	NA	NA	42.275935	-71.031798	main chanell under he	previously named Sag	3.4	15.8	6.23mS	Boston-Logan	0.13	0.14	Wet
NA	NA	NA	42.27361693	-71.03395231	5ft from outflow		1.1	13.1	1708	Milton-Blue Hi	1.5	0	Wet
NA	NA	NA	42.273601	-71.034010	large wooden tide gat	Previously named Sag	0.8	15.4	1590	Boston-Logan	0.13	0.14	Wet
NA	NA	50*	42.276174	-71.037325	groundwater seep, wh	about 50ft downstream	na	na	na	Boston-Logan	0.01	0.01	Dry
NA	NA	NA	42.27616359	-71.03722522	groundwater seep, thi	just downstream of SA	2.3	16.4	3645	Boston-Logan	0.05	0.06	Dry
0.63	54	NA	42.278672	-71.012859	duplicate of WollB1	duplicate of WollB1	na	na	na	Milton-Blue Hi	0	0	Dry
0.8	110	50*	42.278672	-71.012859	duplicate of WollB1		na	na	na	Boston-Logan	0.01	0.01	Dry
NA	NA	NA	42.25069222	-70.99779295	duplicate of Canal1		na	na	na	Boston-Logan	0.05	0.06	Dry
NA	NA	0.05	42.25766282	-71.00896849	duplicate of FBP02		na	na	na	Milton-Blue Hi	1.5	0	Wet
NA	NA	>50	42.27867229	-71.01285912	covered w/metal grate	Between yacht clubs	15	12	na	Boston-Logan	0	0	Dry
1.01	200	50+	42.278672	-71.012859	Pungent 'corpse-y' od	outfall between yacht	4.7	15.2	*10.6m	Boston-Logan	0	0	Dry
0.61	55	29.30	42.278672	-71.012859	water flowing out of b	outfall between yacht	3	16.1	*5.55m	Milton-Blue Hi	0	0	Dry
0.76	100	50*	42.278672	-71.012859	water drops into smal	outfall between yacht	1.9	19	4172	Boston-Logan	0.01	0.01	Dry
NA	NA	NA	42.27867229	-71.01285912	sampled inside of out	Wollaston Beach outf	3.2	18	*5.81m	Boston-Logan	0.05	0.06	Dry
NA	NA	8.65	42.278672	-71.012859		outfall between yacht	3.5	12.8	4.87	Milton-Blue Hi	1.5	0	Wet
NA	NA	NA	42.278672	-71.012859	Pungent 'corpse-y' od	outfall between yacht	17.3	13.8	28.18mS	Boston-Logan	0.09	0.1	Dry
0.77	200	41.20	42.277357	-71.008933	trash in water and pla	just south of WollB1 o	2.7	17.1	**12mS	Milton-Blue Hi	0	0	Dry
0.84	210	50*	42.277357	-71.008933	as tide comes in it arr	outfall between WollB	12	19.4	*30.7m	Boston-Logan	0.01	0.01	Dry
NA	NA	NA	42.27716403	-71.00777498	sampled after tide had	Wollaston Beach outf	29	19.4	44.56m	Boston-Logan	0.05	0.06	Dry
NA	NA	11.3	42.277357	-71.008933	outfall across from cla	just south of WollB1 o	0.3	12.4	675	Milton-Blue Hi	1.5	0	Wet
NA	NA	NA	42.277357	-71.008933	trash in water and pla	just south of WollB1 o	13.2	14.3	24.89mS	Boston-Logan	0.09	0.1	Dry
NA	NA	NA	42.40269115	-71.00375656	Cloudy; algae on rock	Sampled over pedestr	1.7	18.1	3271	Boston-Logan	0	0	Dry
NA	NA	ND	42.40260397	-71.00346085	off 1A by esquire club	Green Street in Rever	0.5	17.8	943	Boston-Logan	0.08	0.43	Wet
NA	NA	NA	42.40269115	-71.00375656	Cloudy; algae on rock	Sampled under pedes	0.9	21	1840	Boston-Logan	0	0	Dry
NA	NA	NA	42.399852	-70.99260269	sample taken from ab	NE back corner of Sh	4.3	20.4	7.6	Boston-Logan	0	0	Dry
NA	NA	6.90	42.39988394	-70.99242127	outfall about 1ft under	Behind Shaw's back c	0.5	16.9	993	Boston-Logan	0.08	0.43	Wet
NA	NA	NA	42.755268	71.207933	Walked in behind autoparts/glass stor on righ		na	na	na		0.43		Wet
NA	NA	NA	42.755035	71.208086	Walked in behind auto	No noticable odor to s	na	na	na		0.12		Wet
NA	NA	1.80	42.75526814	-71.20793271	red rusty color, some	By auto glass place of	0.2	313.5	17.2	Lawrence	0	0	Dry
NA	NA	NA	42.762503	71.222746	Parked at Lancelot Court apartments behind		na	na	na		0.43		Wet
NA	NA	2.15	42.76250258	-71.22274645	slightly more cloudy th	downstream of road, s	na	na	na	Lawrence	0	0	Dry
NA	NA	1.65	42.76743837	-71.22301615	low flow	behind Kohl's parked	0.4	16.2	757	Lawrence	0	0	Dry
NA	NA	NA	42.767438	71.223016	Parked behind Kohl's		na	na	na		0.43		Wet
NA	NA	NA	42.774045	71.224331	Parked at Salem Man	No noticable odor to s	na	na	na		0.43		Wet
NA	NA	0.50	42.77404525	-71.22433096	thick algae growth, ve	flow from east under R	0.3	19.6	638	Lawrence	0	0	Dry
NA	NA	NA	42.778121	71.227147	Parked across from n	No noticable odor to s	na	na	na		0.43		Wet
NA	NA	1.80	42.77812136	-71.22714727	flow from under Rockingham park		0.3	15.8	650	Lawrence	0	0	Dry
NA	NA	NA	42.77812136	-71.22714727	duplicate		na	na	na	Lawrence	0	0	Dry
NA	NA	NA	42.776593	71.231045	West side of Rt 38 wh	No noticable odor to s	na	na	na		0.43		Wet
NA	NA	0.20	42.77659345	-71.23104502	sample taken approx	main stream sample	0.3	18.6	665	Lawrence	0	0	Dry
NA	NA	49.30	42.39401523	-71.07608867	Sample taken out out flow		na	na	na	Boston-Logan	0	0	Dry
NA	280	50+	42.41380356	-71.13242519	some surface inflow w	Near Amelia Earhart D	12	12.5	**20mS	Boston-Logan	0	0.42	Wet
0.81	130	46.10	42.41380356	-71.13242519	can hear running water in pipe; YSI measurm		9.1	17.7	15.1	Boston-Logan	0	0	Dry
NA	NA	NA	42.4787841	71.1131562	Sweetwater Brook we	Slight musty odor	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.4787841	71.1131562	Sweetwater Brook we	Clear flow, no obvious	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.4787841	-71.1131562	Sweetwater Brook we	behind service master	0.6	21.4	1193	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.4826072	71.1046187	Unnamed tributary to	Medium sewage odor	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.4826072	71.1046187	Unnamed tributary to	Musty odor	na	na	na	Boston-Logan	0.07	0.07	Dry
NA	NA	NA	42.4826072	71.1046187	Unnamed tributary to	Unnamed tributary to	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.4826072	71.1046187	Unnamed tributary to	No distinct odor	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.4826072	-71.1046187	Unnamed tributary to	Sweetwater Brook opp	na	na	na	Boston-Logan	0	0	Dry
0.15	4.8	0.25	42.4826072	-71.1046187	Cl2 exceeded holding	Unnamed tributary to	0.4	14.5	798	Boston-Logan	0.04/0	0.04/0.	Wet
NA	NA	NA	42.4826072	-71.1046187	Cl2 exceeded holding	Unnamed tributary to	0.6	15.1	1280	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @	Duplicate	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.483930	71.1039388	Duplicate	Duplicate	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.484141	71.103935	Inside culvert upstrea	sampled largest pipe	na	na	na	Boston-Logan	0.07	0.07	Dry
NA	NA	NA	42.484141	71.103935	Inside culvert upstrea	flow about 2-3 gal/min	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	NA	42.484141	-71.103935	Inside culvert upstrea	sampled largest pipe	0.5	19.4	950	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @	Slight odor coming fro	na	na	na	Boston-Logan	0.38	0.38	Wet
NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @	No odor	na	na	na	Boston-Logan	0.07	0.07	Dry
NA	NA	NA	42.484033	71.103950	Sweetwater Brook @	(0.1" 48hrs prior to sa	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.483930	71.1039388	Sweetwater Brook @	Slightly musty odor	na	na	na	Boston-Logan	0.31	0.31	Wet
NA	NA	2.65	42.48393	-71.1039388	Sweetwater Brook @	Lindenwood (upstream	na	na	na	Boston-Logan	0	0	Dry
0.15	3.4	0.90	42.483930	-71.1039388	Cl2 exceeded holding	Sweetwater Brook @	0.4	17	821	Boston-Logan	0.04/0	0.04/0.	Wet
NA	NA	NA	42.483930	-71.1039388	Cl2 exceeded holding	Sweetwater Brook @	0.7	18.2	1432	Boston-Logan	0	0.7	Dry
NA	NA	0.40	42.490277	-71.101799	much less than 2linde	Off Toms Way in Stor	na	na	na	Boston-Logan	0	0	Dry
0.11	3.2	0.40	42.490277	-71.101799	Cl2 exceeded holding	Off Toms Way in Stor	0.5	19.1	977	Boston-Logan	0.08/0	0.08/0.	Wet
ND (0.1)	ND	ND	42.490277	-71.101799	Cl2 exceeded holding	same location as Tom	0.1	21	245	Boston-Logan	0.1/0.	0.1/0.2	Wet
NA	NA	NA	42.490277	-71.101799	Cl2 exceeded holding	Off Toms Way in Stor	0.9	18.1	1701	Boston-Logan	0	0.7	Dry

NA	NA	NA	42.490277	-71.101799	duplicate		na	na	na	Boston-Logan	0	0	Dry
0.16	3.1	1.05	42.490277	-71.101799	Cl2 exceeded holding	duplicate of Toms	na	na	na	Boston-Logan	0.08/0	0.08/0.	Wet
NA	NA	NA	42.48607	-71.0976008	duplicate of Elm2		0.8	16.1	1632	Boston-Logan	0	0.7	Dry
NA	NA	NA	42.466942	-70.92203147	1 culvert, 2 gates; son	sampled gate to the N	1.1	14.8	1784	Beverly	0	0	Dry
NA	NA	NA	42.466942	-70.92203147	Stacey Brook, Swamp	Met Town Engineer, V	0.3	21.9	621	Beverly Airpor	0.23	0.23	Wet
NA	NA	NA	42.466942	-70.92203147	duplicate		na	na	na	Beverly	0	0	Dry
0.31	5.2	3.00	42.3628777	-71.1509558	Sawins Brook, sample	Near lot off Arsenal S	0.8	16.2	1521	Boston-Logan	0	0	Dry
NA	NA	NA	42.3628777	-71.1509558	Sawins Brook	small trib flowing ~10	0.3	14.1	571	Boston-Logan	0.02	0.51	Wet
NA	NA	16.70	42.3636533	-71.1511559	pipe discharging to Sa	about 30 feet upstrear	0.3	15.3	806	Boston-Logan	0	0	Dry
NA	NA	NA	42.3628777	-71.1509558	duplicate of SawB01		0.3	14.1	571	Boston-Logan	0.02	0.51	Wet
NA	NA	NA	42.456149	71.136269	ambient stream samp	Near Super Stop & S	na	na	na	Bedford	0.31	0.64	Wet
NA	NA	NA	42.456149	71.136269	ambient stream samp	Murky, some foam on	na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.46345477	-71.14925777	very light rain, small w	at end of Sylvester St	0.4	17.4	775	Boston-Logan	0	0.47	Wet
0.13	5.8	4.25	42.463455	-71.149258	sampled far right of c	Russel Brook at the e	0.6	17.1	1283	Bedford	0.01	0.02	Dry
NA	5.6	2.6	42.463455	-71.149258	sampled far right of c	Russel Brook at the e	0.5	9.7	965	Bedford	0.16	0.18	Wet
NA	NA	NA	42.46084009	-71.13716417	90 degree angle on pipe	downward, very stro	na	na	na	Boston-Logan	0	0	Dry
NA	5.1	1.4	42.4608915	-71.13718955	just downstream near	Swanton Street bridge	0.4	9.1	905	Bedford	0.16	0.18	Wet
0.16	6	1.30	42.463455	-71.149258	Duplicate of Russ1		na	na	na	Bedford	0.01	0.02	Dry
NA	NA	NA	42.4764251	71.1182001	Aberjona mainstem in	No odor	na	na	na	Bedford	0.18	0.18	Wet
NA	NA	NA	42.4764251	71.1182001	Aberjona mainstem in	Low TSS, tannish sta	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	0.80	42.4764251	-71.1182001	name on data sheet is	Aberjona mainstem in	0.5	17	935	Bedford	0	0	Dry
NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis	culvert to right not flo	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis	Sampled main strean	na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.503179	71.135298	Restaurant 99 off Mis	Waded 3 ft upstream	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	12.00	42.50317874	-71.13529801	warmer than yesterda	99 restaurant, Aberjor	na	na	na	Bedford	0	0	Dry
NA	NA	NA	42.50317874	-71.13529801	Mishawum Bridge, do	lots of moss on rocks/	0.4	23.2	1035	Bedford	0.01	0.13	Dry
NA	NA	NA	42.518563	71.146526	New Boston St where	water very turbid sligh	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.518563	71.146526	New Boston St where	Film on water, low flo	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.518563	71.146526	New Boston St where	Water grayish/green	na	na	na	Bedford	0.15	0.15	wet
NA	7.3	20.90	42.518563	-71.146526	Landfill Brook, very sl	Just south of Landfill E	na	na	na	Bedford	0	0.06	Dry
NA	NA	19.5	42.518563	-71.146526	Algae and oil on surfa	New Boston St where	0.4	9..9	815	Bedford	0	0	Dry
NA	NA	NA	42.518739	71.146411	Opposite stream from	Very turbid, foul odor	na	na	na	Bedford	0.89	0.89	Wet
NA	NA	NA	42.518739	71.146411	Opposite stream from	Suspended solids	na	na	na	Bedford	0.24	0.51	Wet
NA	4.8	34.60	42.518739	-71.146411	some (very little) suds	Southeast of Landfill E	na	na	na	Bedford	0	0.06	Dry
1.26	4.6	31.50	42.518739	-71.146411	Halls Brook across fro	Southeast of Landfill E	0.5	14	9.17	Bedford	0.01	0.01	Dry
NA	NA	20	42.518739	-71.146411	not as strong smelling	Opposite stream from	0.4	10.2	896	Bedford	0	0	Dry
NA	4.8	50.00	42.518739	-71.146411	duplicate		na	na	na	Bedford	0	0.06	Dry
NA	NA	NA	42.520981	71.147709	Just upstream from M	were stream exits outf	na	na	na	Bedford	0.89	0.89	Wet
1.28	4.4	27.80	42.520981	-71.147709	Upstream of Mys08 w	Low flow, light brown	0.5	16.1	935	Bedford	0.01	0.01	Dry
NA	NA	NA	42.498925	71.137440	Olympia Ave, just dov	Sandy bottom, beave	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.498925	71.137440	Olympia Ave, just dov	Sandy bottom, med f	na	na	na	Bedford	0.33	0.33	Wet
0.11	5.6	2.35	42.498925	-71.137440	duck instream~40'awa	Off Olympia Ave right	0.7	18	1416	Bedford	0.01	0.02	Dry
1.24	4.4	NA	42.518739	-71.146411	duplicate of Mys08		na	na	na	Bedford	0.01	0.01	Dry
NA	NA	NA	42.495550	71.133700	Blue culvert across R	Grey, turbid water	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.495550	71.133700	Blue culvert across R	Med flow tannish colo	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.495550	71.133700	Blue culvert across R	Clear, good flow, no c	na	na	na	Bedford	0.15	0.15	Wet
0.09	3.7	0*	42.495550	-71.133700	flow out of small stone	plue panel covering to	0.3	22.1	660	Bedford	0.01	0.02	Dry
NA	NA	NA	42.495400	71.133700	Culvert just 5 ft south	Lots of green duck we	na	na	na	Bedford	0.24	0.51	Wet
NA	NA	NA	42.495400	71.133700	Culvert just 5 ft south	Very little flow, believ	na	na	na	Bedford	0.33	0.33	Wet
0.09	3.4	0.90	42.495400	-71.133700	sampled on other side	about 10 feet from US	0.3	21.4	643	Bedford	0.01	0.02	Dry
NA	NA	NA	42.495412	71.134111	Upstream of US3, sar	Clear flow	na	na	na	Bedford	0.33	0.33	Wet
NA	NA	NA	42.495412	71.134111	Upstream of US3, sar	Clear flow	na	na	na	Bedford	0.15	0.15	Wet
0.11	3.7	0.70	42.495412	-71.134111	about 6 inches deep,	back corner of United	0	22.3	671	Bedford	0.01	0.02	Dry

	Location				Outfall		Inspection					13
	Date		Site	Time								E.coli
		Sampler			Pipe Mat.	Dia. (in)	Est. Flow (gpm)	Odor	Color	Turbidity	Floatables	(MPN/100 ml)
1	10/23/07	MassDEP	ShaR02t					very			sewage	1,904
2	11/29/07	MassDEP	ShaR02t					very			sewage	52
3	5/8/08	MassDEP	ShaR02t					strong	gray, with			2,909
4	7/11/08	NEET	ShaR02t									7,400
5	7/17/08	MassDEP	ShaR02t									19,863
6	7/30/08	MassDEP	ShaR02t									7,270
7	8/28/08	NEET	ShaR02t									130
8	6/10/09	OES	SLE3	13:11	CM	36	strong musty o		None	Clear	None	616
9	9/22/09	OES	SLE3	11:30	ncrete outf	3'	na	slight musty	None	Clear	None	205
10	3/23/10	OES	SLE3	14:30			10 to 12 inches deep i		gray	cloudy	/ gease / paper	
11	3/24/10	OEME ECA	SHAW01	9:50								307,600
12	3/26/10	Citizen					Gray water.					
13	5/12/10	AECOM	East Schoo	9:00				sewage	green/grey	cloudy	rees, floating matter (n	
14	5/19/10	AECOM	OSGOOD STREET				very strong sew		gray	cloudy	garbage	1,200
15	5/24/10	AECOM	Outfall (dry)				very slight od		clear	clear	None	40
16	6/4/10	AECOM	SLE	10:55			4000	none	clear	clear	branches	
17	6/10/10	OES	SLE3	7:25	ncrete outf	3'	NA	trong must	hite/tan/gra	lightly cloud	lamentous	1,954
18	6/10/10	OES	SLE3	8:25	ncrete outf	3'	NA	trong must	none	lightly cloud	lamentous	899
19	6/10/10	OES	SLE3	9:00	ncrete outf	3'	NA	trong must	none	lightly cloud	lamentous	806
20	6/11/10	AECOM	SLE	11:42			4000	none		clear	none	
21	6/16/10	AECOM	OUTFALL	13:00			rotten egg odor, very slig		clear	clear	none	39,000
22	6/18/10	AECOM	SLE				4000	none	none	none	none	
23	6/25/10	AECOM	SLE				4000	none	none	none	none	
24	7/22/10	City						sewage	gray	suspended solids		
25	7/23/10	AECOM	OUTFALL	15:00			faint musty/sewag		gray	cloudy	lids and ha	20,000
26	7/28/10	City						none	none	clear	surfaces of rocks and c	
27	8/4/10	OES	SLE3	9:30	concrete	3'	sharp punge		none	clear	nks of bact	1,230
28	8/5/10	City					none in stream, slight musty		none	clear	/grayish growth present	
29	8/12/10	City						none	none	clear	n the stream bed at the	
30	8/12/10	AECOM	OUTFALL	12:15								3,800
31	8/18/10	City						none	none	clear	uth of the outfall, which	
32	8/23/10	AECOM	OUTFALL	14:30								2,400
33	8/25/10	AECOM	OUTFALL	15:00			slight sulpher odor			clear		4,500
34	9/1/10	City						none	none	clear	terial, which later disap	
35	9/9/10	City					sewage-like		none	clear	aptured on bar grate.	
36	9/10/10	City							white material returns following a dump of ba			

