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de maximis, inc.

200 Day Hill Road
Suite 200
Windsor, CT 06095
(860) 298-0541
(860) 298-0561 FAX

Superfund Records Center
Industri-plex
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460397

October 13, 2009

Mr. Joseph F. LeMay, P.E.
Remedial Project Manager
US Environmental Protection Agency, Region 1
Office of Site Remediation and Restoration
MA Superfund Section
One Congress Street, Suite 1100, (HBO)
Boston, MA 02114-2023

Subject: Industri-plex Operable Unit 2 Superfund Site
Woburn, Massachusetts
Baseflow Surface Water Monitoring Report

Dear Mr. LeMay:

Pursuant to Paragraph 34 of the Consent Decree (CD)(Civil Action No.1:08-cv-10325) and Section V.A.5 of the Remedial Design / Remedial Action (RD/RA) Statement of Work (SOW) for the above referenced site, enclosed please find the Baseflow Surface Water Monitoring Report No. 6.

This report covers the period from September 1 - 30, 2009, and is submitted on behalf of the Settling Defendants.

Please contact me if you have any questions.

Sincerely,

Bruce Thompson
Project Coordinator

Enclosure

cc: Jen McWeeney - MassDEP
Settling Defendants
Larry McTiernan – Roux Associates

DRAFT

Baseflow Surface Water Monitoring Monthly Report No. 6
(September 2009)

Industri-plex Superfund Site
Operable Unit 2
Woburn, Massachusetts

Disclaimer – This document is a DRAFT document prepared by the Settling Defendants under a government Consent Decree. This document has not undergone formal review by the U.S. Environmental Protection Agency (EPA) or the Massachusetts Department of Environmental Protection (MassDEP). The opinions, findings, and conclusions expressed are those of the author and not those of the EPA or the MassDEP.

In accordance with the Surface Water Monitoring Plan (SWMP), this monthly Baseflow Surface Water Monitoring Report has been prepared to summarize the surface water monitoring and maintenance activities performed and the data developed for baseflow conditions during the reporting period (September 1 through September 30, 2009) and to provide a brief discussion of the data. Surface water monitoring stations are shown in **Figures 1 and 2**. Flowlink® data and operation and maintenance (O&M) inspection sheets for the reporting period are provided on the attached compact disc.[1]

Monitoring and Maintenance Activities Performed During the Reporting Period

1. Several modifications to the SWMP monitoring stations were completed during the reporting period, including the following:

    - on September 1, 2009, re-programmed the flow conversions at the AAD and BECO ROW monitoring stations (SW-2-IP and SW-3-IP, respectively) using revised level-area data points from the cross-sectional profile of the stream surveyed on March 26, 2009

    - on September 3, 2009, relocated the staff gauge at the Salem Street monitoring station (SW-05-TT) for better visibility, and on September 10, 2009, surveyed the relocated staff gauge relative to the station benchmark

    - during periods of insufficient flow the In-Situ® MP Troll® 9500 water quality meters at the AAD and BECO ROW monitoring stations (SW-2-IP and SW-3-IP, respectively) were removed to prevent sensor damage

2. Regular weekly O&M activities were performed at the surface water monitoring stations on September 3, 10, 17, 24 and 25, 2009, and included the following:

    - inspected instrumentation and tubing and adjusted as needed

    - cleared debris around station instrumentation

    - cleaned sample intake and staff gauge

    - cleaned the Isco 750 area-velocity module sensor and the In-Situ® MP Troll® 9500 water quality meter sensors

[1] For most stations, the current Isco programming information included in the Flowlink® data is based on the rating curves reported by TTNUS in the MSGRP RI Report and is subject to revision pending review of the accuracy of the TTNUS rating curves.

- checked calibration of the In-Situ® MP Troll® 9500 water quality meter sensors and re-calibrated as needed
- collected manual stage measurements
- checked station power levels
- inspected rain gauges and cleaned as needed
- downloaded flow and water quality data stored in the Isco units
- verified the telemetry cable connection

3. Monthly O&M activities were performed on September 24 and September 25, 2009 (in conjunction with weekly O&M activities) and included the following:

   - collected manual velocity measurements
   - cleaned solar panels
   - calibrated the In-Situ® MP Troll® 9500 water quality meter sensors

4. The SWMP monthly baseflow sampling event was conducted on September 2, 2009 and included the following:

   - collected baseflow surface water samples at all ten SWMP monitoring stations
   - measured groundwater and surface water elevations at nine of the ten SWMP monitoring stations[2]

5. Manual gauging of stream flow was conducted at nine stations on August 31 and September 1, 2009.[3]

[2] There is no piezometer at the Mishawum Road monitoring station (SW-04-TT).
[3] Manual stream gauging was not performed at the BECO ROW monitoring station (SW-3-IP) because a rating curve is not being developed for this station in accordance with the SWMP.