37	9/15/10	City						slight musty o	none	clear	none	
38	9/23/10	City						none	none	clear	none	
39	9/29/10	City						none	none	clear	none	
40	10/6/10	City						none	none	clear	none	
41	10/14/10	City						none	none	clear	none	
42	10/20/10	City						none	none	clear	none	
43	10/27/10	City						none	dark	cloudy	none	
44	10/29/10	City						none	none	clear	none	
45	11/3/10	City						none		clear	none	
46	11/5/10	AECOM	OUTFALL	14:15								1,600
47	11/10/10	City						none	slightly dark	lightly cloud	none	
48	11/19/10	City						none	none; slight sheen, possibly due to leaf c			
49	11/22/10	AECOM	OUTFALL	13:55				none		clear	none	280
50	12/1/10	City						none		none, no debris or growth		
51	12/8/10	City						none		none, no debris or growth		
52	12/16/10	City						none		clear		
53	12/23/10	City						none		clear		
54	1/6/11	City						cottony, doughy substance observed on the bottom c				
55	1/25/11	City						sewage	suspended solids, cottony material on outfal			
56	2/9/11	City						none		cloudy		
57	2/16/11	City						none		cloudy		
58	2/23/11	City						sewage		cloudy	trash	
59	3/4/11	City						none	gray	cloudy		
60	3/9/11	City						none	gray	cloudy	n/surface coating	
61	3/16/11	City						none	gray	cloudy		
62	3/23/11	City						sewage	gray	cloudy		
63	3/28/11	City						sour milk	gray	cloudy		
64	4/6/11	City						none	gray			
65	4/13/11	City						mild sour mi	clear			
66	4/19/11	City							green/gray			
67	4/21/11	City							green/gray			
68	4/28/11	City						none	gray	cloudy		
69	5/2/11	City						sour milk	gray	cloudy		
70	5/11/11	City						sour milk	gray	cloudy		
71	5/18/12	City						sour milk	gray	cloudy		
72	5/26/11	City						none	clear			

73	5/31/11	City						none	clear			
74	6/8/11	City						none	clear			
75	6/9/11	City						none	clear	t from morning rain		
76	6/14/11	City						none	clear			
77	6/22/11	City						none	clear			
78	6/30/11	City						none	clear			
79	7/6/11	City						none	clear			
80	7/15/11	City						none	clear			
81	7/19/11	MassDEP	ShaR02t									517
82	7/21/11	City						none	clear			
83	7/22/11	AECOM	Shawshee	9:15								17,000
84	7/27/11	City						none	clear			
85	8/4/11	City						none	clear			
86	8/10/11	City						none	clear			
87	8/17/11	City						none	clear			
88	8/22/11	City						none	clear			
89	8/29/11	City						none	clear			
90	9/7/11	City						musty odor	clear			
91	9/14/11	City						none	clear			
92	9/19/11	City						none	clear			
93	9/26/11	City						none	clear			
94	10/11/11	City						none	clear			
95	10/17/11	City						none	clear			
96	11/1/11	City						none	clear			
97	11/9/11	City						none	clear			
98	11/14/11	City						none	clear			
99	11/21/11	City						none	clear			
100	11/28/11	City						none	clear			
101	12/6/11	City						none	clear			
102	12/12/11	City						none	clear			
103	12/20/11	City						none	clear			
104	12/26/11	City						none	clear			
105	1/3/12	City						none	clear			
106	1/10/12	City						none	clear			
107	1/17/12	City						none	clear			
108	1/24/12	City						none	clear			

109	1/30/12	City						none	clear			
110	2/7/12	City						none	clear			
111	2/15/12	City						none	clear			
112	2/22/12	City						none	clear			
113	2/27/12	City						none	clear			
114	3/6/12	ity / AECO	OUTFALL	11:35			sewage odor			cloudy		1,000,000
115	3/12/12	City						cloudy flow has subsided				
116	3/19/12	City					sewage odor			cloudy		
117	3/21/12	AECOM	OUTFALL	15:00								210,000
118	3/26/12	City					sewage odo		gray	cloudy		
119	3/30/12	City						none	clear			
120	4/2/12	City						none	clear			
121	4/10/12	City					slight, intermittent sewage odor			clear		
122	4/16/12	City						none		clear		
123	4/24/12	OES	LAW02	8:10			No odor observed; discharge appeared to be clear. Mod					857
124	4/25/12	AECOM	OF	14:20				none	clear	clear		520
125	4/30/12	City						none	clear			
126	5/7/12	City						none	clear			
127	5/14/12	City						none	clear			
128	5/15/12	OEME	OUTFALL	12:24								186
129	5/21/12	City						mild odor	gray	cloudy	toilet paper residue	
130	5/24/12	City						none	clear			
131	5/29/12	City						none	clear			
132	6/8/12	City						none	clear			
133	6/18/12	City						none	clear			
134	6/25/12	City						none	clear			
135	6/27/12	OES	LAW02	10:15			Strong sewage odor observed. Discharge appeared to b					1,986,280
136	6/28/12	City						none		clear		
137	6/29/2012	City								cloudy		
138	7/2/2012	City						none			sediment deposition	
139	7/9/2012	City						none		clear		
140	7/17/2012	City						none		clear		
141	7/24/2012	City						none		clear		
142	7/31/2012	City						none		clear		
143	8/6/2012	City						none		clear		
144	8/13/2012	City						none		clear		
145	8/20/2012	City						none		clear		
146	8/27/2012	City						none		clear		
147	9/4/2012	City						none		clear		

148	9/11/2012	City						none		clear		
149	9/17/2012	City						none		clear		
150	9/25/2012	City						none		clear		
151	10/4/2012	City						none		clear		
152	10/11/2012	City						none		clear		
153	10/15/2012	City						none		clear		
154	10/24/2012	AECOM	E SCHOO	13:10								310
155	10/30/2012	City						none		clear		
156	11/13/2012	City						odor of ashes and burnt material				
157	11/14/2012	City						none		clear		
158	11/14/2012	JM, NH, E	SHAW03	8:30	concrete outfall		20	Slight musty odor, clear, some green growth c				1,164
159	11/19/2012	City						none		clear		
160	11/27/2012	City						none		clear		
161	12/3/2012	City						none		clear		
	12/11/2012	City						none		clear		
	12/19/2012	City						none		clear		
	12/26/2012	City						none		clear		
	1/2/2013	City						none		clear		
	1/9/2013	City						none		clear		
	1/14/2013	City						none		clear		
	1/24/2013	City						none		clear		
	1/30/2013	City						none		clear		
	2/4/2013	City						none		clear		
	2/13/2013	City						none		clear		
	2/19/2013	City						none		clear		
	2/26/2013	City						none		clear		
	3/4/2013	City						none		clear		
	3/13/2013	City						none		clear		
	3/22/2013	City						none		clear		
	3/25/2013	City						none		clear		
	4/1/2013	City						none		clear		
	4/9/2013	City						none		clear		
	4/17/2013	City						none		clear		
	4/22/2013	City						none		clear		
	4/29/2013	City						none		clear		
	5/6/2013	City						none		clear	aquatic plants or algea	
	5/13/2013	City						none		clear		
	5/20/2013	City						none		clear		
	5/28/2013	City						none		clear		
	6/3/2013	City						none		clear		

6/10/2013	City		none		clear	
6/17/2013	City		none		clear	
6/25/2013	City		none		clear	
7/1/2013	City		none		clear	
7/9/2013	City		none		clear	
7/15/2013	City		none		clear	
7/24/2013	City		none		clear	
7/31/2013	City		none		clear	
8/5/2013	City		none		clear	
8/12/2013	City		none		clear	
8/19/2013	City		none		clear	
8/26/2013	City		none		clear	
9/3/2013	City		none		clear	
9/9/2013	City		none		clear	
9/16/2013	City		none		clear	
9/23/2013	City		none		clear	
9/30/2013	City		none		clear	
10/9/2013	City		none		clear	
10/15/2013	City		none		clear	
10/22/2013	City		none		clear	
10/28/2013	City		none		clear	
11/4/2013	City		none		clear	
11/12/2013	City		none		clear	
11/18/2013	City		none		clear	
11/26/2013	City		none		clear	
12/2/2013	City		none		clear	
12/10/2013	City		none		clear	
1/7/2014	City		none		clear	
1/14/2014	City		none		clear	
1/21/2014	City		none		clear	
1/27/2014	City		none		clear	
2/3/2014	City		none		clear	
2/11/2014	City		none		frozen dirt/debris	
2/20/2014	City		none	brown	silty	
2/24/2014	City		none		clear	
3/5/2014	City		none		clear	
3/10/2014	City		none		clear	brown silty deposits fro
3/17/2014	City		none		clear	brown silty deposits fro
3/24/2014	City		none		clear	
4/1/2014	City		Shawsheen flooding			

4/7/2014	City			none	clear		
4/17/2014	EPA	Law 02	7:50				7,945
4/17/2014	City		11:15	none	clear		
4/17/2014	EPA	Law 02	12:35				4,185
4/22/2014	City			none	clear		
4/29/2014	City			none	clear		
5/7/2014	City			none	hazy	macro algae	
5/12/2014	City			none	clear	macro algae	
5/19/2014	City			none	clear		
5/27/2014	City			none	clear		
6/2/2014	City			none	clear		
6/11/2014	City			none	clear		
6/17/2014	City			none	clear		
6/23/2014	City			none	clear		
6/30/2014	City			none	clear		
7/7/2014	City			none	clear		
7/14/2014	City			none	clear		
7/21/2014	City			none	clear		
7/28/2014	City			none	clear		
8/4/2014	City			none	clear		
8/12/2014	City			none	clear		
8/18/2014	City			none	clear		
8/26/2014	City			none	clear		

14	15	16	17	18	19	20	21	22	23	24	25	26
Entero (MPN/100 ml)	Surfact. (mg/l)				NH3 (mg/l)						P	
	Any	Alpha	Field	DR-850	Any	Alpha	Field	Nessler	DR-850	Test St.	EPA (µg/L)	Atenolol
	ND (0.10)		ND (0.10)		0.31	0.31						
	0.10		0.10		0.6			0.6				
445	0.10		0.1		0.4			0.4			9	ND (2.1)
					3		3					
17,329												
ot sewage)												
	0.12	0.12			0.095	0.095						
	ND (0.05)	ND (0.05)			ND (0.075)	ND (0.075)						
2,359	1		1									ND (4.0)
4,884	0.2		0.2									ND (4.0)
2,014	0.5		0.5									ND (5.0)
	ND (0.05)	ND (0.05)			0.084	0.084						
	3	3			5.17	5.17						
oncrete in flow path												
275	0.1		0.1							ND	52	5.8
t												
mouth of the outfall												
	ND (0.05)	ND (0.05)			0.085	0.085						
transitions to a yellow color further downstream												
	0.06	0.06			0.105		0.105					
	ND (0.05)	ND (0.05)			0.096		0.096					
peared												
agel water												

	0.08	0.08			0.1	0.1						
decay												
	ND (0.05)	ND (0.05)			0.116	0.116						
of the outfall apron												
l surfaces												

	0.25		0.25		ND (0.10)		ND (0.10)					
	0.05	0.05			0.465	0.465						

	0.48	0.48			1.72	1.72						
	0.49	0.49			1.26	1.26						
30	0.2		0.2		ND (0.10)		ND (0.10)					8.8
	ND (0.05)	ND (0.05)			0.146	0.146						
488,400	2.5		2.5		6		6					820

	ND (0.05)	ND (0.05)			0.176	0.176						
120		NA				NA						1.7

›m catch basins and some green growth
›m catch basins

313
231

4.3
8.7

27	28	29	30	31	32	33	34	35	36			
PPCP ng/L									Chlorine			
Acetaminophen	Cotinine	1,7-Dimethyl	Caffeine	Azithromycin	Primidone	Urobilin	Carbamazepine	Metoprolol	Any	Alpha Total	Field	Test St.
									ND (0.02)		ND (0.02)	
11	ND (0.4)	ND (2.1)	17	ND (0.4)	ND (4.2)	82	6.3		0.11		0.11	
									ND (0.02)	ND (0.02)		
									ND (0.02)	ND (0.02)		
7.5	16	5.3	51	ND (0.8)	ND (8.0)	ND (8.0)	3.3					
28	78	24	400	ND (0.8)	ND (8.0)	130	3.5		0.04		0.04	
24	49	18	310	ND (1.0)	ND (10.0)	130	3		0.04		0.04	
									ND (0.02)	ND (0.02)		
									ND (0.02)	ND (0.02)		
22	2.3	15	150	ND (0.4)	ND (4.0)	18	2.6		0.05		0.05	
									ND (0.02)	ND (0.02)		
									ND (0.02)	ND (0.02)		
									ND (0.02)	ND (0.02)		

									ND (0.02)	ND (0.02)		
									ND (0.02)	ND (0.02)		

									ND (0.02)	ND (0.02)		

									ND (0.02)	ND (0.02)		
27	2.2	5	59				3		0.3		0.3	
									ND (0.02)	ND (0.02)		
									ND (0.02)	ND (0.02)		
15000	260	5300	25000				ND (4.0)	380	ND (0.02)		ND (0.02)	

									ND (0.02)	ND (0.02)		
17	64	20	290		71		2.9	3.5				

200	3.6	26	190				2.1	5.2
95	ND (0.4)	14	150				2.3	2.5

				Coordinates			
Flouride		Potassium (mg/L)					
Alpha	DR-850	Alpha	Field	GPS North(+)	GPS West (-)	Comments	Additional Location Information
				42.69553	-71.14606		Conduit at upper end of
			5.05	42.69597	-71.14556	strong flow, lots and lots of gray stringy bacterial gro	Concrete outfall metal grate
	0.14	5.5	2.35	42.69597	-71.14556	stream scoured, lots of bacteria growth washed awa	South Lawrence Elementar
						Todd visit following several days of heavy rain.	South Lawrence Elementary
						White growth on all surfaces in flow path	
			3	42.70688	-71.14766	SLE3a' significant white/tan/gray bacteria growth, al	South Lawrence Elementar
			1.25	42.70688	-71.14766	SLE3b' Nitrate: 2. Nitrite: 0.3. Phos Strip: 4	South Lawrence Elementar
			1.65	42.70688	-71.14766	SLEc' Lawrence DPW stopped (didn't get out of truc	South Lawrence Elementar
						white/orange growth below water surface covers most rock/concrete surfaces. E	
				42.70688	-71.14766	significant white/tan/gray bacteria growth, almost m	South Lawrence Elementar

						SSO due to blocked sewer	0.47" precip 3 days prior
						SSO due to blocked sewer	
				42.69553	-71.14615	Outfall located on East Boxford Street, north of Law	had rained previous mornin
				42.69553	-71.14615	Outfall located on East Boxford Street, north of Lawrence High School.	
						SSO due to sewer collapse	

NA						42.69552111	-71.14611578

Shawsheen flooding

Shawsheen flooding

YSI Meter			Weather		
Salinity	Temp	Conducti	24hrs	48hrs	Wet/Dry?
ppt	C	uS	inches	inches	
			0.09	0.09	dry
			0.1	0.1	wet
			0	0.01	dry
					dry
					dry
					dry
0.5	14.1	1078	0.1	0.1	Wet
0.6	15.1	1158	0.01	0.01	Dry
/, behind the school			1.26	1.29	wet
					dry
			0.03	0.52	wet
			0	0	dry
			0	0.02	dry
0.5	14.6	1045/835	0.04	0.04	Dry
0.5	14.83	984/790	0.04	0.04	Dry
0.5	14.7	957/747	0.04	0.04	Dry
			0.13		wet
Bare patches of rock and soil now			0	0	dry
0.6	15.6	1120	0	0	Dry
			0.09" - 0.47"		wet
			~2"		wet

					wet
					wet

					WET

			0	0	dry
			0	0	dry
			0	0	dry
0.3	13.5	614	Trace	1.67	wet
			0	trace	dry
			0	0.06	dry
0.5	15.8	935	Trace	Trace	dry

			0	0	dry
South		0.5	14.5	950	0.26

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 23 June 2009

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Lawrence, MA

From: Todd Borci

To: File

On Wednesday, 10 June 2009, EPA inspector Todd Borci conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Lawrence, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4") at multiple locations between East Boxford Street and Merrimack Street in Lawrence, MA. Additional EPA personnel assisting in the inspection were Leah Bowe and Christina Murphy.

At approximately 12:30 pm EPA collected a sample from the center of the Shawsheen River just prior to entering a culvert beneath Merrimack Street. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 700 uS/16.6 °C/0.3 ppt, respectively at the "Shaw1" sample location. Using a Hach brand color wheel/Nessler reagent field kit for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated low levels of ammonia (0.5 mg/l) and surfactants (0.05 mg/l) in the sample location identified as "Shaw1". EPA personnel typically use 0.5 mg/l ammonia and 0.25 mg/l surfactants as threshold level screening concentrations, where locations with sample results equal to or greater than these concentrations may be indicative of illicit discharges.

EPA observed the outfall just east of the intersection of East Boxford Street and Crawford Street at approximately 1235 hours. The EPA Inspector observed a large culvert emerging from beneath East Boxford Street with a moderate flow of surface water coming from the outfall. A strong smell of sewage was noted all along the approximate 200 yard length of the unnamed tributary channel before it empties into the Shawsheen River. EPA personnel noted some of the most significant filamentous bacterial growth they had ever observed in the field throughout the unnamed stream channel (see photos). The thickness and variety of the bacterial growth, and the fact that the growth extended throughout the approximate 200-yard length of the stream channel, was quite unusual.

EPA collected sample "SLE1" at 12:58 in the Shawsheen river approximately 10 yards downstream of the confluence of the unnamed tributary and the Shawsheen River. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 577 uS/16.7 °C/0.3 ppt, respectively at the "SLE1" sample location. Using a Hach brand color wheel/Nessler reagent field kit for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel

processed a surface water sample collected at the location. Field kits indicated low levels of

ammonia (0.4 mg/l) and surfactants (0.1 mg/l) in the sample location identified as “SLE1”.

EPA collected sample “SLE2” at 13:02 in the Shawsheen river approximately 30 yards upstream of the confluence of the unnamed tributary and the Shawsheen River. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 679 uS/16.7 °C/0.3 ppt, respectively at the “SLE2” sample location. Using a Hach brand color wheel/Nessler reagent field kit for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated low levels of ammonia (0.5 mg/l) and surfactants (0.05 mg/l) in the sample location identified as “SLE2”.

EPA collected sample “SLE3” at 13:05 in the unnamed tributary approximately 6 feet downstream of outfall from beneath East Boxford Street. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 1078 uS/14.1 °C/0.5 ppt, respectively at the “SLE3” sample location. Using a Hach brand color wheel/Nessler reagent field kit for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated low levels of ammonia (0.6 mg/l) and surfactants (0.1 mg/l) in the sample location identified as “SLE3”. As stated above, there was a significant sewage smell throughout this location and the bacterial growth along the stream bed was quite significant.

EPA notified MassDEP (Kevin Brander and Jenny Birnbaum) of their observations and referred the situation for potential enforcement, as MassDEP has an existing enforcement relationship with the City.

Once received, the analytical data for this sampling effort will be attached to this report.

The inspection occurred during wet weather, as according to the National Oceanic and Atmospheric Administration the last measurable precipitation was 0.1 inches on 9 June 2009 (Lawrence Municipal Airport gauge).

Inspection ended at 1315.

Photographs Attached.

Photo 1: 6/10/09 12:30 PM View facing west – Shawsheen River, flowing left to right, prior to entering culvert beneath Merrimack Street.

Photo 2: 6/10/09 View of confluence of unnamed stream and Shawsheen River. Shawsheen flow is right to left. Unnamed stream enters fro lower left. Note bacterial growth along unnamed stream bottom.

Photo 3: 6/10/09 View of sample location "SLE3" just downstream from culvert opening. Note white/gray bacterial growth coating streambed.

Photo 4: 6/10/09. Sample location "SLE3" and close up of bacterial growth. Entire stream bed is covered in thick white/gray bacterial growth.