Data Generated During the Reporting Period

1. Water quality parameters recorded at the time of baseflow sampling on September 2, 2009 are provided in **Tables 1a through 1j**, along with the water quality measurements made during all previous SWMP and "early action" baseflow sampling events.

2. Analytical results for the baseflow samples collected during the reporting period are provided in **Tables 2a through 2j** along with validated analytical laboratory results for baseflow samples collected during previous SWMP sampling events, "early action" sampling, and other previous sampling programs at the site (i.e., the Groundwater and Surface Water Investigation Plan [GSIP] and the Multiple Source Groundwater Response Plan [MSGRP]). The SWMP and "early action" results for benzene, dissolved arsenic, and ammonia at the four monitoring stations proximal to the HBHA Pond (SW-01-TT, SW-2-IP, SW-3-IP, and SW-02-TT) are compared to the surface water cleanup standards identified in the Final RD/RA Statement of Work for Industri-Plex Operable Unit 2.[4]

3. Groundwater and surface water elevation data are provided in **Table 3**.

Data Analysis

Comparison to surface water cleanup standards – As shown in **Tables 2a through 2d**, there was only one result potentially indicative of an exceedance of a surface water cleanup standard at the monitoring stations proximal to the HBHA Pond. Specifically, ammonia was detected in the sample collected at the HBHA pond monitoring station (SW-02-TT) at a concentration of 4.94 milligrams per liter (mg/l), which is above the National Recommended Water Quality Criteria calculated value of 4.74 mg/l.[5]

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[4] These surface water cleanup standards must be met at the completion of the remedial action at the point of compliance, which is defined as the discharge point of the secondary treatment cell within the northern portion of the HBHA pond.

[5] The results shown for ammonia are point measurements. Compliance with the ammonia NRWQC is **based on the 30-day average concentration. A point measurement of ammonia above the NRWQC does not by** itself violate the standard.

Data trends – Benzene, total arsenic, dissolved arsenic, and ammonia concentrations detected in baseflow samples collected during the SWMP and previous sampling programs (MSGRP, GSIP, and "Early Action") are summarized in box-whisker plots in **Appendix A**. The most recent SWMP results are shown as solid circles (unless the analyte was not detected), while the previous SWMP results and all results from previous sampling programs are plotted as "boxes" and "whiskers" whenever possible.[6] The boxes indicate the range within which the central fifty percent of the results fall (the box edges mark the first and third quartiles and the line dividing the box in two marks the median value), while the whiskers show the full range of values reported.[7]

[6] Since at least two values are required to construct a "box," previous results are shown as individual diamonds in those cases where the analyte was detected in only one sample during a particular sampling program.

[7] Any statistical outliers that may be present are not indicated as such.

TABLES

Table 1a
Baseflow Water Quality Parameters for SW-01-TT (Halls Brook)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Remedial Design "Early Action"							
SW-01-TT	08/21/08	17.3	8.3	7.1	250.2	832.3	9.1
	09/18/08	14.3	8.6	7.1	176.7	755.9	6.3
	10/09/08	15.1	7.5	6.9	169.7	899.5	15.6
	11/05/08	9.7	7.1	6.8	508.3	2774.0	27.5
	12/09/08	2.2	9.0	6.8	483.9	3056.0	47.3
	01/20/09	0.4	12.4	7.0	81.0	1362.0	24.7
	02/02/09	1.7	7.8	6.9	-287.4	1184.0	8.1
	03/18/09	7.1	ERR	ERR	10.3	ERR	44.5
	04/01/09	7.1	ERR	ERR	6.7	ERR	388.4
Surface Water Monitoring Plan							
SW-01-TT	04/17/09	13.0	15.7	6.9	34.0	965.5	3.7
	05/12/09	15.7	8.0	7.2	499.7	662.0	18.7
	06/02/09	16.2	8.7	7.7	93.7	923.0	49.8
	07/15/09	18.8	3.9	6.9	518.3	743.0	133.8
	08/05/09	20.9	ERR	6.7	470.9	800.0	ERR
	09/02/09	15.7	ERR	5.1	544.9	753.0	119.3

Notes:
°C = Degrees Celsius
mg/l = milligrams per liter
s.u. = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units
ERR = Equipment error (e.g., ice buildup, sensor drift, stage below sensor(s), struck by debris, and/or buildup on sensor)

Table 1b
Baseflow Water Quality Parameters for SW-2-IP (AAD)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Remedial Design "Early Action"							
SW-2-IP	08/21/08	23.8	9.0	7.1	222.8	613.7	3.6
	09/18/08	15.6	9.5	6.9	149.2	233.9	47.2
	10/09/08	17.5	9.1	7.1	188.3	497.2	1.6
	11/05/08	13.3	10.8	7.4	431.8	2.0	7.5
	12/09/08	-0.6	9.9	6.5	443.7	512.0	1.8
	01/20/09	0.1	6.4	6.8	160.0	1161.0	177.5
	02/02/09	-0.8	NM	6.6	466.6	1464.0	2.0
	03/18/09	8.9	1.9	7.0	249.4	1418.0	23.0
	04/01/09	5.6	2.0	7.0	352.5	1286.0	2.3
Surface Water Monitoring Plan							
SW-2-IP	04/17/09	17.3	13.2	7.4	55.0	785.7	0.3
	05/12/09	16.9	9.6	7.4	396.6	783.0	2.2
	06/02/09	21.4	12.5	7.7	114.9	841.0	1.9
	07/15/09	25.3	5.8	7.1	375.5	362.0	2.1
	08/05/09	27.3	5.6	7.0	414.0	413.1	ERR
	09/02/09	21.7	7.7	7.2	361.0	597.0	2.9

Notes:
AAD = Atlantic Avenue Drainway
°C = Degrees Celsius
mg/l = milligrams per liter
s.u. = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units
NM = Not measured (e.g., insufficient flow and/or due to equipment limitations)

Table 1c
Baseflow Water Quality Parameters for SW-3-IP (BECO ROW)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Remedial Design "Early Action"							
SW-3-IP	08/21/08	19.7	9.6	7.5	210.4	906.2	5.2
	09/18/08	NS	NS	NS	NS	NS	NS
	10/09/08	17.4	5.9	7.1	179.4	697.0	4.2
	11/05/08	NS	NS	NS	NS	NS	NS
	12/09/08	NS	NS	NS	NS	NS	NS
	01/20/09	NS	NS	NS	NS	NS	NS
	02/02/09	5.2	9.0	6.8	-17.0	800.7	1.4
	03/18/09	10.5	3.7	7.1	162.4	193.0	58.2
	04/01/09	4.1	2.3	6.8	110.2	ERR	21.3
Surface Water Monitoring Plan							
SW-3-IP	04/17/09	16.4	11.7	6.8	-70.0	908.3	4.7
	05/12/09	13.5	7.3	7.3	370.7	3.0	24.3
	06/02/09	NM	NM	NM	NM	NM	NM
	07/15/09†	14.7	0.0	11.8	7.5	22.0	344.8
	08/05/09†	14.6	0.0	4.0	7.6	26.0	ERR
	09/02/09	NM	NM	NM	NM	NM	NM

Notes:
BECO ROW = Boston Edison Company right-of-way
°C = Degrees Celsius
mg/l = milligrams per liter
s.u = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units
NS = Not Sampled
NM = Not measured (eg insufficient flow and/or due to equipment limitations)
ERR = Equipment error (eg ice buildup, sensor drift, stage below sensor(s), struck by debris, and/or buildup on sensor)
* = Barely discernable flow and limited flushing of water, water quality parameters most likely indicate 'stagnant' water and, therefore, are not representative of baseflow conditions