Photo 5: Unnamed stream downstream of SLE3 location. Significant bacterial growth throughout stream.

Photo 6: Unnamed stream downstream of SLE3 location. Significant bacterial growth throughout streambed.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 5 April 2010

Subj: NPDES Compliance Inspection
Municipal Separate Storm Sewer System (MS4)
City of Lawrence, MA

From: Todd Borci

To: File

On Tuesday, 23 March 2010, EPA inspector Todd Borci conducted an unannounced inspection of the City of Lawrence, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4") at East Boxford Street in Lawrence, MA.

At approximately 2:30 pm EPA observed an unnamed outfall at the eastern terminus of East Boxford Street in Lawrence, MA. EPA had visited the location multiple times during the 2009 calendar year, and had sampled the outfall during several of those visits. During previous observations, the outfall often has a strong odor, the stream bed is stained gray, and the streambed is covered in gray filamentous bacteria, all indicators of an illicit discharge. After several days of heavy rain, EPA was inspecting the condition of the discharge.

EPA observed the Shawsheen River to be flooded, and the entire streambed from the unnamed outfall to the Shawsheen River was under water. The water level was approximately 10 to 12 inches in the pipe, and a distinct gray plume was visible for approximately 50 feet within the outfall opening. Upon closer inspection, gray, turbid water with a grease or oil sheen and a significant amount of small pieces of shredded paper were visible discharging from the outfall.

EPA collected a sample of the discharge for field screening for ammonia using Hach brand test strips. The field screening indicated an ammonia level of approximately 3 mg/l.

EPA notified the City of Lawrence of the apparent Sanitary Sewer Overflow (SSO) at approximately 3 pm. After speaking with a secretary at the City Public Works Department, EPA was instructed to leave a message for Matt Howland (978-382-2453).

The EPA inspector contacted Tim Bridges at EPA's Regional Laboratory in Chelmsford, MA to arrange for the outfall to be sampled. Due to the time of day, EPA scheduled the outfall for sampling the next morning.

Photo 1: 3/23/10 2:30 PM Unnamed outfall at eastern terminus of East Boxford Street. Water level is level of Shawsheen River. Distinct gray discharge with oil/grease/small pieces of paper coming from the outfall.

Photo 2: 3/23/10 Close up view of small pieces of paper being discharged from the unnamed outfall at the eastern terminus of East Boxford Street in Lawrence, MA.

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspec ion Type	Inspector	Fac Type
1 N 2	3 MAR041201 11	12 12/04/24 17	18 <	19 R	20

Inspection Type Description

Stormwater-MS4-sampling

Remarks

21 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 . 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)

Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station, identified as LAW01 (42.70861770 N, 71.13402411 W).
Outfall located on East Boxford Street, north of Lawrence High School, identified as LAW02 (42.69552796 N, 71.14615106 W)
Outfall located along south side of Merrimack River, north of New Balance factory, identified as LAW03 (42.70352069 N, 71.15579820 W).
Control sample collected upstream of sample identified as LAW03 to compare results, identified as LAW04 (42.70349669 N, 71.15589465 W).
Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse, identified as LAW05 (42.69218977 N, 71.17582728 W).
Outfall located on Shepard Street, northeast of Lawrence Riverfront Industrial Park, identified as LAW06 (42.68850280 N, 71.17926558 W).
Outfall located along north side of Merrimack River, off of Water Street, identified as LAW07 (42.69453064 N, 71.17665595 W).

Entry Time/Date	Permit Effective Date
7:45AM 4/24/2012	August 2003
Exit Time/Date	**Permit Expiration Date**
12:00PM 4/24/2012	August 2008

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

No contact with the City of Lawrence was made during this sampling inspection.

O her Facility Data

Receiving Water: Merrimack River
Shawsheen River (LAW02)

Name, Address of responsible Official/Title/Phone and Fax Number.

John Isensee
Director of Public Works
Phone: (978) 620-3090 Fax: (978) 722-9160

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Prevention	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Erin F. Trainor	US EPA / EIA / p. (617) 918-8382 / f. (617) 918-8282	4/24/2012
Todd Borci	US EPA / EIA / p. (617) 918-8382 / f. (617) 918-8282	4/24/2012
Signature of Management QA Reviewer	**Agency/Office/Phone and Fax Numbers**	**Date**

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspec ion Type	Inspector	Fac Type
1 N 2	3 MAR041201 11	12 12/06/27 17	18 <	19 R	20

Inspection Type Description

Stormwater-MS4-sampling

Remarks

21 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 1.0 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)

Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station, identified as LAW01 (42.70861770 N, 71.13402411 W).
Outfall located on East Boxford Street, north of Lawrence High School, identified as LAW02 (42.69552796 N, 71.14615106 W)
Outfall located along south side of Merrimack River, north of New Balance factory, identified as LAW03 (42.70352069 N, 71.15579820 W).
In-stream sample collected from the canal located upstream of LAW03, identified as LAW3up (42.70243609 N, 71.13576928 W).
Control sample collected from Merrimack River upstream of sample identified as LAW03 to compare results, identified as LAW04 (42.70349669 N, 71.15589465 W).
Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse, identified as LAW05 (42.69218977 N, 71.17582728 W).
Outfall located along north side of Merrimack River, off of Water Street, identified as LAW07 (42.69453064 N, 71.17665595 W).

Entry Time/Date: 8:25AM 6/27/2012
Permit Effective Date:
Exit Time/Date: 12:00PM 6/27/2012
Permit Expiration Date:

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

No contact with the City of Lawrence was made during this sampling inspection.

O her Facility Data

Receiving Water: Merrimack River
Shawsheen River (LAW02)

Name, Address of responsible Official/Title/Phone and Fax Number.

John Isensee
Director of Public Works
Phone: (978) 620-3090 Fax: (978) 722-9160

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Prevention	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Erin F. Trainor	US EPA / EIA / p. (617) 918-8382 / f. (617) 918-8282	7/13/2012
Todd Borci	US EPA / EIA / p. (617) 918-1358 / f. (617) 918-1810	7/13/2012
Signature of Management QA Reviewer	**Agency/Office/Phone and Fax Numbers**	**Date**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 15 June 2010

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Lawrence, MA

From: Todd Borci

To: File

On Thursday, 15 June 2010, EPA inspector Todd Borci conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Lawrence, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4") at an outfall located to the east of East Boxford Street in Lawrence, MA. Additional EPA personnel assisting in the inspection were Leah Bowe and Leanna Conway.

At approximately 0700 EPA personnel arrived on site. EPA initiated the inspection based on predicted rainfall of 0.5 inches overnight; however, no heavy precipitation had materialized overnight. Conditions upon arrival were a light drizzle and the ground and all surfaces were wet.

Upon initial examination, a strong sewage odor was noted within 20 to 30 feet of the outfall, and significant white/gray/tan bacterial and/or fungal growth was visible at the mouth of the outfall and along the stream bottom (Photograph Nos. 1 and 2). The unnamed stream travels for a total distance of approximately 500 feet to the northeast and then curving to the west before joining the Shawsheen River, and the entire stream bed over this distance was observed to be covered in the same bacterial/fungal growth observed at the outfall (see photos). The same strong odor was observed along the stream channel as well. Based on previous EPA visits to this outfall, the only real difference from prior events was that it appeared trash had been cleaned from the metal grate at the outfall opening.

At 0735, EPA collected the first set of samples. EPA collected a total of three sample sets at 0735, 0825, and 0900 hours. Each sample set consisted of a bacterial sample, a pharmaceutical sample, and a sample for field kit analyses. Water temperature, conductivity, and salinity were recorded during the collection of each sample set. A duplicate bacterial sample was collected during the 0735 sample set. All field results were recorded in the sample note book. Final data will be attached to this report once it has received quality assurance approval.

The City is required to investigate this outfall under a recent EPA Information Request. EPA will pass along analytical results to the City once received.

EPA departed the site at 1000 hours.

Photo 1: 6/10/10 0735 hrs. View facing Northeast – Flow from culvert toward Shawsheen River. Note thick gray bacterial growth throughout entire stream bed.

Photo 2: 6/10/10 0735 hrs. View of outfall opening. Note thick gray bacterial growth on stream

bed.

Photo 3: 6/10/10 0834 hrs. View of outfall opening. Note white/gray bacterial growth coating streambed.

Photo 4: 6/10/10. 9:03 hrs. Close-up photo of thick bacterial growth coating stream bed. Photo taken just downstream of outfall opening.

Photo 5: 9:10 hrs. Photo taken looking into culvert through metal grate. Note significant bacterial growth along culvert bottom.

Photo 6: 9:11 hrs. Photo taken facing northeast from outfall opening toward Shawsheen River. Note significant bacterial growth throughout streambed.

Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

July 02, 2012

Erin Trainor - EIA / OEME
US EPA New England R1

Project Number: 12060044
Project: MS4 Outfalls - Lawrence, MA
Analysis: Enterococcus in Water
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 06/27/2012

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method: Enterococcus by Defined Substrate, Revision #2

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
V = Insufficient sample volume
TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

Enterococcus in Water

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
LAW 01	AB30854	06/27/12	9:40 am	06/27/12	1:39 pm	Enterococcus in Water	**63**	10	
LAW 02	AB30855	06/27/12	10:15 am	06/27/12	1:39 pm	Enterococcus in Water	**488,400**	1000	
LAW 03	AB30851	06/27/12	8:25 am	06/27/12	1:39 pm	Enterococcus in Water	**20**	10	
LAW 03 UP	AB30853	06/27/12	8:50 am	06/27/12	1:39 pm	Enterococcus in Water	ND	10	
LAW 04	AB30852	06/27/12	8:30 am	06/27/12	1:39 pm	Enterococcus in Water	**10**	10	
LAW 05	AB30857	06/27/12	11:55 am	06/27/12	1:39 pm	Enterococcus in Water	**41**	10	
LAW 07	AB30856	06/27/12	11:10 am	06/27/12	1:39 pm	Enterococcus in Water	ND	10	

Number of Samples: 7

Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

July 02, 2012

Erin Trainor - EIA / OEME
US EPA New England R1

Project Number: 12060044
Project: MS4 Outfalls - Lawrence, MA
Analysis: E. Coli Defined Substrate
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 06/27/2012

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method: Total Coliform/E. coli by Defined Substrate, Revision #2

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
V = Insufficient sample volume
TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

E. Coli Defined Substrate

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
LAW 01	AB30854	06/27/12	9:40 am	06/27/12	1:39 pm	E. Coli Defined Substrate	**91**	4	
LAW 02	AB30855	06/27/12	10:15 am	06/27/12	1:39 pm	E. Coli Defined Substrate	**1,986,280**	1000	
LAW 03	AB30851	06/27/12	8:25 am	06/27/12	1:39 pm	E. Coli Defined Substrate	**115**	4	
LAW 03 UP	AB30853	06/27/12	8:50 am	06/27/12	1:39 pm	E. Coli Defined Substrate	**98**	4	
LAW 04	AB30852	06/27/12	8:30 am	06/27/12	1:39 pm	E. Coli Defined Substrate	**96**	4	
LAW 05	AB30857	06/27/12	11:55 am	06/27/12	1:39 pm	E. Coli Defined Substrate	**86,640**	100	
LAW 07	AB30856	06/27/12	11:10 am	06/27/12	1:39 pm	E. Coli Defined Substrate	**252**	4	

Number of Samples: 7

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.: 12060044

PROJECT NAME: Lawrence MS4

SAMPLERS: (Signature) [signature]

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	E. Coli	Enterococcus						REMARKS
Law03	6/27/12	0825		X		1	X	X						
Law04		0830		X		1	X	X						
Law3up		0850		X		1	X	X						
Law01		0940		X		1	X	X						
Law02		1015		X		1	X	X						
~~Law06~~ Law07		11:10		X	Law07	1	X	X						
Law05		11:55		X		1	X	X						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/27/12 13:34				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) [signature]	Date / Time 6/27/12 13:34	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

1- 18981

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: July 13, 2012

SUBJ: Lawrence, MA MS4 Inspections
City of Lawrence, Massachusetts

FROM: Erin Trainor, Inspector

TO: File

REQUESTED BY: Todd Borci (OES)

I. Background Information

A. Date, Time of inspection: Wednesday, June 27, 2012, 8:25 AM

B. Weather Conditions: Overcast, scattered rain, approximately 65 degrees F

C. USEPA Representatives: Erin Trainor
Todd Borci

D. Site Representative: John Isensee
Town of Lawrence
Director of Public Works
200 Common Street, Lawrence, MA 01840

Note: Site Representatives were not contacted.

E. Address: Various locations within the City of Lawrence, Massachusetts

II. Purpose of Inspection

The purpose of the inspection was to identify illicit connections or illegal discharges within the City of Lawrence Municipal Separate Stormwater Sewer System (MS4) that may adversely impact the water quality in the Merrimack River and Shawsheen River. Samples were collected from seven (7) stormwater outfalls/culverts in accordance with the Environmental Investigations and Analysis (EIA) unit Stormwater Program Plan.

III. Description of Sampling Locations

- Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station, identified as LAW01 (42.70861770 N, 71.13402411 W).
- Outfall located on East Boxford Street, north of Lawrence High School, identified as LAW02 (42.69552796 N, 71.14615106 W).
- Outfall located along south side of Merrimack River, north of New Balance factory, identified as LAW03 (42.70352069 N, 71.15579820 W).
- In-stream sample collected from the canal located upstream (to the south) of LAW03, identified as LAW3up (42.70243609 N, 71.13576928 W).
- Control sample collected upstream of sample identified as LAW03 to compare results, identified as LAW04 (42.70349669 N, 71.15589465 W).
- Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse, identified as LAW05 (42.69218977 N, 71.17582728 W).
- Outfall located along north side of Merrimack River, off of Water Street, identified as LAW07 (42.69453064 N, 71.17665595 W).

IV. Inspection Observations and Findings

On Wednesday, June 27, 2012, EPA inspectors Todd Borci and Erin Trainor conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Lawrence MS4 at seven locations which discharge into the Merrimack and Shawsheen Rivers.

The inspection started in Lawrence at approximately 8:25 AM. At the time of the inspection, the weather was overcast with scattered rain and approximately 65 degrees Fahrenheit. A rain event of approximately 1 inch occurred within 48 hours of the inspection. At the time of the inspection, water level of the Merrimack River was artificially lowered downstream of the Great Stone Dam by Enel Green Power to a depth of approximately 9 feet.

The City of Lawrence is covered under the 2003 General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). A copy the City of Lawrence Notice of Intent (NOI) has been posted online, and is dated August 20, 2003. The City of Lawrence EPA NPDES permit number is MAR041201.

The sampling locations described in Section III were field screened using test kits for ammonia, chlorine, and surfactants, and analyzed at the EPA New England Regional Laboratory (NERL) for E.Coli, Enterococcus, and Pharmaceutical and Personal Care Products (PPCPs) including: Atenolol, Acetaminophen, Cotinine, 1,7-Dimethylxanthine, Caffeine, and Carbamazepine. In-situ measurements for conductivity, salinity, and temperature were also recorded. The following tables summarize the findings. Photographs are included. Laboratory analytical results are anticipated to be available July 2012.

Attachments → Photogrpahs

End of Report

Summary of Lawrence, MA MS4 Inspection, June 27, 2012

Sample ID	LAW01	LAW02	LAW03	LAW03up	LAW04	LAW05	LAW07
Time	09:40	10:15	08:25	08:50	08:30	11:55	11:10
Latitude/Longitude	42.70861770 N/ 71.13402411 W	42.69552796 N/ 71.14615106 W	42.70352069 N/ 71.15579820 W	42.70243609 N/ 71.13576928 W	42.70349669 N/ 71.15589465 W	42.69218977 N/ 71.17582728 W	42.69453064 N/ 71.17665595 W
Description of Location	Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station.	Outfall located on East Boxford Street, north of Lawrence High School.	Outfall located along south side of Merrimack River, north of New Balance factory.	In-stream sample collected from the canal located upstream (to the south) of LAW03.	Approximately 10 feet upstream of LAW03.	Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse.	Outfall located along north side of Merrimack River, off of Water Street.
Physical Observations	Musty odor observed. Flow approximately 100-200 GPM.	Strong sewage odor observed. Discharge appeared to be cloudy. Grey bacterial growth observed on concrete outfall and spillway. Approximate flow 60-80 GPM.	Outfall submerged, sample collected on left side of concrete structure approximately one foot below water surface where upwelling in river was observed.	Musty odor observed. Flow greater than 100 GPM.	Control sample collected from river to compare results with LAW 03.	Outfall partially submerged. Moderate sewage odor. Debris/scum present above flow from outfall.	No odor observed. Flow from outfall did not appear mix with river until approximately 20 feet from point of sample collection.
Temperature, ºC	20.5	15.8	23.4	23.5	23.6	14.8	20.7
Specific Conductivity, µS	320	935	162	134	164.4	729	521
Salinity, ppt	0.2	0.5	0.1	0.1	0.1	0.4	0.3
Ammonia, mg/l	0.25	>6	0	0	NA	0	0.5
Total Chlorine, mg/l	0	0	0	0.48	NA	0	0.03
Detergent, mg/l	0.1	2.5	0.1	0.05	NA	0.2	0.2

NA: Not analyzed

LAW01: Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station.

LAW02: Outfall located on East Boxford Street, north of Lawrence High School.

LAW02: Grey bacterial growth on concrete spillway at LAW02.

LAW03: Outfall located along south side of Merrimack River, north of New Balance factory.

LAW03up: Canal located upstream (to the south) of LAW03.

LAW04: Control sample collected upstream of sample identified as LAW03 to compare results.

LAW05: Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse.

LAW07: Outfall located along north side of Merrimack River, off of Water Street.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: April 24, 2012

SUBJ: Lawrence, MA MS4 Inspections
City of Lawrence, Massachusetts

FROM: Erin Trainor, Inspector

TO: File

I. Background Information

A. Date, Time of inspection: Tuesday, April 24, 2012, 7:00 AM

B. Weather Conditions: Mostly sunny, approximately 55 degrees F

C. USEPA Representatives: Erin Trainor
Todd Borci

D. Site Representative: John Isensee
Town of Lawrence
Director of Public Works
200 Common Street, Lawrence, MA 01840

Note: Site Representatives were not contacted.

E. Address: Various locations within the City of Lawrence, Massachusetts

II. Purpose of Inspection

The purpose of the inspection was to identify illicit connections or illegal discharges within the City of Lawrence Municipal Separate Stormwater Sewer System (MS4) that may adversely impact the water quality in the Merrimack River and Shawsheen River. Samples were collected from seven (7) stormwater outfalls/culverts in accordance with the Environmental Investigations and Analysis (EIA) unit Stormwater Program Plan.

III. Description of Sampling Locations

- Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station, identified as LAW01 (42.70861770 N, 71.13402411 W).
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- Outfall located on Shepard Street, northeast of Lawrence Riverfront Industrial Park, identified as LAW06 (42.68850280 N, 71.17926558 W).
- Outfall located along north side of Merrimack River, off of Water Street, identified as LAW07 (42.69453064 N, 71.17665595 W).

IV. Inspection Observations and Findings

On Tuesday, April 24, 2012, EPA inspectors Todd Borci and Erin Trainor conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Lawrence MS4 at seven locations which discharge into the Merrimack and Shawsheen Rivers.

The inspection started in Lawrence at approximately 7:00 AM. At the time of the inspection, the weather was mostly sunny and approximately 55 degrees Fahrenheit. A rain event of approximately 2.5 inches occurred within 48 hours of the inspection. Low to moderate flows were generally observed. Based on USGS Hydrologic Unit 01100000, located in the City of Lowell, and USGS Hydrologic Unit 01100693, located in the Town of Haverhill, the Merrimack River had an increased gauge depth of approximately 3.5 feet between April 22, 2012 and the time of the inspection.

The City of Lawrence is covered under the 2003 General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). A copy the City of Lawrence Notice of Intent (NOI) has been posted online, and is dated August 20, 2003. The City of Lawrence EPA NPDES permit number is MAR041201.