Table 1d
Baseflow Water Quality Parameters for SW-02-TT (HBHA Pond Outlet)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Remedial Design "Early Action"							
SW-02-TT	08/21/08	23.7	7.4	6.8	264.5	880.3	6.2
	09/18/08	17.4	6.3	6.8	178.9	728.0	5.7
	10/09/08	16.5	7.9	6.8	192.2	888.2	5.4
	11/05/08	8.6	7.1	6.7	466.9	854.0	30.2
	12/09/08	1.7	10.3	6.5	504.2	780.0	13.5
	01/20/09	0.9	13.9	6.8	139.0	11.8	9.2
	02/02/09	1.2	NM	6.4	336.6	1176.0	14.8
	03/18/09	7.1	11.3	6.5	451.4	11.7	24.2
	04/01/09	7.1	10.0	6.5	479.3	948.0	16.8
Surface Water Monitoring Plan							
SW-02-TT	04/17/09	12.5	10.4	6.8	74.0	959.5	22.5
	05/12/09	14.8	7.6	6.7	480.8	800.0	30.1
	06/02/09	18.1	14.8	7.3	139.2	974.0	24.9
	07/15/09	21.1	4.4	6.3	489.0	781.0	62.4
	08/05/09	22.2	3.7	6.5	432.2	754.0	ERR
	09/02/09	19.8	5.3	6.5	505.6	672.0	123.5

Notes:
HBHA = Halls Brook Holding Area
°C = Degrees Celsius
mg/l = milligrams per liter
s.u. = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units
NM = Not measured (e.g., insufficient flow and/or due to equipment limitations)

Table 1e
Baseflow Water Quality Parameters for SW-03-TT (Aberjona River)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Surface Water Monitoring Plan							
SW-03-TT	04/17/09	13.5	11.1	6.6	36.0	967.8	7.8
	05/12/09	18.7	5.2	6.9	79.6	733.0	67.9
	06/02/09	16.9	5.8	7.5	31.8	1261.0	1257.0
	07/15/09	20.4	5.0	6.6	493.1	826.0	22.7
	08/05/09	22.1	3.0	6.7	494.8	708.0	ERR
	09/02/09	17.3	2.5	6.6	440.9	832.0	75.4

Notes:
°C = Degrees Celsius
mg/l = milligrams per liter
s.u = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units

Table 1f
Baseflow Water Quality Parameters for SW-04-TT (HBHA Wetland Outlet)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Remedial Design "Early Action"							
SW-04-TT	08/21/08	20.2	9.8	6.8	224.0	883.1	8.4
	09/18/08	16.8	7.0	6.8	81.7	727.8	9.6
	10/09/08	18.0	8.0	6.8	138.4	920.0	8.1
	11/05/08	8.7	2.7	6.7	243.7	916.0	0.0
	12/09/08	1.4	8.8	6.0	350.9	778.0	0.0
	01/20/09	0.2	4.6	6.0	NM	1172.0	0.0
	02/02/09	0.8	4.5	8.0	335.5	1394.0	0.0
	03/18/09	10.6	14.2	7.8	222.8	1063.0	0.2
	04/01/09	6.8	10.7	7.8	226.0	844.0	0.0
Surface Water Monitoring Plan							
SW-04-TT	04/17/09	11.9	10.7	6.9	-10.0	1289.0	3.3
	05/12/09	19.4	11.7	6.8	286.0	570.0	7.5
	06/02/09	19.0	14.1	7.5	83.6	978.0	9.6
	07/15/09	23.2	7.6	6.9	387.2	781.0	21.4
	08/05/09	ERR	ERR	ERR	ERR	ERR	ERR
	09/02/09	6.9	ERR	ERR	19.4	18.0	472.7

Notes:
HBHA = Halls Brook Holding Area
°C = Degrees Celsius
mg/l = milligrams per liter
s.u. = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units
NM = Not measured (eg. insufficient flow and/or due to equipment limitations)
ERR = Equipment error (eg. Ice buildup, sensor drift, stage below sensor(s), struck by debris, and/or buildup on sensor)

Table 1g
Baseflow Water Quality Parameters for SW-05-TT (Salem Street)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Surface Water Monitoring Plan							
SW-05-TT	04/17/09	10.7	10.7	7.0	54.0	1154.0	5.1
	05/12/09	17.9	3.1	7.1	319.8	929.0	41.7
	06/02/09	18.9	12.3	7.6	135.1	1121.0	12.9
	07/15/09	20.5	9.2	6.8	429.6	1086.0	20.7
	08/05/09	22.7	0.4	6.7	472.2	936.0	ERR
	09/02/09	6.8	ERR	ERR	17.6	5.0	480.9

Notes:
°C = Degrees Celsius
mg/l = milligrams per liter
s.u. = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units
ERR = Equipment error (eg. Ice buildup, sensor drift, stage below sensor(s), struck by debris, and/or buildup pn sensor)

Table 1h
Baseflow Water Quality Parameters for SW-06-TT (Montvale Avenue)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Surface Water Monitoring Plan							
SW-06-TT	04/17/09	8.7	10.5	7.0	145.0	1212.0	3.3
	05/12/09	14.6	14.3	6.8	420.4	723.2	17.2
	06/02/09	16.6	6.7	7.5	96.9	1120.0	32.6
	07/15/09	17.4	7.0	7.0	425.0	780.0	6.9
	08/05/09	25.1	7.6	7.0	382.5	824.0	0.0
	09/02/09	15.9	7.0	6.9	464.5	825.0	70.6

Notes:
°C = Degrees Celsius
mg/l = milligrams per liter
s.u = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units

Table 1i
Baseflow Water Quality Parameters for SW-07-TT (Swanton Street)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Surface Water Monitoring Plan							
SW-07-TT	04/17/09	9.3	11.2	6.9	60.0	1145.0	2.6
	05/12/09	14.6	8.4	6.9	464.2	920.0	13.7
	06/02/09	16.8	7.5	7.9	54.8	1042.0	1.5
	07/15/09	17.8	6.5	6.9	466.6	1028.0	2.9
	08/05/09	21.5	4.8	7.0	522.7	908.0	ERR
	09/02/09	17.5	7.6	7.0	443.8	767.0	7.3

Notes:
°C = Degrees Celsius
mg/l = milligrams per liter
s.u. = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units

Table 1j
Baseflow Water Quality Parameters for SW-08-TT (USGS / Mystic Avenue)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Date	Temperature (°C)	Dissolved Oxygen (mg/l)	pH (s.u.)	ORP (mV)	Specific Conductance (µS/cm)	Turbidity (NTU)
Surface Water Monitoring Plan							
SW-08-TT	04/17/09	9.9	10.9	6.9	177.0	1074.0	5.2
	05/12/09	15.0	7.1	6.9	498.0	878.0	46.3
	06/02/09	16.6	9.3	8.4	63.4	970.0	33.3
	07/15/09	19.4	6.8	7.3	432.7	987.0	3.3
	08/05/09	23.0	6.2	7.1	436.4	902.0	ERR
	09/02/09	17.0	7.4	7.1	360.5	765.0	3.4

Notes:
USGS = United States Geological Survey
°C = Degrees Celsius
mg/l = milligrams per liter
s.u. = standard units
mV = milliVolts
µS/cm = microSiemens per centimeter
NTU = Nephelometric Turbidity Units

Table 2a
Baseflow Laboratory Analytical Results for SW-01-TT (Halls Brook)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