The sampling locations described in Section III were field screened using test kits for ammonia, chlorine, and surfactants, and analyzed at the EPA New England Regional Laboratory (NERL) for E.Coli, Enterococcus, and Pharmaceutical and Personal Care Products (PPCPs) including: Atenolol, Acetaminophen, Cotinine, 1,7-Dimethylxanthine, Caffeine, and Carbamazepine. In-situ measurements for conductivity, salinity, and temperature were also recorded. The following tables summarize the findings. Photographs are included. Laboratory analytical results are anticipated to be available May 2012.

Summary of Lawrence, MA MS4 Inspection, April 24, 2012

Sample ID	LAW01	LAW02	LAW03	LAW04	LAW05	LAW06	LAW07
Time	7:45	8:10	8:54	9:00	9:40	10:30	11:08
Latitude/Longitude	42.70861770 N/ 71.13402411 W	42.69552796 N/ 71.14615106 W	42.70352069 N/ 71.15579820 W	42.70349669 N/ 71.15589465 W	42.69218977 N/ 71.17582728 W	42.68850280 N/ 71.17926558 W[1]	42.69453064 N/ 71.17665595 W
Description of Location	Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station.	Outfall located on East Boxford Street, north of Lawrence High School.	Outfall located along south side of Merrimack River, north of New Balance factory.	Approximately 10 feet upstream of LAW03.	Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse.	Outfall located on Shepard Street, northeast of Lawrence Riverfront Industrial Park.	Outfall located along north side of Merrimack River, off of Water Street.
Physical Observations	Slight sewage odor, possibly treated discharge. Some suds present.	No odor observed; discharge appeared to be clear. Moderate flow.	Outfall submerged, sample collected where upwelling in river was observed.	Control sample collected from river to compare results with LAW 03.	Outfall partially submerged. Moderate sewage odor. Debris/scum present above flow from outfall.	No odor observed; discharge appeared to be clear. Flow approximately 50-100 GPM.	Slight musty odor. Flow appeared to be flowing in then out of outfall. Debris present above sampling location.
Temperature, ºC	12.6	13.5	14.8	14.5	11	11.3	12.9
Specific Conductivity, µS	286	614	185	182	506	390.7	532.2
Salinity, ppt	0.14	0.3	0.09	0.09	0.24	0.19	0.26
Ammonia, mg/l	0.25	0	NA	NA	0	0	0.25
Total Chlorine, mg/l	0.43	0.3	NA	NA	0.17	0.04	0.11
Detergent, mg/l	<0.25	0.2	NA	NA	<0.25	<0.25	0.50

1. GPS coordinates were taken from Shepard Street due to limited satellite coverage.

NA: Not analyzed

LAW01: Outfall located on south side of Merrimack River, adjacent to Greater Lawrence Sanitary District Riverside Pump Station.

LAW02: Outfall located on East Boxford Street, north of Lawrence High School.

LAW03: Outfall located along south side of Merrimack River, north of New Balance factory.

LAW04: Control sample collected upstream of sample identified as LAW03 to compare results.

LAW05: Outfall located on Eaton Street, southeast of ABE Bashara Community Boathouse.

LAW06: Outfall located on Shepard Street, northeast of Lawrence Riverfront Industrial Park.

LAW07: Outfall located along north side of Merrimack River, off of Water Street.

End of Report.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: May 27, 2014

SUBJ: Lawrence, MA MS4 Inspections
City of Lawrence, Massachusetts

FROM: Erin Trainor, Inspector

TO: File

REVIEWED BY: Todd Borci, May 20, 2014

I. Background Information

A. Date, Time of inspection: Tuesday, April 17, 2014, 7:45 AM

B. Weather Conditions: Mostly sunny and cool, approximately 40 degrees F

C. USEPA Representatives: Erin Trainor
Todd Borci

D. Site Representative: John Isensee
Town of Lawrence
Director of Public Works
200 Common Street, Lawrence, MA 01840

Note: Site Representatives were not contacted.

E. Address: East Boxford Street, Lawrence, Massachusetts

II. Purpose of Inspection

The purpose of the inspection was to identify illicit connections or illegal discharges within the City of Lawrence Municipal Separate Stormwater Sewer System (MS4) that may adversely impact the water quality in the Merrimack River and Shawsheen River. Two samples were collected from the stormwater outfall located at the end of East Boxford Street in accordance with the Environmental Investigations and Analysis (EIA) unit Stormwater Program Plan.

III. Inspection Observations and Findings

On Tuesday, April 17, 2014, EPA inspectors Todd Borci and Erin Trainor conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Lawrence MS4 at the outfall located on East Boxford Street, north of Lawrence High School (42.69552796 N, 71.14615106 W).

The inspection started in Lawrence at approximately 7:45 AM. At the time of the inspection, the weather was mostly sunny and cool, approximately 40 degrees Fahrenheit. A rain event of approximately 3/4 inches occurred within 48 hours of the inspection. High flows in the receiving water were observed.

The City of Lawrence is covered under the 2003 General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). A copy the City of Lawrence Notice of Intent (NOI) has been posted online, and is dated August 20, 2003. The City of Lawrence EPA NPDES permit number is MAR041201.

Two samples, spaced approximately 5 hours apart, were collected from the stormwater outfall located at the end of East Boxford Street. The samples were field screened using test kits for ammonia, chlorine, and surfactants, and analyzed at the EPA New England Regional Laboratory (NERL) for E.Coli, Enterococcus, and Pharmaceutical and Personal Care Products (PPCPs) including: Atenolol, Acetaminophen, Cotinine, 1,7-Dimethylxanthine, Caffeine, and Carbamazepine. In-situ measurements for conductivity, salinity, and temperature were also recorded. The following tables summarize the findings. Photographs are included.

Summary of Lawrence, MA MS4 Inspection, April 17, 2014

Sample ID	LAW02	LAW02
Time	7:50	12:35
Physical Observations	High level in Shawsheen River. Low flow from outfall confirmed. Sample collected straight down from concrete headwall. Slight sheen in water surface.	Shawsheen River appears to have risen since AM sample. Sample collected up by grates.
Temperature, ºC	12.2	12.0
Specific Conductivity, µS	980	1109
Salinity, ppt	0.5	0.6
Ammonia, mg/l	0.25	0
Total Chlorine, mg/l	0	0.0
Detergent, mg/l	0.25	0.25
Atenolol, ng/l	4.3	8.7
Acetaminophen, ng/l	200	95
Cotinine, ng/l	3.6	ND
1,7-Dimethylxanthine, ng/l	26	14
Caffeine, ng/l	190	150
Carbamazepine, ng/l	2.1	2.3
Metoprolol, ng/l	5.2	2.5
E.Coli, MPN/100ml	7,945	4,185
Enterococcus, MPN/100ml	313	231

ND: Not detected above laboratory reporting limit.

LAW02: Outfall located on East Boxford Street, north of Lawrence High School, 0750.

LAW02: Outfall located on East Boxford Street, north of Lawrence High School, 1235.

End of Report.

Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

July 12, 2012

Erin Trainor - EIA / OEME
US EPA New England R1

Project Number: 12060044
Project: MS4 Outfalls - Lawrence, MA
Analysis: HPLC/MS/MS Source Tracking Analysis
Analyst: Peter Philbrook Peter Philbrook 12 · JULY · 2012

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIA-LCMS_STA.0.

The SOP is based on an EPA Regional Analytical Method developed at the EPA New England Laboratory.

Date Samples Received by the Laboratory: 06/27/2012

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N Boudreau 7/16/12
Daniel N Boudreau
Chemistry Team Leader

DATA QUALIFIERS

RL	Reporting limit
J	Estimated value
E	Estimated value exceeds the calibration range
L	Estimated value is below the calibration range
B	Analyte is associated with the lab blank or trip blank contamination.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.
ND	Not Detected above Reporting limit
NA	Not Applicable due to high sample dilutions or sample interferences
ME	Matrix Effect - Sample matrix was responsible for either enhanced or suppressed ionization within the electrospray ionization probe

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NARRATIVE

Aqueous samples (500mL) were extracted using a solid phase extraction (SPE) technique, following EPA Method 1694, in which samples were passed through a cartridge containing a solid sorbent material which pre-concentrates the target compounds onto the sorbent. The target compounds (TCs) were then eluted off the sorbent material using methanol. The resulting eluant is concentrated to dryness and re-constituted to a final volume of 1 mL with 20/80 Methanol/Water.

A 5uL aliquot of the sample extract was injected into a Ultra High Performance Liquid Chromatograph (UPLC), and the TCs were separated chromatographically using a C18 UPLC column running a buffered water/methanol gradient. The ionization mode used was electrospray with the polarity operating in the positive mode. The TCs were detected using a Waters Acquity TQD Tandem Quadrupole Mass Spectrometer. The tandem quadrupole is used to perform multiple reaction monitoring (MRM) where the precursor ion of interest is fragmented to product ion(s).

Quantitation was performed by the internal standard calibration method using isotopically labeled analogues. Sulfamethazine *13*C6 and Primidone d5 were used as a surrogate compounds to monitor extraction efficiency.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LAW 03	Lab Sample ID:	AB30851
Date of Collection:	6/27/2012	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	1 & 2
Volume Extracted:	500 mL	pH:	7.47

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**30**	2.00	
103-90-2	Acetaminophen	**4.4**	2.00	
486-56-6	Cotinine	**3.4**	0.40	
611-59-6	1,7-Dimethylxanthine	**12**	4.00	
58-08-2	Caffeine	**27**	8.00	
298-46-4	Carbamazepine	**9.4**	0.40	
56392-17-7	Metoprolol	**22**	4.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	68	23 - 181
Sulfamethazine 13C6	97	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LAW 04	Lab Sample ID:	AB30852
Date of Collection:	6/27/2012	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	1 & 2
Volume Extracted:	500 mL	pH:	7.22

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**35**	2.00	
103-90-2	Acetaminophen	**3.7**	2.00	
486-56-6	Cotinine	**3.7**	0.40	
611-59-6	1,7-Dimethylxanthine	**12**	4.00	
58-08-2	Caffeine	**24**	8.00	
298-46-4	Carbamazepine	**4.9**	0.80	
56392-17-7	Metoprolol	**21**	4.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	66	23 - 181
Sulfamethazine 13C6	99	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LAW 03 UP	Lab Sample ID:	AB30853
Date of Collection:	6/27/2012	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	1 & 2
Volume Extracted:	500 mL	pH:	7.16

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**30**	2.00	
103-90-2	Acetaminophen	**4.8**	2.00	
486-56-6	Cotinine	**3.5**	0.40	
611-59-6	1,7-Dimethylxanthine	**13**	4.00	
58-08-2	Caffeine	**28**	8.00	
298-46-4	Carbamazepine	**11**	0.80	
56392-17-7	Metoprolol	**24**	4.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	67	23 - 181
Sulfamethazine 13C6	102	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LAW 01	Lab Sample ID:	AB30854
Date of Collection:	6/27/2012	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	1 & 2
Volume Extracted:	500 mL	pH:	7.33

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	**6.0**	4.00	
486-56-6	Cotinine	**13**	0.40	
611-59-6	1,7-Dimethylxanthine	**27**	4.00	
58-08-2	Caffeine	**94**	8.00	
298-46-4	Carbamazepine	**0.49**	0.80	L
56392-17-7	Metoprolol	ND	2.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	57	23 - 181
Sulfamethazine 13C6	109	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LAW 02	Lab Sample ID:	AB30855
Date of Collection:	6/27/2012	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	100
Volume Extracted:	500 mL	pH:	6.92

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**820**	20.00	
103-90-2	Acetaminophen	**15000**	200.00	
486-56-6	Cotinine	**260**	4.00	
611-59-6	1,7-Dimethylxanthine	**5300**	200.00	
58-08-2	Caffeine	**25000**	400.00	
298-46-4	Carbamazepine	ND	4.00	
56392-17-7	Metoprolol	**380**	20.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	78	23 - 181
Sulfamethazine 13C6	132	15 - 132

Comments: Sample required multiple dilutions to quantitate target compounds. The extract was run at both a 10X and 100X dilution.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LAW 07	Lab Sample ID:	AB30856
Date of Collection:	6/27/2012	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	1,2,20
Volume Extracted:	500 mL	pH:	7.49

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**31**	2.00	
103-90-2	Acetaminophen	**2500**	40.00	
486-56-6	Cotinine	**3.3**	0.40	
611-59-6	1,7-Dimethylxanthine	**190**	4.00	
58-08-2	Caffeine	**74**	8.00	
298-46-4	Carbamazepine	**1.8**	0.80	
56392-17-7	Metoprolol	**2.8**	2.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	58	23 - 181
Sulfamethazine 13C6	73	15 - 132

Comments: Sample was run at 1X, 2X , and 20X dilutions to quantitate target compounds.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LAW 05	Lab Sample ID:	AB30857
Date of Collection:	6/27/2012	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.38

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**3.8**	2.00	
103-90-2	Acetaminophen	**40**	2.00	
486-56-6	Cotinine	**1.2**	0.40	
611-59-6	1,7-Dimethylxanthine	**9.5**	2.00	
58-08-2	Caffeine	**23**	4.00	
298-46-4	Carbamazepine	**3.7**	0.40	
56392-17-7	Metoprolol	**2.2**	2.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	58	23 - 181
Sulfamethazine 13C6	90	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	FIELD BLANK 01	Lab Sample ID:	AB30858
Date of Collection:	6/27/2012	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	6.39

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	ND	2.00	
486-56-6	Cotinine	ND	0.40	
611-59-6	1,7-Dimethylxanthine	ND	2.00	
58-08-2	Caffeine	ND	4.00	
298-46-4	Carbamazepine	ND	0.40	
56392-17-7	Metoprolol	ND	2.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	91	23 - 181
Sulfamethazine 13C6	81	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MS4 Outfalls - Lawrence, MA

Laboratory Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix	Water
Date of Extraction:	06/27/2012	Final Volume:	1 mL
Date of Analysis:	06/28/2012	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	6.39

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	ND	2.00	
486-56-6	Cotinine	ND	0.40	
611-59-6	1,7-Dimethylxanthine	ND	2.00	
58-08-2	Caffeine	ND	4.00	
298-46-4	Carbamazepine	ND	0.40	
56392-17-7	Metoprolol	ND	2.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
Sulfamethazine 13C6	65	
Primidone d5	81	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) RECOVERY

MS4 Outfalls - Lawrence, MA

COMPOUND	SPIKE ADDED ng/L	LFB CONCENTRATION ng/L	LFB RECOVERY %	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	114	95.0	64 - 135
Acetaminophen	120	98.0	81.7	48 - 122
Atenolol	120	97.5	81.2	52 - 128
Caffeine	240	212	88.3	68 - 126
Carbamazepine	24	20.1	83.8	65 - 121
Cotinine	24	20.4	85.0	60 - 120
Metoprolol	120	102	85.0	60 - 140

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MATRIX SPIKE RECOVERY

Sample ID: AB30850

PARAMETER	SPIKE ADDED ng/L	SAMPLE CONCENTRATION ng/L	MS CONCENTRATION ng/L	MS % REC	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	16	129	94.2	13 - 174
Acetaminophen	120	12	106	78.3	23 - 138
Atenolol	120	ND	102	85.0	49 - 137
Caffeine	240	126	229	42.9	31 - 156
Carbamazepine	24	2.2	22	82.5	47 - 143
Cotinine	24	11	24	54.2	46 - 121
Metoprolol	120	4.4	140	113	60 - 140

LABORATORY DUPLICATE RESULTS

Sample ID: AB30849

PARAMETER	SAMPLE RESULT ng/L	SAMPLE DUPLICATE RESULT ng/L	PRECISION RPD %	QC LIMITS
1,7-Dimethylxanthine	5.7	5.3	7.27	50
Acetaminophen	2.8	2.4	15.4	50
Atenolol	ND	ND	ND	50
Caffeine	16	17	6.06	50
Carbamazepine	2.0	1.9	5.13	50
Cotinine	3.3	3.4	2.98	50
Metoprolol	4.2	2.9	36.6	50

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
12060044	Lawrence MSA

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	STA						REMARKS
Law 03	6/27/12	0825		X		1	X						
Law 04	6/27/12	0830		X		1	X						
Law 3up	6/27/12	0850		X		1	X						
Law 01	6/27/12	0940		X		1	X						
Law 02	6/27/12	1015		X		1	X						
Law 06	6/27/12	11:10		X		1	X						
Law 05	6/27/12	11:55		X		1	X						
Field Blank 01	6/27/12	07:00		X		1	X						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	6/27/12 12:46				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		ESAT	6/27/12 12:46		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

20°C -

1- 18986

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

DRAFT REPORT

May 21, 2012

Tim Bridges - ECA / OEME
US EPA New England Regional Laboratory
11 Technology Dr.
North Chelmsford, MA 01863 - 2431

Project Number: 12050022
Project: Lawrence High School - Lawrence, MA
Analysis: E. Coli Defined Substrate
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 05/15/2012

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method: Total Coliform/E. coli by Defined Substrate, Revision #2

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

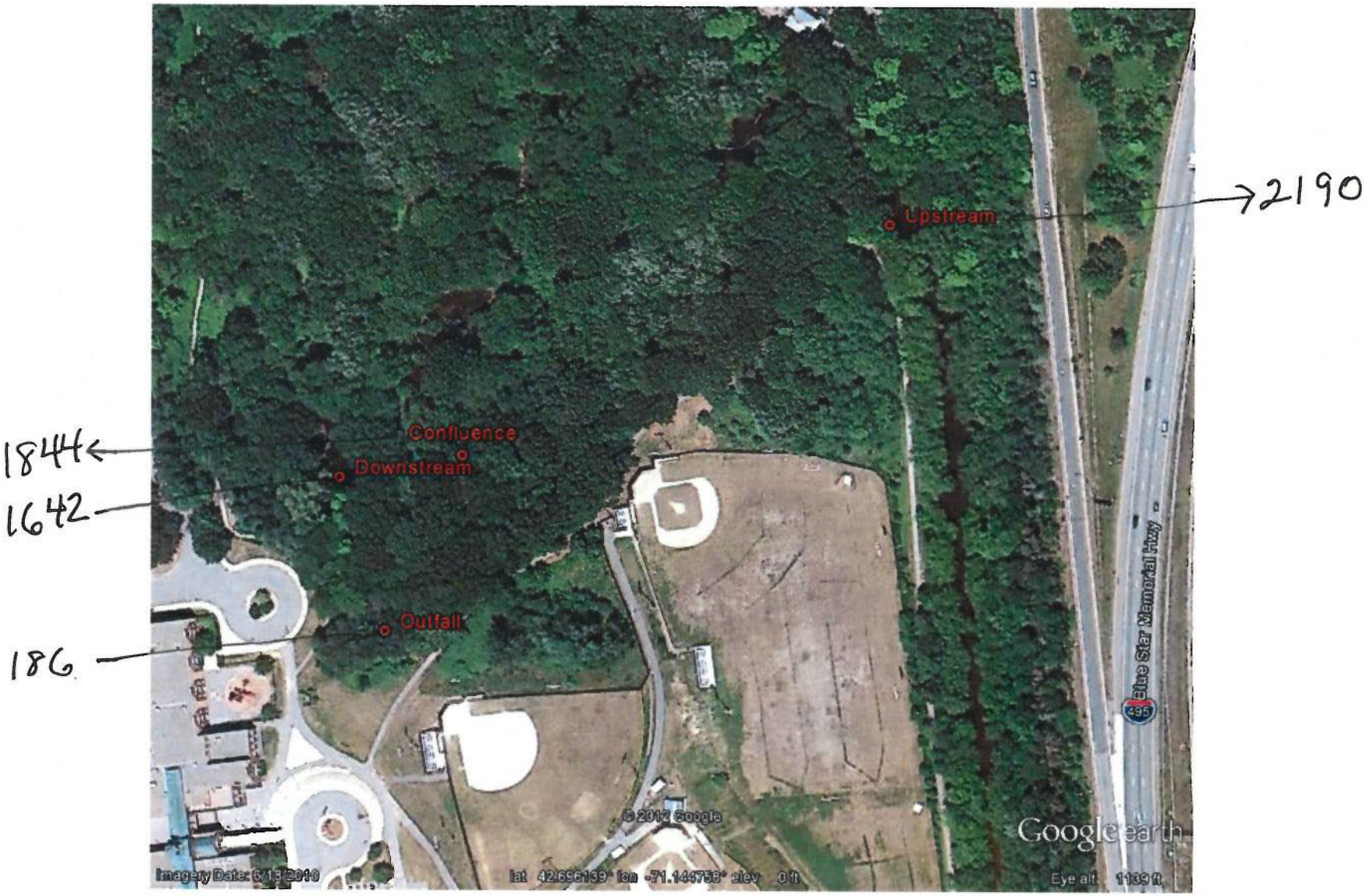
Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
V = Insufficient sample volume
TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

Lawrence High School Sampling Locations May 15, 2012



US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Lawrence High School - Lawrence, MA

E. Coli Defined Substrate

Matrix: Water

Sample Number	Lab ID	Date of Collection:	Date of Analysis	Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
CONFLUENCE	AB29959	05/15/12 12:33 pm	05/15/12 2:40 pm	E. Coli Defined Substrate	**1844**	4	
DOWNSTREAM	AB29956	05/15/12 12:27 pm	05/15/12 2:40 pm	E. Coli Defined Substrate	**1642**	4	
OUTFALL	AB29957	05/15/12 12:24 pm	05/15/12 2:40 pm	E. Coli Defined Substrate	**186**	4	
UPSTREAM	AB29958	05/15/12 12:48 pm	05/15/12 2:40 pm	E. Coli Defined Substrate	**2190**	4	

Number of Samples: 4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

DATE: January 2, 2012

SUBJ: MS4 Compliance Sampling Inspections
Municipalities of Lawrence, North Andover, and Methuen, Massachusetts

FROM: Jack Melcher, Inspector

THRU: Neil Handler, Senior Enforcement Coordinator

TO: File

I. Background Information

A. Date, Time of inspection: Wednesday, November 14, 8:00 AM

B. Weather Conditions: Sunny, approximately 50 degrees F

C. USEPA Representatives: Jack Melcher
Erin Trainor
Neil Handler

D. Site Representative(s): John Isensee
City of Lawrence
Acting Director of Public Works
200 Common Street, Lawrence, MA 01840

Eugene Willis
Town of North Andover
Town Engineer
384 Osgood St, North Andover, MA 01845

Frank Russo
City of Methuen
Chief Engineer
41 Pleasant St, Methuen, MA 01844

Note: Site Representatives were not contacted and were not present during the inspection.

E. Address: Various locations within the municipalities of Lawrence, North Andover, and Methuen (refer to Section III).

II. Purpose of Inspection

The purpose of the inspection was to identify illicit connections or illegal discharges within the municipalities of Lawrence, North Andover, and Methuen municipal separate stormwater sewer systems (MS4s) that may adversely impact the water quality. Samples were collected from eight (8) stormwater outfalls/culverts and/or directly from the stream, in accordance with the Environmental Investigations and Analysis (EIA) unit Stormwater Program Plan.

III. Description of Sampling Locations

Refer to attachments for a map of sampling locations.

Lawrence

- Outfall behind the South Lawrence East Elementary School, identified as SHAW03 (42.69552111, -71.14611578).
- Culverted Bloody Brook outfall to the Spickett River, identified as SPI07 (42.71510088, -71.15405144).
- Outfall to the Merrimack River near Doyle Street, identified as MERR08 (42.69445544, -71.17662812).
- Outfall to the Merrimack River near Fordham Road, identified as MERR09 (42.69590063, -71.18520015).
- Outfall to an unnamed tributary of the Merrimack River near the Abe Bashara community boathouse, identified as MERR04 (42.69220019, -71.17585447).

North Andover

- Chochechiwick River near Sutton Street, upstream of the sewer force main, identified as CHOC01 (42.70726365, -71.13327503).
- Chochechiwick River near the Greater Lawrence Sanitary District Riverside Pump Station, downstream of the sewer force main, identified as CHOC02 (42.70829022, -71.13395397).

Methuen

- Bloody Brook entering storm drain behind CVS off of Swan Street (Rte 110) in Methuen, identified as BLOO05 (42.72349286, -71.15844595).

IV. Inspection Observations and Findings

On Wednesday, November 14, 2012, EPA inspectors John Melcher, Neil Handler, and Erin Trainor conducted an unannounced Compliance Sampling Inspection (CSI) within the municipalities of Lawrence, North Andover, and Methuen at eight locations along the Shawsheen River, Chochechiwick River, Bloody Brook, Spickett River, and the Merrimack River.

The inspection started in Lawrence at approximately 8:00 AM. At the time of the inspection, the weather was sunny and approximately 50 degrees Fahrenheit. A rain event occurred in the sampling area on the previous day (November 13, 2012), with approximately 0.26 inches of rainfall[1].

The municipalities of Lawrence, North Andover, and Methuen are covered under the 2003 EPA NPDES General Permit for Storm Water Discharges from Small MS4s ("Permit"). The Permit, Notices of Intent (NOIs), and other information for these municipalities are available on the Permit website at http://www.epa.gov/region1/npdes/stormwater/2003-permit-archives.html. Permit numbers and NOI effective dates for these municipalities are summarized in the following table:

Municipality	**Permit Number**	**NOI Date Effective**
Lawrence	MAR041201	March 7, 2003
Methuen	MAR041210	July 25, 2003
North Andover	MAR041214	July 22, 2003

At all of the locations described in Section III, samples were analyzed at the EPA New England Regional Laboratory (NERL) for E.Coli, Enterococcus, and pharmaceutical and personal care products (PPCPs) including: Atenolol, Acetaminophen, Cotinine, 1,7-Dimethylxanthine, Caffeine, Carbamazepine, and Metoprolol, Primidone, and Sulfamethazine. In-situ measurements for conductivity, salinity, and temperature were also recorded at the time of sampling. At some of the sampling locations described in Section III, samples field screened using test kits for ammonia, chlorine, and surfactants. Field test kits were not conducted on samples SHAW03, MERR08, MERR09, and MERR04 because of constraints on the holding time of the bacteria samples. Table 1 summarizes the field data and Table 2 summarizes the laboratory data.

End of Report

Attachments:
Map: Lawrence, North Andover, and Methuen, MA MS4 Inspection, November 14, 2012
Table 1: Summary of Lawrence, North Andover, and Methuen, MA MS4 Inspection, November 14, 2012
Photos

[1] Based on observations at Lawrence Municipal Airport, provided by NCDC.

Map: Lawrence, North Andover, and Methuen, MA MS4 Inspection, November 14, 2012

Table 1: Field Data of Lawrence, North Andover, and Methuen, MA MS4 Inspection, November 14, 2012

Sample ID	SHAW03	CHOC01	CHOC02	BLOO05	SPI07	MERR08	MERR09	MERR04
Time	8:30	9:10	9:45	10:25	11:00	12:40	13:10	13:40
Description of Location	South Lawrence East Elementary School	Chochechiwick River upstream of sewer main	Chochechiwick River downstream of sewer main	Bloody Brook entering storm drain behind CVS in Methuen	Culverted Bloody Brook outfall to Spickett River	Outfall to Merrimack River near Doyle Street	Outfall to Merrimack River near Fordham St	Outfall to the Merrimack River near boathouse
Coordinates of Location (decimal degrees)	42.69552111, -71.14611578	42.70726365, -71.13327503	42.70829022, -71.13395397	42.72349286, -71.15844595	42.71510088, -71.15405144	42.69445544, -71.17662812	42.69590063, -71.18520015	42.69220019, -71.17585447
Photos	3447	3448	3449	3450	3451, 3452, 3453	3454	3455, 3456	3458
Physical Observations	Slight musty odor, clear, some green growth on rocks	Slight sewer odor, cloudy	Slight odor	Slight odor, cloudy	Black film on rocks in channel	No odor, clear	Very little flow	Partially submerged
Estimated Flow, gpm	20	NA	50	NA	100	5-10	<1	NA
Temperature, ˚C	14.5	7.3	7.3	8.0	9.4	10.5	11.5	14.4
Specific Conductivity, µS/cm	950	535	475	1,050	1,032	288	1,410	690
Salinity, ppt	0.5	0.3	0.2	0.5	0.5	0.1	0.7	0.3
Ammonia, mg/L	NA	ND (0.1)	0.25	ND (0.1)	0.25	NA	NA	NA
Total Chlorine, mg/L	NA	0.03	0.02	0.04	0.03	NA	NA	NA
Surfactants, mg/L	NA	<0.25 (0.2)	<0.25 (0.1)	<0.25 (0.2)	0.25	NA	NA	NA

NA: Not analyzed ND: Not detected above reporting limit gpm: gallons per minute (X.X): estimated value

Table 2: Laboratory Data of Lawrence, North Andover, and Methuen, MA MS4 Inspection, November 14, 2012

Sample ID	SHAW03	CHOC01	CHOC02	BLOO05	SPI07	MERR08	MERR09	MERR04
Time	8:30	9:10	9:45	10:25	11:00	12:40	13:10	13:40
Description of Location	South Lawrence East Elementary School	Chochechiwick River upstream of sewer main	Chochechiwick River downstream of sewer main	Bloody Brook entering storm drain behind CVS in Methuen	Culverted Bloody Brook outfall to Spickett River	Outfall to Merrimack River near Doyle Street	Outfall to Merrimack River near Fordham St	Outfall to the Merrimack River near boathouse
Atenolol, ng/l	1.7	ND (4.00)	ND (4.00)	ND (4.0)	11	14	ND (2.0)	140
Acetaminophen, ng/l	17	10	11	4.1	130	690	ND (2.0)	330
Cotinine, ng/l	64	9.4	9.4	8.4	9.8	4.5	0.81	17
1,7-Dimethylxanthine, ng/l	20	6.6	5.2	6.7	35	63	2.2	140
Caffeine, ng/l	290	94	94	57	220	250	6.9	290
Carbamazepine, ng/l	2.9	ND (0.80)	ND (0.80)	ND (0.80)	ND (0.8)	2.6	2.1	14
Metoprolol, ng/l	3.5	ND (4.00)	ND (4.00)	ND (4.00)	1.9	7.1	ND (2.0)	88
Primidone, ng/l	71	66	61	64	63	60	75	68
Sulfamethazine, ng/l	114	82	96	75	87	75	126	106
E.Coli, MPN/100ml	1,164	39	34	2,595	9,678	16	53	92,080
Enterococcus, MPN/100ml	120	31	41	909	583	ND (10)	ND (10)	11,199

NA: Not analyzed ND: Not detected above reporting limit gpm: gallons per minute

Photo Log:

Photo 3447. SHAW04. 11/14/12. Photo by Jack Melcher.
Outfall behind the South Lawrence East Elementary School.

Photo 3448. CHOC01. 11/14/12. Photo by Jack Melcher.
Chochechiwick River upstream of the sewer force main.

Photo 3449. CHOC02. 11/14/12. Photo by Jack Melcher.
Chochechiwick River downstream of the sewer force main.

Photo 3450. BLOO05. 11/14/12. Photo by Jack Melcher.
Bloody Brook entering storm drain behind CVS in Methuen.

Photo 3451. SPI07. 11/14/12. Photo by Jack Melcher.
Culverted Bloody Brook outfall to the Spickett River.

Photo 3452. SPI07. 11/14/12. Photo by Jack Melcher.
Channel to the Spickett River.

Photo 3453. SPI07. 11/14/12. Photo by Jack Melcher.
Black growth on rocks in channel to Spickett River.

Photo 3454. MERR08. 11/14/12. Photo by Jack Melcher.
Outfall to the Merrimack River near Doyle Street.

Photo 3455. MERR09. 11/14/12. Photo by Jack Melcher.
Outfall to the Merrimack River near Fordham Road.

Photo 3456. MERR09. 11/14/12. Photo by Jack Melcher.
Concrete channel to Merrimack River from outfall.

Photo 3458. MERR04. 11/14/12. Photo by Jack Melcher.
Outfall to an unnamed tributary of the Merrimack River near the community boathouse.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 23 June 2009

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Lawrence, MA

From: Todd Borci

To: File

On Wednesday, 10 June 2009, EPA inspector Todd Borci conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Lawrence, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4") at multiple locations between East Boxford Street and Merrimack Street in Lawrence, MA. Additional EPA personnel assisting in the inspection were Leah Bowe and Christina Murphy.

At approximately 12:30 pm EPA collected a sample from the center of the Shawsheen River just prior to entering a culvert beneath Merrimack Street. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 700 uS/16.6 °C/0.3 ppt, respectively at the "Shaw1" sample location. Using a Hach brand color wheel/Nessler reagent field kit for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated low levels of ammonia (0.5 mg/l) and surfactants (0.05 mg/l) in the sample location identified as "Shaw1". EPA personnel typically use 0.5 mg/l ammonia and 0.25 mg/l surfactants as threshold level screening concentrations, where locations with sample results equal to or greater than these concentrations may be indicative of illicit discharges.

EPA observed the outfall just east of the intersection of East Boxford Street and Crawford Street at approximately 1235 hours. The EPA Inspector observed a large culvert emerging from beneath East Boxford Street with a moderate flow of surface water coming from the outfall. A strong smell of sewage was noted all along the approximate 200 yard length of the unnamed tributary channel before it empties into the Shawsheen River. EPA personnel noted some of the most significant filamentous bacterial growth they had ever observed in the field throughout the unnamed stream channel (see photos). The thickness and variety of the bacterial growth, and the fact that the growth extended throughout the approximate 200-yard length of the stream channel, was quite unusual.

EPA collected sample "SLE1" at 12:58 in the Shawsheen river approximately 10 yards downstream of the confluence of the unnamed tributary and the Shawsheen River. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 577 uS/16.7 °C/0.3 ppt, respectively at the "SLE1" sample location. Using a Hach brand color wheel/Nessler reagent field kit for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel

processed a surface water sample collected at the location. Field kits indicated low levels of

ammonia (0.4 mg/l) and surfactants (0.1 mg/l) in the sample location identified as “SLE1”.

EPA collected sample “SLE2” at 13:02 in the Shawsheen river approximately 30 yards upstream of the confluence of the unnamed tributary and the Shawsheen River. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 679 uS/16.7 °C/0.3 ppt, respectively at the “SLE2” sample location. Using a Hach brand color wheel/Nessler reagent field kit for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated low levels of ammonia (0.5 mg/l) and surfactants (0.05 mg/l) in the sample location identified as “SLE2”.

EPA collected sample “SLE3” at 13:05 in the unnamed tributary approximately 6 feet downstream of outfall from beneath East Boxford Street. Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 1078 uS/14.1 °C/0.5 ppt, respectively at the “SLE3” sample location. Using a Hach brand color wheel/Nessler reagent field kit for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed a surface water sample collected at the location. Field kits indicated low levels of ammonia (0.6 mg/l) and surfactants (0.1 mg/l) in the sample location identified as “SLE3”. As stated above, there was a significant sewage smell throughout this location and the bacterial growth along the stream bed was quite significant.

EPA notified MassDEP (Kevin Brander and Jenny Birnbaum) of their observations and referred the situation for potential enforcement, as MassDEP has an existing enforcement relationship with the City.

Once received, the analytical data for this sampling effort will be attached to this report.

The inspection occurred during wet weather, as according to the National Oceanic and Atmospheric Administration the last measurable precipitation was 0.1 inches on 9 June 2009 (Lawrence Municipal Airport gauge).

Inspection ended at 1315.

Photographs Attached.

Photo 1: 6/10/09 12:30 PM View facing west – Shawsheen River, flowing left to right, prior to entering culvert beneath Merrimack Street.

Photo 2: 6/10/09 View of confluence of unnamed stream and Shawsheen River. Shawsheen flow is right to left. Unnamed stream enters fro lower left. Note bacterial growth along unnamed stream bottom.

Photo 3: 6/10/09 View of sample location "SLE3" just downstream from culvert opening. Note white/gray bacterial growth coating streambed.

Photo 4: 6/10/09. Sample location "SLE3" and close up of bacterial growth. Entire stream bed is covered in thick white/gray bacterial growth.

Photo 5: Unnamed stream downstream of SLE3 location. Significant bacterial growth throughout stream.

Photo 6: Unnamed stream downstream of SLE3 location. Significant bacterial growth throughout streambed.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region I - EPA New England

Author: Andrew Spejewski

Drafted Date: May 19, 2009
Finalized Date:
Reviewed by:
Reviewed date:

I. Facility Information

A. Facility Name: City of Leominster MS4
B. Facility Location: Leominster DPW
109 Graham St
Leominster, MA
C. Facility Contact: Patrick LaPointe (978-534-7500)
D. Contact Mailing Address: As above
E. Permit #: MAR041203

II. Background Information

A. Date of inspection: May 18, 2009
B. Weather Conditions: N/A (office review only)
C. US EPA Representative(s): Andrew Spejewski
D. State/Local Representative(s): None
E. Previous Enforcement Actions: None known for MS4

III Purpose of Inspection

The inspection was intended to clarify compliance with the IDDE portion of the MS4 permit. It was a follow-up to a section 308 information request issued earlier in the year.

V. Inspection

By prior arrangement with Mr. LaPointe, Mr. Spejewski arrived at the Leominster DPW at 11:00 AM.

Present were Mr. LaPointe (DPW Director), Roger Brooks (a DPW employee), Joanne DiNardo (environmental inspector), and John Roseberry (DPW engineer).

The group met in a conference room where Mr. Spejewski presented his credentials and began the inspection.

A copy of the current City MS4 map was on the table.

Mr. Roseberry explained the procedure for creating the MS4 map: He began with existing DPW plans and photos from an overfly of the city in 2004. Outfalls that have been visited in person are marked on the map as confirmed. There are also outfalls that are known to exist but have not been confirmed on site (these are marked on the map as unconfirmed), and outfalls that are not

known to exist.

Mr. Roseberry was not sure how many outfalls had been confirmed, but felt it was over 80% of the total. On the map on the table the area including Kennedy drive had the storm sewer lines and an outfall marked (on the map submitted with the 308, only catchbasins were marked on Kennedy drive, and they were colored yellow for unconfirmed.

Mr. Spejewski asked how the catchbasins and outfalls on the interstate were located. Mr. Roseberry stated that the state DOT had provided plans, from which the city located the catchbasins and pipes.

Mr. Roseberry did almost all of the on-site confirmation. Typically he did not keep any records of his visits. However, some outfalls needed GPS location, and Mr. Roseberry stated that for these he would enter data into a handheld device, including answers to questions from the IDDE manual, such as presence of odor, color, etc. Mr. Roseberry showed Mr. Spejewski a copy of the IDDE manual from the center for watershed studies at U Alabama as a source for the questions.

Mr. Spejewski asked if Mr. Roseberry could provide a printout of the data for a sample outfall. Mr. Roseberry said he would try.
[At the end of the inspection, Mr. Roseberry produced a printout showing the fields present in a database, but no actual data for any outfall.]

Mr. Roseberry stated that the only issues he noted while confirming outfalls was some sediment in places.

The group collectively at this point described an incident where soap suds were found, which were determined to be coming from a car wash on North Main, which was subsequently dealt with. No other recent instances of illicit connections could be described.

Mr. Brooks related that he remembered finding an illicit connection from an industrial facility several years ago, perhaps before the MS4 permit. Mr. Brooks also described an extensive I & I study of the sanitary system, including smoke testing, carried out under DEP order in 1997-2000. Mr. Spejewski asked if the smoke testing was carried out only on the sanitary lines and Mr. Brooks said it was. Mr. Spejewski noted that the smoke testing would discover a roof leader or other non-sewage source connected to the sanitary sewer, but asked if the smoke testing would have discovered a toilet or other source illicitly connected to the storm drains. Mr. Brooks conceded that it would not.

Mr. Brooks noted that the City is continuing to remove combined manholes, including 15 of them removed last year.

Mr. Spejewski then asked about ambient water quality testing. Mr. Brooks stated that the City has been working with the Nashua River Watershed Association. Volunteers from the NRWA have been testing the Monoosuc Brook (including Rockwell Pond) and the Nashua River (using EPA training and equipment). With a section 319 grant, the City has done work to improve water

quality in the Monoosuc watershed, including adding rain gardens and infiltration areas, increasing cleaning of catchbasins and replacing a major sanitary sewer trunk line which was undergoing significant infiltration.

Mr. Brooks stated that water quality in the upper brook has improved significantly, and the City is now beginning to look at the stretch below the railroad trestle near downtown, where water quality begins to decline. Mr. Brooks said the City is applying for grants to help with work in this area.