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Sample ID	Flow[2] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia[3] (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Cleanup Standards[1]		*46*	*NA*	*0.015*	*NA*	*NA*	*NA*	*NRWQC - CCC*	*NA*	*NA*	*NA*	*NA*
Groundwater & Surface Water Investigation Plan												
SW-1	NC	--	0.0036J	0.0031U	--	--	8	--	--	--	--	--
	NC	--	0.0025U	0.0025U	--	--	5U	--	--	--	--	--
	NC	--	0.0035U	0.0035U	--	--	5U	--	--	--	--	--
Multiple Source Groundwater Response Plan												
SW-01-TT	NC	--	0.0037UJ	0.0012UJ	1.25	0.567	4.1	--	--	--	--	--
	NC	--	0.009U	0.0052U	1.1J	0.153J	6.8	--	--	--	--	--
	NC	--	0.0022J	0.0012U	0.457	0.134U	1.6J	--	--	--	--	--
	NC	--	0.003U	0.003U	0.378	0.218	4U	--	--	--	--	--
	NC	--	0.003U	0.003U	0.285J	0.114	1J	--	--	--	--	--
	NC	--	0.003U	0.0034J	0.591J	0.105J	10.4	--	--	--	--	--
	NC	--	0.003U	0.003U	0.847	0.22U	4	--	--	--	--	--
	NC	--	0.0024U	0.0024U	1.05	0.342	11J	--	--	--	--	--
	NC	--	0.0017U	0.0017U	0.725	0.395	2.4J	--	--	--	--	--
	NC	--	0.002U	0.002U	1.17J	0.499	5.7	--	--	--	--	--
	NC	--	0.002U	0.002U	1.16	0.538	3.4J	--	--	--	--	--
	NC	--	0.002U	0.002U	1.65	0.868	6.4J	--	--	--	--	--
	NC	--	0.0038	0.0013U	1.21	0.0742U	7.2	--	--	--	--	--
	NC	--	0.0032	0.0014J	0.915	0.075U	5.2J	--	--	--	--	--
	NC	--	0.0023UJ	0.0013U	0.732	0.105U	3.4J	--	--	--	--	--
	NC	--	0.0042J	0.003U	2.06	0.0818U	20.4	--	--	--	--	--
	NC	--	0.003U	0.003U	0.373	0.152	2UJ	--	--	--	--	--
Remedial Design "Early Action"												
SW-01-TT	NM	0.5U	0.005J	0.005J	--	--	5U	3.51 *(4.68)*	0.13	1.2	2.6	0.3U
	NM	0.5U	0.005U	0.005U	--	--	5U	3.13 *(5.74)*	0.06	1.1	3.7	0.57
	NM	0.5U	0.005U	0.005U	--	--	5U	3.98 *(5.84)*	0.08	1	4.8	0.82
	3.16	0.5U	0.005U	0.005U	--	--	6	2.58 *(6.29)*	0.04J	0.81	4	1.4
	5.70	0.5U	0.003U	0.003U	--	--	8.1	3.96 *(6.29)*	0.01J	7.6	5	1
	NM	0.5U	0.003U	0.003U	--	--	7.9	3.24 *(6.02)*	0.034J	1	3.6	0.36
	6.12	0.5U	0.003U	0.003U	--	--	5U	2.89 *(6.12)*	0.06	1.1	3.5	0.61
	8.19	0.5U	0.003U	0.003U	--	--	5U	2.75	0.05U	1.1	3.8	1
	7.89	0.5U	0.003U	0.003U	--	--	12	2.09	0.05U	0.86	3.2	1.1
Surface Water Monitoring Plan												
SW-01-TT	8.86	0.5U	0.005	0.003	0.92	0.26	5U	2.43 *(6.10)*	0.036J	1	3	0.57
	7.53	0.5U	0.002J	0.003U	1.3	0.5	5U	2.97 *(4.99)*	0.05	0.96	3.8	0.83
	4.19	0.5U	0.003	0.003U	0.76	0.23	5U	2.39 *(5.39)*	0.32	0.96	2.7	0.31
	0.81	0.5U	0.005	0.0025J	1.3	0.72	5U	3.34 *(4.64)*	0.13	0.99	3.9	0.56
	0.81	0.5U	0.0026J	0.003U	1.4	0.74	5U	2.99 *(4.27)*	0.07	1	3.7	0.71
	0.81	0.5U	0.0027J	0.0024J	0.57	0.28	5U	2.63 *(6.55)*	0.07	8.7	3.2	0.57

Notes:
1. These surface water cleanup standards must be met at the completion of the remedial action at the point of compliance which is defined as the discharge point of the secondary treatment cell within the northern portion of the HBHA pond Any exceedences are highlighted
2. Flows are subject to revision pending review of accuracy of rating curves
3. Results shown are point measurements and are used as surrogates for the 30-day average concentration to which the Cleanup Standard applies

NRWQC (CCC) = National Recommended Water Quality Criteria (Chronic Criterion Fish Early Life Stages Present) is event-specific and based on pH and temperature at the time of sampling. calculated standard for event is derived using formulas presented in EPA NRWQC document (2002/4)
NRWQC (CCC) values are shown in parenthesis. For some samples, pH and/or temperature data was unavailable and therefore, a value could not be calculated

cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NC = Not Calculated
-- = Sample not analyzed for this compound
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit Value is estimated
U = Compound or sample not detected value shown is reporting limit
NM = Not measured (e.g. insufficient flow and/or due to equipment limitations)