Noting a comment made by one of the city personnel regarding a pond on the MS4 map, Mr. Spejewski asked if there were many detention basins owned by the city. Ms DiNardo thought there were perhaps a few dozen, but there was no comprehensive list, nor were they marked on the map as such.

Mr. Spejewski asked who maintained and inspected the basins. Ms. DiNardo related several incidents where she required private owners of detention basins to perform maintenance, but apparently did not inspect city-owned basins.

Ms. DiNardo also related two other cases where she is pursuing stormwater actions: A U-Haul facility is washing trucks in an area where run-off reaches a water body, and a Lowes store under construction on route 117 had issues with failing erosion controls.

Mr. Spejewski then asked about the spill reports submitted as part of the 308 response. The group described most of the incidents, and confirmed that the reports were printouts from databases maintained by the DEP.

At this point, Mr. Spejewski thanked them for their time and left.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 20 April 2010

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
Town of Lexington, MA

From: Todd Borci

To: File

On Wednesday, 8 April 2010, EPA inspector Todd Borci conducted an unannounced compliance sampling inspection of the Town of Lexington, Massachusetts's (the "Town") Municipal Separate Storm Sewer System ("MS4") at several locations along Vine Brook and Mill Brook in the Town.

At 1300 EPA observed an the Vine Brook outlet at the corner of Grant and Hayes Streets (Photos 1-3). Vine Brook flows through a culvert beneath the center of Town, and then daylights at this location. EPA had previously identified this location as impacted by sanitary sewage, and the Town had reportedly investigated and fixed a number of locations upstream where the sanitary sewer was leaking into the Brook. EPA had sampled this location in 2009 and again detected elevated bacterial levels and other chemical indicators of sanitary sewage. A mild sanitary sewage odor was readily detectable at the outfall. Water was darkly stained with tannins but otherwise clear, and some suds visible. Several sanitary sewer manholes in the area had been spray-painted pink recently (Photos 3 and 4).

EPA observed the general route of the sanitary line in the area, which proceeded to the northeast for several hundred feet. No obvious signs of sanitary sewer overflows were visible.

EPA observed several locations along Mill Brook in the southern portion of Town. EPA observed and outfall discharging at Bow Street. Flow was approximately 1 gallon per minute, clear, with no apparent odor.

EPA notified Town Engineer Michael Flamang via electronic mail of the observations at Vine Brook, and included data collected by EPA in 2009, and requested the Town respond by April 23, 2010. EPA will continue to follow up with the Town.

Photo 1: 4/8/10 1:00 PM View facing north of Vine Brook outlet at the corner of Grant and Hayes Streets. Flow is from lower right to upper left in photo. Mild sewage odor was detectable from this location.

Photo 2: 4/8/10 1:00 pm. View facing south of Vine Brook outlet. Sanitary sewer manhole visible at upper left.

Photo 3: 1:02 pm View of weir just downstream of Vine Brook outlet.

Photo 4: 1:02 hours on 4/8/10. View facing east of Vine Brook outlet (behind fence at left center). Sanitary manholes have are visible and have been recently marked.

Photo 5: 4/8/10 View of Bow Street outfall. Flow was approximately 1 – 2 gallons per minute. Flow was clear with no odor.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 12 July 2011

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
Town of Lexington, MA

From: Todd Borci

To: File

On Wednesday, 22 June 2011, EPA inspector Todd Borci conducted a Compliance Sampling Inspection (CSI) of the Town of Lexington, Massachusetts's (the "Town") Municipal Separate Storm Sewer System ("MS4"). EPA collected water quality samples from Vine Brook at the intersection of Grant and Hayes Streets. According to information provided by the Town, Vine Brook flows beneath portions of the Town center and daylights at the location where samples were collected.

At 1215 hours EPA sampled the water discharging from a large culvert approximately 100 feet southeast of the intersection of Grant and Hayes Streets in Lexington, MA (sample id "Vine01"). EPA noted the culvert was discharging at approximately 50 gal/min and the flow was cloudy and brown, with a slight oily sheen on the water surface. Using Hach brand test strips for ammonia and a Chemetrics K-9400 field kit for surfactants, EPA processed a surface water sample collected at the location. Field kits indicated elevated levels of ammonia (1.0 mg/l) and detectable levels of surfactants (0.2 mg/l) in the sample. EPA personnel typically use 0.5 mg/l ammonia and 0.25 mg/l surfactants as threshold level screening concentrations, where sample results equal to or greater than these concentrations may be indicative of illicit discharges. A sample was collected and sent back to the EPA laboratory to be analyzed for e. coli and enterococcus bacteria, and selected pharmaceutical compounds.

Upon exiting the site, EPA noted a sign, obscured by overgrown vines, that warned visitors to the area not to come into contact with the water discharging from the culvert. The sign states "Notice: No Wading or Bathing Due to Water Conditions Per Order Lexington Board of Health".

Once received from EPA laboratory, the analytical data for this sampling effort will be attached to this report.

Inspection ended at 1230 hours. EPA will contact the Town for follow-up as appropriate.

Photo 1: 6/22/11 1215 View of "Vine01" sample location. Note murky brown water.

Photo 2: 6/22/11 1220 View of sign facing Hayes Lane, just west of the Vine Brook culvert opening. The sign states "Notice: No Wading or Bathing Due to Water Conditions Per Order Lexington Board of Health".

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NDPES	yy/mm/dd	Inspec ion Type	Inspector	Fac Type
1 N	2	3 M A 0 4 1 0 4 2	11 12 1 2 / 0 6 / 1 9	17 18 <	19 R 20

Inspection Type Description

Stormwater - MS4 - Sampling

Remarks

21 66

Inspec ion Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 1 . 0 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number)

- Outfall located at Bow Street crossing of Mill Brook, identified as Bow P (42.42644568 N, 71.19435744 W).
- In stream sample located directly upstream of Bow P, iden ified as Mill B1 (42.42644568 N, 71.19435744 W).
- In stream sample located approximately 150 feet upstream of Mill B1, identified as Mill B2 (42.42656593 N, 71.19481806 W).
- In stream sample located approximately 100 feet upstream of Mill B2, identified as Mill B3 (42.42667578 N, 71.19512052 W).
- In stream sample located approximately 150 feet upstream of Mill B3, identified as Mill B4 (42.42676662 N, 71.19558559 W).
- In stream sample located approximately 400 feet upstream of Mill B4 at the west end of Brandon Street, identified as Mill B5 (42.42750035 N, 71.19692711 W).
- In stream sample located approximately 300 feet upstream of Mill B5 at the Fottler Avenue crossing of Mill Brook, identified as Mi (42.42833380 N, 71.19679345 W).

Entry Time/Date	Permit Effective Date
10:45AM 6/19/2012	
Exit Time/Date	**Permit Expiration Date**
12:00PM 6/19/2012	

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

No contact with the Town of Lexington was made during this sampling inspection.

O her Facility Data

Receiving Water: Mill Brook

Name, Address of responsible Official/Title/Phone and Fax Number.

William Hadley
Director of Public Works
Phone: Main (781) 274-8300, Water and Sewer (781) 274-8370

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[ ] Permit	[ ] Self-Monitoring Program	[ ] Pretreatment	[X] MS4
[ ] Records/Reports	[ ] Compliance Schedules	[ ] Pollution Prevention	
[ ] Facility Site Review	[ ] Laboratory	[X] Storm Water	
[X] Effluent/Receiving Waters	[ ] Operations & Maintenance	[ ] Combined Sewer Overflow	
[ ] Flow Measurement	[ ] Sludge Handling/Disposal	[ ] Sanitary Sewer Overflow	

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

SEV Codes	SEV Description

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Todd Borci	US EPA / EIA / p. (617) 918-1358 / f. (617) 918-1810	6/29/2012
Erin F. Trainor	US EPA / EIA / p. (617) 918-8382 / f. (617) 918-8282	6/29/2012
Signature of Management QA Reviewer	**Agency/Office/Phone and Fax Numbers**	**Date**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 24 June 2009

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Lynn, MA

From: Todd Borci

To: File

On Tuesday, 16 June 2009, EPA inspector Todd Borci conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Lynn, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4") Stacey Brook outfall. EPA personnel collected surface water samples at the Stacey Brook outfall on the Lynn/Swampscott Line. Additional EPA personnel assisting in the inspection were Leah Bowe and Christina Murphy.

The Stacey Brook outfall consists of two large 10-foot by 10-foot box culverts that discharge onto Kings Beach along Nahant Bay at the municipal boundary of the City and the Town of Swampscott, MA.

EPA personnel noted a sharp odor at the outfall opening. While this area has occasional odor problems due to algae along the beach, the odor at the outfall was distinctly different. EPA observed significant flow coming from the southern culvert and moderate flow coming from the northern culvert. Recent tidal deposition of sand was apparent in both culverts, and flow was sufficient in both culverts to scour and suspend sand particles in the flow.

EPA collected a sample set approximately 15 feet downstream of the culvert opening where flow from both culverts was combined and well mixed. EPA collected surface water samples (Location ID: "Stacey") for the following parameters: bacteria (e. coli and enterococcus); ammonia; surfactants; total and free chlorine; potassium; and fluoride. EPA collected an additional grab sample for field processing of surfactants, ammonia, and free and total chlorine. EPA collected concurrent duplicate samples (Location ID: "StaceyD") as well.

Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 826 uS/14.2 °C/0.5 ppt, respectively at the "Stacey" sample location. Using Hach brand test strips for ammonia, a Hach field kit for ammonia, and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed surface water samples collected at the location. Sample and sample duplicate results were recorded for each kit. Ammonia test strips indicated elevated levels of ammonia (3.0/2.0 mg/l); ammonia field kits indicated elevated levels of ammonia (1.0/1.0 mg/l); and surfactant field kits indicated elevated readings as well (0.4/0.4 mg/l).

After sample collection, EPA used the YSI conductivity/ temperature/salinity meter to measure separately the flow from each culvert, prior to any mixing having occurred. In the southernmost culvert with the stronger flow, EPA recorded levels of 805 uS/14.1 °C/0.5 ppt, and in the northernmost culvert, EPA recorded levels of 1181 uS/14.6 °C/0.7 ppt.

EPA observed children swimming approximately 300 feet south of the outfall location.

Once received, the analytical data for this sampling effort will be attached to this report.

Weather on the day of inspection was dry and sunny. According to the National Oceanic and Atmospheric Administration, the last measurable precipitation was 0.2 inches on the morning of 14 June 2009 (Logan Airport gauge).

Inspection ended at 1230. EPA Inspector will provide data to MassDEP for enforcement follow-up.

End of Report.

Photos Attached.

Lynn, MA 6/16/09 EPA MS4 Inspection
Photographs

Photo 1: 6/16/09 at 1: M. View facing west of Stacey Brook outfall. Samples “Stacey” and “StaceyD” collected at photo center.

Photo 2: 6/16/09 1: M. View facing south with Stacey Brook in foreground, and children swimming at Kings Beach.

EPA New England Stormwater Outfall Inspection & Sampling Summary - Lynn and Swampscott, MA 11/15/11

Location																YSI Meter		
						Surfactants	Chlorine	NH3 (mg/l)	PPCP ng/L							Salinity	Temp	Conductivity
Date	Town	Site Name	Time	E.coli (MPN/100ml)	Entero (MPN/100ml)			Test St.	Atenolol	Acetaminophen	Cotinine	1,7-Dimethylxanthine	Caffeine	Sulfamethazine	Carbamazepine	ppt	C	uS
11/15/11	Lynn, MA	StaceyS	835	806	148	0.3	0.01	0.00	4.8	100	5.8	20	110	ND	3	0.4	12.8	782
11/15/11	Lynn, MA	StaceyS	907	445	309	0.2	0	0.00	ND	1100	5.8	46	120	ND	3.9	0.4	12.8	787
11/15/11	Lynn, MA	StaceyS	935	1,379	278	0.2	0	0.00	ND	110	4.8	39	1300	ND	9.6	0.4	12.8	731
11/15/11	Swampscott, MA	StaceyN	840	14,210	749	0.2	0.32	0.10	61	1200	20	350	230	ND	9.5	0.5	13.5	1043
11/15/11	Swampscott, MA	StaceyN	911	13,130	857	0.2	0.01	0.40	61	1300	23	210	250	ND	7.7	0.4	13.5	887
11/15/11	Swampscott, MA	StaceyN	940	22,240	504	0.25	0	0.25	51	1000	20	220	320	ND	8	0.5	13.6	1032
11/15/11	Swampscott, MA	Stacey03	1040	420	30	0.6	0.02	0.10	ND	8.6	1.4	1.4	12	NA	2.4	NA	NA	NA
11/15/11	Swampscott, MA	Stacey04	1100	NA	NA	NA	NA	>6	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA

* sampling conducted in dry weather

E. coli - color key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, Black < 235 col/100ml
Entero - color key: Red ≥ 1000 col/100ml, Orange ≥ 350 Yellow ≥ 61 col/100ml, Black < 61 col/100ml
NH3 - color key: Red ≥ 6 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.0 mg/L
Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.25 mg/L, Black < 0.25 mg/L *** may give false positive at salinity greater than 1 ppt
PPCP color key: Pink = Concentrations greater than background
Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yellow ≥ 0.02 mg/L, Black < 0.02 mg/L

REPORTING LIMITS
E. coli = 4 MPN/100mL
Enterococcus = 10 MPN/100mL
Surfactants Field = 0.1 mg/L
Ammonia Field = 0.1 mg/L

ND – not detected above the associated detection limit
NA – not applicable (analyte not tested for at that site at this time)
(~) – data reported as estimate

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Memorandum - Enforcement Confidential

Date: 24 June 2009

Subj: NPDES Compliance Sampling Inspection
Municipal Separate Storm Sewer System (MS4)
City of Lynn, MA

From: Todd Borci

To: File

On Tuesday, 16 June 2009, EPA inspector Todd Borci conducted an unannounced Compliance Sampling Inspection (CSI) of the City of Lynn, Massachusetts's (the "City") Municipal Separate Storm Sewer System ("MS4") Stacey Brook outfall. EPA personnel collected surface water samples at the Stacey Brook outfall on the Lynn/Swampscott Line. Additional EPA personnel assisting in the inspection were Leah Bowe and Christina Murphy.

The Stacey Brook outfall consists of two large 10-foot by 10-foot box culverts that discharge onto Kings Beach along Nahant Bay at the municipal boundary of the City and the Town of Swampscott, MA.

EPA personnel noted a sharp odor at the outfall opening. While this area has occasional odor problems due to algae along the beach, the odor at the outfall was distinctly different. EPA observed significant flow coming from the southern culvert and moderate flow coming from the northern culvert. Recent tidal deposition of sand was apparent in both culverts, and flow was sufficient in both culverts to scour and suspend sand particles in the flow.

EPA collected a sample set approximately 15 feet downstream of the culvert opening where flow from both culverts was combined and well mixed. EPA collected surface water samples (Location ID: "Stacey") for the following parameters: bacteria (e. coli and enterococcus); ammonia; surfactants; total and free chlorine; potassium; and fluoride. EPA collected an additional grab sample for field processing of surfactants, ammonia, and free and total chlorine. EPA collected concurrent duplicate samples (Location ID: "StaceyD") as well.

Using a YSI conductivity/ temperature/salinity meter, EPA recorded levels of 826 uS/14.2 °C/0.5 ppt, respectively at the "Stacey" sample location. Using Hach brand test strips for ammonia, a Hach field kit for ammonia, and a Chemetrics K-9400 field kit for surfactants, EPA personnel processed surface water samples collected at the location. Sample and sample duplicate results were recorded for each kit. Ammonia test strips indicated elevated levels of ammonia (3.0/2.0 mg/l); ammonia field kits indicated elevated levels of ammonia (1.0/1.0 mg/l); and surfactant field kits indicated elevated readings as well (0.4/0.4 mg/l).

After sample collection, EPA used the YSI conductivity/ temperature/salinity meter to measure separately the flow from each culvert, prior to any mixing having occurred. In the southernmost culvert with the stronger flow, EPA recorded levels of 805 uS/14.1 °C/0.5 ppt, and in the northernmost culvert, EPA recorded levels of 1181 uS/14.6 °C/0.7 ppt.

EPA observed children swimming approximately 300 feet south of the outfall location.

Once received, the analytical data for this sampling effort will be attached to this report.

Weather on the day of inspection was dry and sunny. According to the National Oceanic and Atmospheric Administration, the last measurable precipitation was 0.2 inches on the morning of 14 June 2009 (Logan Airport gauge).

Inspection ended at 1230. EPA Inspector will provide data to MassDEP for enforcement follow-up.

End of Report.

Photos Attached.

Lynn, MA 6/16/09 EPA MS4 Inspection
Photographs

Photo 1: 6/16/09 at 1: M. View facing west of Stacey Brook outfall. Samples “Stacey” and “StaceyD” collected at photo center.

Photo 2: 6/16/09 1: M. View facing south with Stacey Brook in foreground, and children swimming at Kings Beach.

----- Forwarded by George Harding/R1/USEPA/US on 09/26/2014 02:35 PM -----

From: Erin Trainor/R1/USEPA/US
To: George Harding/R1/USEPA/US@EPA
Date: 05/31/2012 02:38 PM
Subject: Fw: Lynn samples

Hi George,

These were the draft results from the Lynn sampling on 5/8. I believe the final results should be available shortly. I already sent along the PPCP results.

Thanks,

Erin
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From: Nathan Raines/R1/USEPA/US
To: Erin Trainor/R1/USEPA/US@EPA
Date: 05/21/2012 09:53 AM
Subject: Re: Lynn samples

Hi Erin,

Here are the draft results for Lynn MS4 samples (5/8/12).....Nathan

Sample	E.coli	Entero
LAW 01	24,890	11,199
LAW 02	16,160	4,884
LAW 03	39	74
Law 04	5,654	5,172
LAW 05	30	20

Erin Trainor---05/16/2012 04:03:03 PM---Hi Nathan, When you have a moment, do you have the draft bacteria results for the Lynn MS4 samples s

From: Erin Trainor/R1/USEPA/US
To: Nathan Raines/R1/USEPA/US@EPA
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Subject: Lynn samples

Hi Nathan,

When you have a moment, do you have the draft bacteria results for the Lynn MS4 samples submitted on 5/8?

Thanks,

Erin

Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

May 14, 2012

Erin Trainor - EIA / OEME
US EPA New England R1

Project Number: 12050016
Project: Municipal Storm Water Sewer System - Lynn, MA
Analysis: HPLC/MS/MS Source Tracking Analysis
Analyst: Peter Philbrook PHilbrook 14 MAY 2012

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIA-LCMS_STA.0.

The SOP is based on an EPA Regional Analytical Method developed at the EPA New England Laboratory.

Date Samples Received by the Laboratory: 05/08/2012

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N Boudreau 5/16/12

Daniel N Boudreau
Chemistry Team Leader

DATA QUALIFIERS

RL	Reporting limit
J	Estimated value
E	Estimated value exceeds the calibration range
L	Estimated value is below the calibration range
B	Analyte is associated with the lab blank or trip blank contamination.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.
ND	Not Detected above Reporting limit
NA	Not Applicable due to high sample dilutions or sample interferences
ME	Matrix Effect - Sample matrix was responsible for either enhanced or suppressed ionization within the electrospray ionization probe

---

NARRATIVE

Aqueous samples (500mL) were extracted using a solid phase extraction (SPE) technique, following EPA Method 1694, in which samples were passed through a cartridge containing a solid sorbent material which pre-concentrates the target compounds onto the sorbent. The target compounds (TCs) were then eluted off the sorbent material using methanol. The resulting eluant is concentrated to dryness and re-constituted to a final volume of 1 mL with 20/80 Methanol/Water.

A 5uL aliquot of the sample extract was injected into a Ultra High Performance Liquid Chromatograph (UPLC), and the TCs were separated chromatographically using a C18 UPLC column running a buffered water/methanol gradient. The ionization mode used was electrospray with the polarity operating in the positive mode. The TCs were detected using a Waters Acquity TQD Tandem Quadrupole Mass Spectrometer. The tandem quadrupole is used to perform multiple reaction monitoring (MRM) where the precursor ion of interest is fragmented to product ion(s).

Quantitation was performed by the internal standard calibration method using isotopically labeled analogues. Sulfamethazine *13*C6 and Primidone d5 were used as a surrogate compounds to monitor extraction efficiency.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Municipal Storm Water Sewer System - Lynn, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LYNN 01	Lab Sample ID:	AB29785
Date of Collection:	5/8/2012	Matrix	Water
Date of Extraction:	05/09/2012	Final Volume:	1 mL
Date of Analysis:	05/09/2012	Extract Dilution:	1&5
Volume Extracted:	500 mL	pH:	7.26

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**12**	2.00	
103-90-2	Acetaminophen	**260**	10.00	
486-56-6	Cotinine	**110**	2.00	
611-59-6	1,7-Dimethylxanthine	**100**	2.00	
58-08-2	Caffeine	**2200**	20.00	
298-46-4	Carbamazepine	**1.1**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	89	23 - 181
Sulfamethazine 13C6	103	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Municipal Storm Water Sewer System - Lynn, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LYNN 02	Lab Sample ID:	AB29786
Date of Collection:	5/8/2012	Matrix	Water
Date of Extraction:	05/09/2012	Final Volume:	1 mL
Date of Analysis:	05/09/2012	Extract Dilution:	1&5
Volume Extracted:	500 mL	pH:	7.12

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**14**	2.00	
103-90-2	Acetaminophen	**230**	10.00	
486-56-6	Cotinine	**140**	2.00	
611-59-6	1,7-Dimethylxanthine	**95**	2.00	
58-08-2	Caffeine	**2600**	20.00	
298-46-4	Carbamazepine	**1.0**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	96	23 - 181
Sulfamethazine 13C6	61	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Municipal Storm Water Sewer System - Lynn, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LYNN 03	Lab Sample ID:	AB29787
Date of Collection:	5/8/2012	Matrix	Water
Date of Extraction:	05/09/2012	Final Volume:	1 mL
Date of Analysis:	05/09/2012	Extract Dilution:	1
Volume Extracted:	400 mL	pH:	7.84

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	**16**	2.00	
486-56-6	Cotinine	**15**	0.40	
611-59-6	1,7-Dimethylxanthine	**10**	2.00	
58-08-2	Caffeine	**310**	4.00	
298-46-4	Carbamazepine	**0.83**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	84	23 - 181
Sulfamethazine 13C6	41	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Municipal Storm Water Sewer System - Lynn, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LYNN 04	Lab Sample ID:	AB29788
Date of Collection:	5/8/2012	Matrix	Water
Date of Extraction:	05/09/2012	Final Volume:	1 mL
Date of Analysis:	05/09/2012	Extract Dilution:	1&5
Volume Extracted:	500 mL	pH:	7.06

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**3.0**	2.00	
103-90-2	Acetaminophen	**190**	10.00	
486-56-6	Cotinine	**65**	2.00	
611-59-6	1,7-Dimethylxanthine	**48**	2.00	
58-08-2	Caffeine	**1100**	20.00	
298-46-4	Carbamazepine	**1.0**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	70	23 - 181
Sulfamethazine 13C6	84	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Municipal Storm Water Sewer System - Lynn, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	LYNN 05	Lab Sample ID:	AB29789
Date of Collection:	5/8/2012	Matrix	Water
Date of Extraction:	05/09/2012	Final Volume:	1 mL
Date of Analysis:	05/09/2012	Extract Dilution:	1
Volume Extracted:	475 mL	pH:	7.85

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**1.7**	2.00	L
103-90-2	Acetaminophen	**10**	2.00	
486-56-6	Cotinine	**8.8**	0.40	
611-59-6	1,7-Dimethylxanthine	**9.8**	2.00	
58-08-2	Caffeine	**140**	4.00	
298-46-4	Carbamazepine	**0.84**	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	85	23 - 181
Sulfamethazine 13C6	49	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Municipal Storm Water Sewer System - Lynn, MA

Laboratory Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix	Water
Date of Extraction:	05/09/2012	Final Volume:	1 mL
Date of Analysis:	05/09/2012	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.22

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	ND	2.00	
486-56-6	Cotinine	ND	0.40	
611-59-6	1,7-Dimethylxanthine	ND	2.00	
58-08-2	Caffeine	ND	4.00	
298-46-4	Carbamazepine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Sulfamethazine 13C3	97	
Primidone d5	90	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MATRIX SPIKE RECOVERY

Municipal Storm Water Sewer System - Lynn, MA

Sample ID: AB29787

PARAMETER	SPIKE ADDED ng/L	SAMPLE CONCENTRATION ng/L	MS CONCENTRATION ng/L	MS % REC	QC LIMITS (% REC)
1,7-Dimethylxanthine	150	10	130	80.0	13 - 174
Acetaminophen	150	16	140	82.7	23 - 138
Atenolol	150	ND	140	93.3	49 - 137
Caffeine	300	310	620	103	31 - 156
Carbamazepine	30	0.83	28	90.6	47 - 143
Cotinine	30	15	41	86.7	46 - 121

LABORATORY DUPLICATE RESULTS

Municipal Storm Water Sewer System - Lynn, MA

Sample ID: AB29789

PARAMETER	SAMPLE RESULT ng/L	SAMPLE DUPLICATE RESULT ng/L	PRECISION RPD %	QC LIMITS
1,7-Dimethylxanthine	9.8	11	11.5	50
Acetaminophen	10	10	0.00	50
Atenolol	1.7	1.7	0.00	50
Caffeine	140	140	0.00	50
Carbamazepine	0.84	0.80	4.88	50
Cotinine	8.8	12	30.8	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) RECOVERY

Municipal Storm Water Sewer System - Lynn, MA

COMPOUND	SPIKE ADDED ng/L	LFB CONCENTRATION ng/L	LFB RECOVERY %	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	114	95.0	64 - 135
Acetaminophen	120	104	86.7	48 - 122
Atenolol	120	116	96.7	52 - 128
Caffeine	240	243	101	68 - 126
Carbamazepine	24	23	95.8	65 - 121
Cotinine	24	19	79.2	60 - 120

Comments:

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.: 12050016

PROJECT NAME: LYNN, MA

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	STR						REMARKS
LYNN 01	5/8/12	9:00		X		1	X						
LYNN 02	↓	9:30		↓		1	X						
LYNN 03	↓	10:45		↓		1	X						
LYNN 04	↓	10:50		↓		1	X						
LYNN 05	↓	11:40		↓		1	X						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	5/8/12 1328				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
			5/8/12 13:28		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

5°C

1- 18945

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Erin

Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

November 17, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110043
Project: Stacey Brook, MA
Analysis: HPLC/MS/MS Source Tracking Analysis
Analyst: Peter Philbrook
PHILBROOK 11-17-2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIA-LCMS_STA.0.

The SOP is based on an EPA Regional Analytical Method developed at the EPA New England Laboratory.

Date Samples Received by the Laboratory: 11/15/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,
Daniel N Boudreau 11/22/11
Daniel N Boudreau
Chemistry Team Leader

DATA QUALIFIERS

RL	Reporting limit
J	Estimated value
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ME	Matrix Effect - Sample matrix was responsible for either enhanced or suppressed ionization within the electrospray ionization probe

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NARRATIVE

Aqueous samples (500mL) were extracted using a solid phase extraction (SPE) technique, following EPA Method 1694, in which samples were passed through a cartridge containing a solid sorbent material which pre-concentrates the target compounds onto the sorbent. The target compounds (TCs) were then eluted off the sorbent material using methanol. The resulting eluant is concentrated to dryness and re-constituted to a final volume of 1 mL with 20/80 Methanol/Water.

A 5uL aliquot of the sample extract was injected into a Ultra High Performance Liquid Chromatograph (UPLC), and the TCs were separated chromatographically using a C18 UPLC column running a buffered water/methanol gradient. The ionization mode used was electrospray with the polarity operating in the positive mode. The TCs were detected using a Waters Acquity TQD Tandem Quadrupole Mass Spectrometer. The tandem quadrupole is used to perform multiple reaction monitoring (MRM) where the precursor ion of interest is fragmented to product ion(s).

Quantitation was performed by the internal standard calibration method using isotopically labeled analogues. Sulfamethazine *13*C6 and Primidone d5 were used as a surrogate compounds to monitor extraction efficiency.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey S 08:35	Lab Sample ID:	AB24590
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.49

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**4.8**	2.00	
103-90-2	Acetaminophen	**100**	2.00	
486-56-6	Cotinine	**5.8**	0.40	
611-59-6	1,7-Dimethylxanthine	**20**	2.00	
58-08-2	Caffeine	**110**	4.00	
298-46-4	Carbamazepine	**3.0**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	52	23 - 181
Sulfamethazine 13C6	77	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey N 08:40	Lab Sample ID:	AB24591
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	7.19

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**61**	2.00	
103-90-2	Acetaminophen	**1200**	20.00	
486-56-6	Cotinine	**20**	0.40	
611-59-6	1,7-Dimethylxanthine	**350**	20.00	
58-08-2	Caffeine	**230**	4.00	
298-46-4	Carbamazepine	**9.5**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	62	23 - 181
Sulfamethazine 13C6	97	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey S 09:07	Lab Sample ID:	AB24592
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	7.49

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	**1100**	20.00	
486-56-6	Cotinine	**5.8**	0.40	
611-59-6	1,7-Dimethylxanthine	**46**	2.00	
58-08-2	Caffeine	**120**	4.00	
298-46-4	Carbamazepine	**3.9**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	63	23 - 181
Sulfamethazine 13C6	91	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey N 09:11	Lab Sample ID:	AB24593
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	7.27

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**61**	2.00	
103-90-2	Acetaminophen	**1300**	20.00	
486-56-6	Cotinine	**23**	0.40	
611-59-6	1,7-Dimethylxanthine	**210**	20.00	
58-08-2	Caffeine	**250**	40.00	
298-46-4	Carbamazepine	**7.7**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	51	23 - 181
Sulfamethazine 13C6	61	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey S 09:35	Lab Sample ID:	AB24594
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	6.97

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	**110**	2.00	
486-56-6	Cotinine	**4.8**	0.40	
611-59-6	1,7-Dimethylxanthine	**39**	2.00	
58-08-2	Caffeine	**1300**	40.00	
298-46-4	Carbamazepine	**9.6**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	47	23 - 181
Sulfamethazine 13C6	66	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey N 09:40	Lab Sample ID:	AB24595
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	0.475 mL	pH:	6.79

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**51**	2.00	
103-90-2	Acetaminophen	**1000**	20.00	
486-56-6	Cotinine	**20**	0.40	
611-59-6	1,7-Dimethylxanthine	**220**	2.00	
58-08-2	Caffeine	**320**	40.00	
298-46-4	Carbamazepine	**8.0**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	45	23 - 181
Sulfamethazine 13C6	59	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey 03	Lab Sample ID:	AB24596
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1
Volume Extracted:	480 mL	pH:	7.29

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	**8.6**	2.00	
486-56-6	Cotinine	**1.4**	0.40	
611-59-6	1,7-Dimethylxanthine	**1.4**	2.00	L
58-08-2	Caffeine	**12**	4.00	
298-46-4	Carbamazepine	**2.4**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	51	23 - 181
Sulfamethazine 13C6	83	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

Laboratory Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.29

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	ND	2.00	
486-56-6	Cotinine	ND	0.40	
611-59-6	1,7-Dimethylxanthine	ND	2.00	
58-08-2	Caffeine	ND	4.00	
298-46-4	Carbamazepine	ND	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Sulfamethazine 13C3	90	
Primidone d5	89	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MATRIX SPIKE RECOVERY

Stacey Brook, MA

Sample ID: AB24595

PARAMETER	SPIKE ADDED ng/L	SAMPLE CONCENTRATION ng/L	MS CONCENTRATION ng/L	MS % REC	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	220	308	73.3	7 - 120
Acetaminophen	120	1000	1100	83.3	1 - 120
Atenolol	120	51	123	60.0	40 - 146
Caffeine	240	320	460	58.3	12 - 138
Carbamazepine	24	8.0	21.9	57.9	27 - 144
Cotinine	24	20	37.5	72.9	48 - 131
Sulfamethazine	24	ND	9.1	37.9	30 - 130

LABORATORY DUPLICATE RESULTS

Stacey Brook, MA

Sample ID: AB24596

PARAMETER	SAMPLE RESULT ng/L	SAMPLE DUPLICATE RESULT ng/L	PRECISION RPD %	QC LIMITS
1,7-Dimethylxanthine	1.4	1.6	13.3	50
Acetaminophen	8.6	6.7	24.8	50
Atenolol	ND	ND	ND	50
Caffeine	12	9.1	27.5	50
Carbamazepine	2.4	2.0	18.2	50
Cotinine	1.4	1.0	33.3	50
Sulfamethazine	ND	ND	ND	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) RECOVERY

Stacey Brook, MA

COMPOUND	SPIKE ADDED ng/L	LFB CONCENTRATION ng/L	LFB RECOVERY %	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	100	83.3	14 - 155
Acetaminophen	120	84.1	70.1	43 - 129
Atenolol	120	5.29	4.41	45 - 136
Caffeine	240	213	88.8	57 - 132
Carbamazepine	24	24.8	103	39 - 136
Cotinine	24	21.6	90.0	60 - 127
Sulfamethazine	24	19.6	81.7	30 - 130

Comments:

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.: 11110043

PROJECT NAME: Stacey Brook, MA

SAMPLERS: (Signature) Todd Bonin

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	# STA	edi/enkro					REMARKS
	11/15/11	835		X	Stacey S	2	X	X					
		840			Stacey N								
		907			Stacey S								
		911			Stacey N								
		935			Stacey S								w/ascorbic acid preserv.
		940			Stacey N								w/ascorbic acid preserv.
	11/15/11	1040		X	Stacey 03	2	X	X					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Todd Bonin	11/15/11				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
			11/15/11 12:30		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

1-17371

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110043
Project: Stacey Brook, MA
Analysis: E. Coli Defined Substrate
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/15/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A107 / 9223.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
V = Insufficient sample volume
TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

E. Coli Defined Substrate

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
Stacey 03	AB24596	11/15/11	10:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**420**	4	
Stacey N	AB24591	11/15/11	8:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**14210**	100	
Stacey N	AB24593	11/15/11	9:11 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**13130**	100	
Stacey N	AB24595	11/15/11	9:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**22240**	100	
Stacey S	AB24594	11/15/11	9:35 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**1379**	4	
Stacey S (	AB24590	11/15/11	8:35 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**806**	4	
Stacey S (	AB24592	11/15/11	9:07 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**445**	4	

Number of Samples: 7

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110043
Project: Stacey Brook, MA
Analysis: Enterococcus in Water
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/15/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A110.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

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- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

Enterococcus in Water

Matrix: Water

Sample Number	Lab ID	Date of Collection:	Date of Analysis	Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
Stacey 03	AB24596	11/15/11 10:40 am	11/15/11 1:10 pm	Enterococcus in Water	**30**	10	
Stacey N	AB24591	11/15/11 8:40 am	11/15/11 1:10 pm	Enterococcus in Water	**749**	10	
Stacey N	AB24593	11/15/11 9:11 am	11/15/11 1:10 pm	Enterococcus in Water	**857**	10	
Stacey N	AB24595	11/15/11 9:40 am	11/15/11 1:10 pm	Enterococcus in Water	**504**	10	
Stacey S	AB24594	11/15/11 9:35 am	11/15/11 1:10 pm	Enterococcus in Water	**278**	10	
Stacey S (	AB24590	11/15/11 8:35 am	11/15/11 1:10 pm	Enterococcus in Water	**148**	10	
Stacey S (	AB24592	11/15/11 9:07 am	11/15/11 1:10 pm	Enterococcus in Water	**309**	10	

Number of Samples: 7

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110047
Project: Source Tracking - North Providence, RI
Analysis: Fecal Coliform by Membrane Filtration
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/16/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A102 / 9222D.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
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At = Atypical overgrowth
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TNTC = Too numerous to count
MB = Media blank
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- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Source Tracking - North Providence, RI

Fecal Coliform by Membrane Filtration

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration CFU/100 mL	RL CFU/100 mL	Qualifier
005-A	AB24619	11/16/11	1:00 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**16**	4	
005-B	AB24620	11/16/11	1:03 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**524**	4	
005-C	AB24621	11/16/11	1:05 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1700**	100	
014A	AB24612	11/16/11	10:15 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**32**	4	
014B	AB24613	11/16/11	10:20 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**96**	4	
Brook Farm	AB24615	11/16/11	11:50 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1000**	100	
David St	AB24609	11/16/11	8:30 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**20**	4	H
Gerard	AB24617	11/16/11	12:30 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**8**	4	
Metcalf	AB24610	11/16/11	9:20 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1500**	100	
Milton	AB24611	11/16/11	9:50 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**124**	4	
Mineral Spring	AB24616	11/16/11	12:25 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**156**	4	
Obed	AB24618	11/16/11	12:40 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**8**	4	
Smith 141	AB24614	11/16/11	11:30 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**12100**	100	

Number of Samples: 13

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110047
Project: Source Tracking - North Providence, RI
Analysis: Enterococcus in Water
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/16/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A110.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
V = Insufficient sample volume
TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Source Tracking - North Providence, RI

Enterococcus in Water

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
005-A	AB24619	11/16/11	1:00 pm	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
005-B	AB24620	11/16/11	1:03 pm	11/16/11	3:45 pm	Enterococcus in Water	**10**	10	
005-C	AB24621	11/16/11	1:05 pm	11/16/11	3:45 pm	Enterococcus in Water	ND	10	
014A	AB24612	11/16/11	10:15 am	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
014B	AB24613	11/16/11	10:20 am	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
Brook Farm	AB24615	11/16/11	11:50 am	11/16/11	3:45 pm	Enterococcus in Water	**906**	10	
David St	AB24609	11/16/11	8:30 am	11/16/11	3:45 pm	Enterococcus in Water	**31**	10	H
Gerard	AB24617	11/16/11	12:30 pm	11/16/11	3:45 pm	Enterococcus in Water	ND	10	
Metcalf	AB24610	11/16/11	9:20 am	11/16/11	3:45 pm	Enterococcus in Water	**2909**	10	H
Milton	AB24611	11/16/11	9:50 am	11/16/11	3:45 pm	Enterococcus in Water	**85**	10	
Mineral Spring	AB24616	11/16/11	12:25 pm	11/16/11	3:45 pm	Enterococcus in Water	**30**	10	
Obed	AB24618	11/16/11	12:40 pm	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
Smith 141	AB24614	11/16/11	11:30 am	11/16/11	3:45 pm	Enterococcus in Water	**211**	10	

Number of Samples: 13

Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

November 17, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110043
Project: Stacey Brook, MA
Analysis: HPLC/MS/MS Source Tracking Analysis
Analyst: Peter Philbrook
PHILBROOK 11-17-2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIA-LCMS_STA.0.

The SOP is based on an EPA Regional Analytical Method developed at the EPA New England Laboratory.

Date Samples Received by the Laboratory: 11/15/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,
Daniel N Boudreau 11/22/11
Daniel N Boudreau
Chemistry Team Leader

DATA QUALIFIERS

RL	Reporting limit
J	Estimated value
E	Estimated value exceeds the calibration range
L	Estimated value is below the calibration range
B	Analyte is associated with the lab blank or trip blank contamination.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.
ND	Not Detected above Reporting limit
NA	Not Applicable due to high sample dilutions or sample interferences
ME	Matrix Effect - Sample matrix was responsible for either enhanced or suppressed ionization within the electrospray ionization probe

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NARRATIVE

Aqueous samples (500mL) were extracted using a solid phase extraction (SPE) technique, following EPA Method 1694, in which samples were passed through a cartridge containing a solid sorbent material which pre-concentrates the target compounds onto the sorbent. The target compounds (TCs) were then eluted off the sorbent material using methanol. The resulting eluant is concentrated to dryness and re-constituted to a final volume of 1 mL with 20/80 Methanol/Water.

A 5uL aliquot of the sample extract was injected into a Ultra High Performance Liquid Chromatograph (UPLC), and the TCs were separated chromatographically using a C18 UPLC column running a buffered water/methanol gradient. The ionization mode used was electrospray with the polarity operating in the positive mode. The TCs were detected using a Waters Acquity TQD Tandem Quadrupole Mass Spectrometer. The tandem quadrupole is used to perform multiple reaction monitoring (MRM) where the precursor ion of interest is fragmented to product ion(s).