Table 2b
Baseflow Laboratory Analytical Results for SW-2-IP (Atlantic Avenue Drainway)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Flow[2] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia[3] (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Cleanup Standards[1]		*46*	*NA*	*0.015*	*NA*	*NA*	*NA*	*NRWQC - CCC*	*NA*	*NA*	*NA*	*NA*
Groundwater & Surface Water Investigation Plan												
SW-2	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NC	--	0.0098B	0.0068B	--	--	10.8	--	--	--	--	--
Remedial Design "Early Action"												
SW-2-IP	NM	0.5U	0.007	0.005U	--	--	5U	0.088 *(3.06)*	0.05J	0.24	0.4	0.31
	NM	0.5U	0.005U	0.005U	--	--	5U	0.075J *(5.74)*	0.05U	0.15	0.47	0.47
	NM	0.5U	0.005U	0.005U	--	--	5U	0.0618J *(4.58)*	0.034J	0.32	0.35	0.35
	0.02	0.5U	0.0028J	0.005U	--	--	5U	0.0623J *(4.73)*	0.05U	0.4	0.86	0.86
	0.79	0.5U	0.003U	0.003U	--	--	5U	0.402 *(6.67)*	0.02U	0.52	0.71	0.31
	NM	0.5U	0.003U	0.003U	--	--	5U	1.74 *(6.33)*	0.05U	0.57	2	0.3U
	NM	0.5U	0.003U	0.003U	--	--	5U	1.13 *(6.57)*	0.044J	0.62	1.9	0.77
	1.57	0.5U	0.003U	0.003U	--	--	5U	0.328 *(5.91)*	0.05U	1.1	0.8	0.47
	0.24	0.5U	0.003U	0.003U	--	--	5U	0.403 *(5.91)*	0.05U	0.89	0.87	0.47
Surface Water Monitoring Plan												
SW-2-IP	1.34	0.5U	0.003U	0.003U	0.23	0.08	5U	0.0468J *(4.05)*	0.05U	0.87	0.46U	0.46
	1.47	0.5U	0.003U	0.003U	0.59	0.037J	5U	0.103 *(4.06)*	0.05U	0.21	0.9U	0.8
	NM	0.5U	0.0023J	0.0025J	1.2	0.4	5U	0.088 *(2.35)*	0.05U	0.46	0.58	0.49
	0.45	0.5U	0.0023J	0.003	0.74	0.35	5U	0.091 *(2.83)*	0.14	0.32	0.44	0.35
	1.18	0.5U	0.003U	0.003U	1	0.46	5U	0.107 *(2.59)*	0.05U	0.25	0.47	0.36
	0.83	0.5U	0.0024J	0.0024J	0.54	0.19	5U	0.145 *(3.39)*	0.036J	0.14	0.43U	0.3U

Notes:

1 These surface water cleanup standards must be met at the completion of the remedial action at the point of compliance, which is defined as the discharge point of the secondary treatment cell within the northern portion of the HBHA pond. Any exceedences are highlighted.

2 Flows are subject to revision pending review of accuracy of rating curves

3 Results shown are point measurements and are used as surrogates for the 30-day average concentration to which the Cleanup Standard applies

NRWQC (CCC) = National Recommended Water Quality Criteria (Chronic Criterion, Fish Early Life Stages Present) is event-specific and based on pH and temperature at the time of sampling, calculated standard for event is derived using formulas presented in EPA NRWQC document (2002/4)
NRWQC (CCC) values are shown in parenthesis. For some samples, pH and/or temperature data was unavailable and therefore, a value could not be calculated

AAD = Atlantic Avenue Drainway
cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NS = Not sampled
-- = Sample not analyzed for this compound
NC = Not Calculated
B = The reported result is attributed to laboratory contamination due to the presence of the chemical in the associated laboratory blank
U = Compound or sample not detected, value shown is reporting limit
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit Value is estimated
NM = Not measured (e.g., insufficient flow and/or due to equipment limitations)

Table 2c
Baseflow Laboratory Analytical Results for SW-3-IP (Boston Edison Co. ROW)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Flow[2] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia[3] (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Cleanup Standards[1]		*46*	*NA*	*0.015*	*NA*	*NA*	*NA*	*NRWQC - CCC*	*NA*	*NA*	*NA*	*NA*
Groundwater & Surface Water Investigation Plan												
SW-3	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Remedial Design "Early Action"												
SW-3-IP	NM	--	--	--	--	--	--	23.5 *(3.13)*	--	--	--	--
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NM	0.5U	0.0028J	0.0047J	--	--	84	12.3 *(4.74)*	0.15	1.1	13	0.7
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	NM	0.43J	0.22	0.029	--	--	650	15.7 *(6.31)*	0.11	1.2	16	0.3
	0.15	3.5	0.144	0.029	--	--	93	22.6 *(5.67)*	0.036J	1.3	24	1.4
	0.02	3.2	0.087	0.055	--	--	35	25.5 *(6.29)*	0.034J	1.1	26	0.5
Surface Water Monitoring Plan												
SW-3-IP	0.09	1.3	0.419	0.037	39	2.6	1100	20.1 *(5.54)*	0.08	1.8	22	1.9
	0.05	0.5U	0.028	0.004	1.7	0.08	140	11.5 *(5.08)*	0.13	1.5	12	0.5
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	0.06	0.5U	0.01	0.006	0.42	0.05	5U	14.3 *(0.16)*	0.22	1.1	14	0.3U
	0.04	0.5U	0.032	0.009	1.1	0.028J	5U	17.3 *(7.05)*	0.1	0.55	18	0.7
	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 These surface water cleanup standards must be met at the completion of the remedial action at the point of compliance, which is defined as the discharge point of the secondary treatment cell within the northern portion of the HBHA pond. Any exceedences are highlighted.
2 Flows are subject to revision pending review of accuracy of rating curves.
3 Results shown are point measurements and are used as surrogates for the 30-day average concentration to which the Cleanup Standard applies.