Quantitation was performed by the internal standard calibration method using isotopically labeled analogues. Sulfamethazine *13*C6 and Primidone d5 were used as a surrogate compounds to monitor extraction efficiency.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey S 08:35	Lab Sample ID:	AB24590
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.49

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**4.8**	2.00	
103-90-2	Acetaminophen	**100**	2.00	
486-56-6	Cotinine	**5.8**	0.40	
611-59-6	1,7-Dimethylxanthine	**20**	2.00	
58-08-2	Caffeine	**110**	4.00	
298-46-4	Carbamazepine	**3.0**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	52	23 - 181
Sulfamethazine 13C6	77	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey N 08:40	Lab Sample ID:	AB24591
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	7.19

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**61**	2.00	
103-90-2	Acetaminophen	**1200**	20.00	
486-56-6	Cotinine	**20**	0.40	
611-59-6	1,7-Dimethylxanthine	**350**	20.00	
58-08-2	Caffeine	**230**	4.00	
298-46-4	Carbamazepine	**9.5**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	62	23 - 181
Sulfamethazine 13C6	97	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey S 09:07	Lab Sample ID:	AB24592
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	7.49

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	**1100**	20.00	
486-56-6	Cotinine	**5.8**	0.40	
611-59-6	1,7-Dimethylxanthine	**46**	2.00	
58-08-2	Caffeine	**120**	4.00	
298-46-4	Carbamazepine	**3.9**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	63	23 - 181
Sulfamethazine 13C6	91	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey N 09:11	Lab Sample ID:	AB24593
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	7.27

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**61**	2.00	
103-90-2	Acetaminophen	**1300**	20.00	
486-56-6	Cotinine	**23**	0.40	
611-59-6	1,7-Dimethylxanthine	**210**	20.00	
58-08-2	Caffeine	**250**	40.00	
298-46-4	Carbamazepine	**7.7**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	51	23 - 181
Sulfamethazine 13C6	61	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey S 09:35	Lab Sample ID:	AB24594
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	500 mL	pH:	6.97

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	**110**	2.00	
486-56-6	Cotinine	**4.8**	0.40	
611-59-6	1,7-Dimethylxanthine	**39**	2.00	
58-08-2	Caffeine	**1300**	40.00	
298-46-4	Carbamazepine	**9.6**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	47	23 - 181
Sulfamethazine 13C6	66	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey N 09:40	Lab Sample ID:	AB24595
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1 & 10
Volume Extracted:	0.475 mL	pH:	6.79

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	**51**	2.00	
103-90-2	Acetaminophen	**1000**	20.00	
486-56-6	Cotinine	**20**	0.40	
611-59-6	1,7-Dimethylxanthine	**220**	2.00	
58-08-2	Caffeine	**320**	40.00	
298-46-4	Carbamazepine	**8.0**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	45	23 - 181
Sulfamethazine 13C6	59	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

HPLC/MS/MS Source Tracking Analysis

Client Sample ID:	Stacey 03	Lab Sample ID:	AB24596
Date of Collection:	11/15/2011	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1
Volume Extracted:	480 mL	pH:	7.29

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	**8.6**	2.00	
486-56-6	Cotinine	**1.4**	0.40	
611-59-6	1,7-Dimethylxanthine	**1.4**	2.00	L
58-08-2	Caffeine	**12**	4.00	
298-46-4	Carbamazepine	**2.4**	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Primidone d5	51	23 - 181
Sulfamethazine 13C6	83	15 - 132

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

Laboratory Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix	Water
Date of Extraction:	11/15/2011	Final Volume:	1 mL
Date of Analysis:	11/16/2011	Extract Dilution:	1
Volume Extracted:	500 mL	pH:	7.29

CAS Number	Compound	Concentration ng/L	RL ng/L	Qualifier
29122-68-7	Atenolol	ND	2.00	
103-90-2	Acetaminophen	ND	2.00	
486-56-6	Cotinine	ND	0.40	
611-59-6	1,7-Dimethylxanthine	ND	2.00	
58-08-2	Caffeine	ND	4.00	
298-46-4	Carbamazepine	ND	0.40	
57-68-1	Sulfamethazine	ND	0.40	

Surrogate Compounds	Recoveries (%)	QC Ranges
Sulfamethazine 13C3	90	
Primidone d5	89	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

MATRIX SPIKE RECOVERY

Stacey Brook, MA

Sample ID: AB24595

PARAMETER	SPIKE ADDED ng/L	SAMPLE CONCENTRATION ng/L	MS CONCENTRATION ng/L	MS % REC	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	220	308	73.3	7 - 120
Acetaminophen	120	1000	1100	83.3	1 - 120
Atenolol	120	51	123	60.0	40 - 146
Caffeine	240	320	460	58.3	12 - 138
Carbamazepine	24	8.0	21.9	57.9	27 - 144
Cotinine	24	20	37.5	72.9	48 - 131
Sulfamethazine	24	ND	9.1	37.9	30 - 130

LABORATORY DUPLICATE RESULTS

Stacey Brook, MA

Sample ID: AB24596

PARAMETER	SAMPLE RESULT ng/L	SAMPLE DUPLICATE RESULT ng/L	PRECISION RPD %	QC LIMITS
1,7-Dimethylxanthine	1.4	1.6	13.3	50
Acetaminophen	8.6	6.7	24.8	50
Atenolol	ND	ND	ND	50
Caffeine	12	9.1	27.5	50
Carbamazepine	2.4	2.0	18.2	50
Cotinine	1.4	1.0	33.3	50
Sulfamethazine	ND	ND	ND	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) RECOVERY

Stacey Brook, MA

COMPOUND	SPIKE ADDED ng/L	LFB CONCENTRATION ng/L	LFB RECOVERY %	QC LIMITS (% REC)
1,7-Dimethylxanthine	120	100	83.3	14 - 155
Acetaminophen	120	84.1	70.1	43 - 129
Atenolol	120	5.29	4.41	45 - 136
Caffeine	240	213	88.8	57 - 132
Carbamazepine	24	24.8	103	39 - 136
Cotinine	24	21.6	90.0	60 - 127
Sulfamethazine	24	19.6	81.7	30 - 130

Comments:

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.: 11110043

PROJECT NAME: Stacey Brook, MA

SAMPLERS: (Signature) Todd Bonin

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	# STA	edi/enkro					REMARKS
	11/15/11	835		X	Stacey S	2	X	X					
		840			Stacey N								
		907			Stacey S								
		911			Stacey N								
		935			Stacey S								w/ascorbic acid preserv.
		940			Stacey N								w/ascorbic acid preserv.
	11/15/11	1040		X	Stacey 03	2	X	X					

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Todd Bonin	11/15/11				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
			11/15/11 12:30		

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

1-17371

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110043
Project: Stacey Brook, MA
Analysis: E. Coli Defined Substrate
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/15/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A107 / 9223.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
V = Insufficient sample volume
TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
- - - = Negative control
SP = Spiked Sample
L = Estimated, result below reporting limit (RL)
ND = Not Detected, result less than RL
D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

E. Coli Defined Substrate

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
Stacey 03	AB24596	11/15/11	10:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**420**	4	
Stacey N	AB24591	11/15/11	8:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**14210**	100	
Stacey N	AB24593	11/15/11	9:11 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**13130**	100	
Stacey N	AB24595	11/15/11	9:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**22240**	100	
Stacey S	AB24594	11/15/11	9:35 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**1379**	4	
Stacey S (	AB24590	11/15/11	8:35 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**806**	4	
Stacey S (	AB24592	11/15/11	9:07 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**445**	4	

Number of Samples: 7

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
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Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110043
Project: Stacey Brook, MA
Analysis: Enterococcus in Water
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/15/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A110.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

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Sincerely,

David F. McDonald
Biology Laboratory Manager

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US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

Enterococcus in Water

Matrix: Water

Sample Number	Lab ID	Date of Collection:	Date of Analysis	Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
Stacey 03	AB24596	11/15/11 10:40 am	11/15/11 1:10 pm	Enterococcus in Water	**30**	10	
Stacey N	AB24591	11/15/11 8:40 am	11/15/11 1:10 pm	Enterococcus in Water	**749**	10	
Stacey N	AB24593	11/15/11 9:11 am	11/15/11 1:10 pm	Enterococcus in Water	**857**	10	
Stacey N	AB24595	11/15/11 9:40 am	11/15/11 1:10 pm	Enterococcus in Water	**504**	10	
Stacey S	AB24594	11/15/11 9:35 am	11/15/11 1:10 pm	Enterococcus in Water	**278**	10	
Stacey S (	AB24590	11/15/11 8:35 am	11/15/11 1:10 pm	Enterococcus in Water	**148**	10	
Stacey S (	AB24592	11/15/11 9:07 am	11/15/11 1:10 pm	Enterococcus in Water	**309**	10	

Number of Samples: 7

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
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Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110047
Project: Source Tracking - North Providence, RI
Analysis: Fecal Coliform by Membrane Filtration
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/16/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A102 / 9222D.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

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Sincerely,

David F. McDonald
Biology Laboratory Manager

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US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Source Tracking - North Providence, RI

Fecal Coliform by Membrane Filtration

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration CFU/100 mL	RL CFU/100 mL	Qualifier
005-A	AB24619	11/16/11	1:00 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**16**	4	
005-B	AB24620	11/16/11	1:03 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**524**	4	
005-C	AB24621	11/16/11	1:05 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1700**	100	
014A	AB24612	11/16/11	10:15 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**32**	4	
014B	AB24613	11/16/11	10:20 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**96**	4	
Brook Farm	AB24615	11/16/11	11:50 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1000**	100	
David St	AB24609	11/16/11	8:30 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**20**	4	H
Gerard	AB24617	11/16/11	12:30 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**8**	4	
Metcalf	AB24610	11/16/11	9:20 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1500**	100	
Milton	AB24611	11/16/11	9:50 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**124**	4	
Mineral Spring	AB24616	11/16/11	12:25 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**156**	4	
Obed	AB24618	11/16/11	12:40 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**8**	4	
Smith 141	AB24614	11/16/11	11:30 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**12100**	100	

Number of Samples: 13

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
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Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110047
Project: Source Tracking - North Providence, RI
Analysis: Enterococcus in Water
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/16/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A110.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
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D = Lab Duplicate
P = Plate counts outside preferred range

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Source Tracking - North Providence, RI

Enterococcus in Water

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
005-A	AB24619	11/16/11	1:00 pm	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
005-B	AB24620	11/16/11	1:03 pm	11/16/11	3:45 pm	Enterococcus in Water	**10**	10	
005-C	AB24621	11/16/11	1:05 pm	11/16/11	3:45 pm	Enterococcus in Water	ND	10	
014A	AB24612	11/16/11	10:15 am	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
014B	AB24613	11/16/11	10:20 am	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
Brook Farm	AB24615	11/16/11	11:50 am	11/16/11	3:45 pm	Enterococcus in Water	**906**	10	
David St	AB24609	11/16/11	8:30 am	11/16/11	3:45 pm	Enterococcus in Water	**31**	10	H
Gerard	AB24617	11/16/11	12:30 pm	11/16/11	3:45 pm	Enterococcus in Water	ND	10	
Metcalf	AB24610	11/16/11	9:20 am	11/16/11	3:45 pm	Enterococcus in Water	**2909**	10	H
Milton	AB24611	11/16/11	9:50 am	11/16/11	3:45 pm	Enterococcus in Water	**85**	10	
Mineral Spring	AB24616	11/16/11	12:25 pm	11/16/11	3:45 pm	Enterococcus in Water	**30**	10	
Obed	AB24618	11/16/11	12:40 pm	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
Smith 141	AB24614	11/16/11	11:30 am	11/16/11	3:45 pm	Enterococcus in Water	**211**	10	

Number of Samples: 13

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
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Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110043
Project: Stacey Brook, MA
Analysis: E. Coli Defined Substrate
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/15/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

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Sincerely,

David F. McDonald
Biology Laboratory Manager

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TNTC = Too numerous to count
MB = Media blank
+++ = Positive control
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L = Estimated, result below reporting limit (RL)
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US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

E. Coli Defined Substrate

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration MPN/100 mL	RL MPN/100 mL	Qualifier
Stacey 03	AB24596	11/15/11	10:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**420**	4	
Stacey N	AB24591	11/15/11	8:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**14210**	100	
Stacey N	AB24593	11/15/11	9:11 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**13130**	100	
Stacey N	AB24595	11/15/11	9:40 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**22240**	100	
Stacey S	AB24594	11/15/11	9:35 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**1379**	4	
Stacey S (	AB24590	11/15/11	8:35 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**806**	4	
Stacey S (	AB24592	11/15/11	9:07 am	11/15/11	1:10 pm	E. Coli Defined Substrate	**445**	4	

Number of Samples: 7

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110043
Project: Stacey Brook, MA
Analysis: Enterococcus in Water
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/15/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A110.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8609.

Sincerely,

David F. McDonald
Biology Laboratory Manager

Water Microbiology Laboratory
Data Qualifier Codes

J = Estimate
H = Exceeds holding time
I = Exceeds incubation time
At = Atypical overgrowth
S = Lost sample
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US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Stacey Brook, MA

Enterococcus in Water

Matrix: Water

Sample Number	Lab ID	Date of Collection:	Date of Analysis	Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
Stacey 03	AB24596	11/15/11 10:40 am	11/15/11 1:10 pm	Enterococcus in Water	**30**	10	
Stacey N	AB24591	11/15/11 8:40 am	11/15/11 1:10 pm	Enterococcus in Water	**749**	10	
Stacey N	AB24593	11/15/11 9:11 am	11/15/11 1:10 pm	Enterococcus in Water	**857**	10	
Stacey N	AB24595	11/15/11 9:40 am	11/15/11 1:10 pm	Enterococcus in Water	**504**	10	
Stacey S	AB24594	11/15/11 9:35 am	11/15/11 1:10 pm	Enterococcus in Water	**278**	10	
Stacey S (	AB24590	11/15/11 8:35 am	11/15/11 1:10 pm	Enterococcus in Water	**148**	10	
Stacey S (	AB24592	11/15/11 9:07 am	11/15/11 1:10 pm	Enterococcus in Water	**309**	10	

Number of Samples: 7

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
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Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110047
Project: Source Tracking - North Providence, RI
Analysis: Fecal Coliform by Membrane Filtration
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/16/2011

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I method, A102 / 9222D.

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US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Source Tracking - North Providence, RI

Fecal Coliform by Membrane Filtration

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration CFU/100 mL	RL CFU/100 mL	Qualifier
005-A	AB24619	11/16/11	1:00 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**16**	4	
005-B	AB24620	11/16/11	1:03 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**524**	4	
005-C	AB24621	11/16/11	1:05 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1700**	100	
014A	AB24612	11/16/11	10:15 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**32**	4	
014B	AB24613	11/16/11	10:20 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**96**	4	
Brook Farm	AB24615	11/16/11	11:50 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1000**	100	
David St	AB24609	11/16/11	8:30 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**20**	4	H
Gerard	AB24617	11/16/11	12:30 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**8**	4	
Metcalf	AB24610	11/16/11	9:20 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**1500**	100	
Milton	AB24611	11/16/11	9:50 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**124**	4	
Mineral Spring	AB24616	11/16/11	12:25 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**156**	4	
Obed	AB24618	11/16/11	12:40 pm	11/16/11	3:10 pm	Fecal Coliform by Membrane	**8**	4	
Smith 141	AB24614	11/16/11	11:30 am	11/16/11	3:10 pm	Fecal Coliform by Membrane	**12100**	100	

Number of Samples: 13

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Water Microbiology Laboratory Report

December 07, 2011

Todd Borci - Mail Code OES04-4
US EPA New England R1

Project Number: 11110047
Project: Source Tracking - North Providence, RI
Analysis: Enterococcus in Water
Analyst: Nathan Raines

Date Samples Received by the Laboratory: 11/16/2011

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US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Source Tracking - North Providence, RI

Enterococcus in Water

Matrix: Water

Sample Number	Lab ID	Date of Collection:		Date of Analysis		Compound	Concentration MPN/100mL	RL MPN/100mL	Qualifier
005-A	AB24619	11/16/11	1:00 pm	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
005-B	AB24620	11/16/11	1:03 pm	11/16/11	3:45 pm	Enterococcus in Water	**10**	10	
005-C	AB24621	11/16/11	1:05 pm	11/16/11	3:45 pm	Enterococcus in Water	ND	10	
014A	AB24612	11/16/11	10:15 am	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
014B	AB24613	11/16/11	10:20 am	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
Brook Farm	AB24615	11/16/11	11:50 am	11/16/11	3:45 pm	Enterococcus in Water	**906**	10	
David St	AB24609	11/16/11	8:30 am	11/16/11	3:45 pm	Enterococcus in Water	**31**	10	H
Gerard	AB24617	11/16/11	12:30 pm	11/16/11	3:45 pm	Enterococcus in Water	ND	10	
Metcalf	AB24610	11/16/11	9:20 am	11/16/11	3:45 pm	Enterococcus in Water	**2909**	10	H
Milton	AB24611	11/16/11	9:50 am	11/16/11	3:45 pm	Enterococcus in Water	**85**	10	
Mineral Spring	AB24616	11/16/11	12:25 pm	11/16/11	3:45 pm	Enterococcus in Water	**30**	10	
Obed	AB24618	11/16/11	12:40 pm	11/16/11	3:45 pm	Enterococcus in Water	**20**	10	
Smith 141	AB24614	11/16/11	11:30 am	11/16/11	3:45 pm	Enterococcus in Water	**211**	10	

Number of Samples: 13

EPA New England Stormwater Outfall Inspection & Sampling Summary - Lynn and Swampscott, MA 11/15/11

Location																YSI Meter		
						Surfactants	Chlorine	NH3 (mg/l)	PPCP ng/L							Salinity	Temp	Conductivity
Date	Town	Site Name	Time	E.coli (MPN/100ml)	Entero (MPN/100ml)			Test St.	Atenolol	Acetaminophen	Cotinine	1,7-Dimethylxanthine	Caffeine	Sulfamethazine	Carbamazepine	ppt	C	uS
11/15/11	Lynn, MA	StaceyS	835	806	148	0.3	0.01	0.00	4.8	100	5.8	20	110	ND	3	0.4	12.8	782
11/15/11	Lynn, MA	StaceyS	907	445	309	0.2	0	0.00	ND	1100	5.8	46	120	ND	3.9	0.4	12.8	787
11/15/11	Lynn, MA	StaceyS	935	1,379	278	0.2	0	0.00	ND	110	4.8	39	1300	ND	9.6	0.4	12.8	731
11/15/11	Swampscott, MA	StaceyN	840	14,210	749	0.2	0.32	0.10	61	1200	20	350	230	ND	9.5	0.5	13.5	1043
11/15/11	Swampscott, MA	StaceyN	911	13,130	857	0.2	0.01	0.40	61	1300	23	210	250	ND	7.7	0.4	13.5	887
11/15/11	Swampscott, MA	StaceyN	940	22,240	504	0.25	0	0.25	51	1000	20	220	320	ND	8	0.5	13.6	1032
11/15/11	Swampscott, MA	Stacey03	1040	420	30	0.6	0.02	0.10	ND	8.6	1.4	1.4	12	NA	2.4	NA	NA	NA
11/15/11	Swampscott, MA	Stacey04	1100	NA	NA	NA	NA	>6	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA

* sampling conducted in dry weather

E. coli - color key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, Black < 235 col/100ml
Entero - color key: Red ≥ 1000 col/100ml, Orange ≥ 350 Yellow ≥ 61 col/100ml, Black < 61 col/100ml
NH3 - color key: Red ≥ 6 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.0 mg/L
Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.25 mg/L, Black < 0.25 mg/L *** may give false positive at salinity greater than 1 ppt
PPCP color key: Pink = Concentrations greater than background
Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yellow ≥ 0.02 mg/L, Black < 0.02 mg/L

REPORTING LIMITS
E. coli = 4 MPN/100mL
Enterococcus = 10 MPN/100mL
Surfactants Field = 0.1 mg/L
Ammonia Field = 0.1 mg/L

ND – not detected above the associated detection limit
NA – not applicable (analyte not tested for at that site at this time)
(~) – data reported as estimate