NRWQC (CCC) = National Recommended Water Quality Criteria (Chronic Criterion, Fish Early Life Stages Present) is event-specific and based on pH and temperature at the time of sampling; calculated standard for event is derived using formulas presented in EPA NRWQC document (2002/4).
NRWQC (CCC) values are shown in parenthesis. For some samples, pH and/or temperature data was unavailable and therefore, a value could not be calculated.

BECO ROW = Boston Edison Company Right-of-Way
cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NS = Not Sampled
-- = Sample not analyzed for this compound
U = Compound or sample not detected; value shown is reporting limit
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit. Value is estimated.
NM = Not measured (e.g., insufficient flow and/or due to equipment limitations)

Table 2d
Baseflow Laboratory Analytical Results for SW-02-TT (HBHA Pond Outlet)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Flow[2] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia[3] (mg/l)	Nitrite (mg/l)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Cleanup Standards[1]		*46*	*NA*	*0.015*	*NA*	*NA*	*NA*	*NRWQC - CCC*	*NA*	*NA*	*NA*	*NA*
Groundwater & Surface Water Investigation Plan												
SW-4	NC	--	0.0211	0.0031U	1.15	--	5U	--	--	--	--	--
	NC	--	0.0131	0.0025U	0.966	--	5U	--	--	--	--	--
	NC	--	0.0069J	0.0112J	1.05	--	5U	--	--	--	--	--
Multiple Source Groundwater Response Plan												
SW-02-TT	NC	--	0.0217	0.0096J	2.28	1.12	4.3	--	--	--	--	--
	NC	--	0.0209	0.0058U	1.6J	0.349	4.6	--	--	--	--	--
	NC	--	0.0173	0.0045	1.1	0.114U	5.6J	--	--	--	--	--
	NC	--	0.0312	0.0032J	2.23	0.159	5.6	--	--	--	--	--
	NC	--	0.0431	0.004J	3.51J	0.0472	12.8J	--	--	--	--	--
	NC	--	0.0235	0.0045J	2.82J	0.0992J	9.6	--	--	--	--	--
	NC	--	0.0118	0.0055J	1.53	0.193U	1.6	--	--	--	--	--
	NC	--	0.0119	0.005	1.79	0.309	4J	--	--	--	--	--
	NC	--	0.0205	0.0079	2.21	0.548	5.8J	--	--	--	--	--
	NC	--	0.0113	0.0061	1.41J	0.706	3.2	--	--	--	--	--
	NC	--	0.0122	0.008	1.66	0.952	3J	--	--	--	--	--
	NC	--	0.0136U	0.0065U	1.85	0.676	4.4J	--	--	--	--	--
	NC	--	0.0232	0.0031	1.84	0.042U	4.4	--	--	--	--	--
	NC	--	0.0281	0.0044	1.91	0.0509U	6.6J	--	--	--	--	--
	NC	--	0.0168	0.0024UJ	1.36	0.0407U	2.8J	--	--	--	--	--
	NC	--	0.0774	0.0083	6.52	0.297	23.6	--	--	--	--	--
	NC	--	0.0236	0.0054J	1.82	0.351	4UJ	--	--	--	--	--
Remedial Design "Early Action"												
SW-02-TT	NM	0.5U	0.029	0.006	--	--	5U	7.73 *(3.51)*	0.1	0.76	8.2	0.47
	NM	0.5U	0.021	0.005U	--	--	5U	6.01 *(5.28)*	0.08	0.82	6.8	0.79
	NM	0.5U	0.019	0.0048J	--	--	5U	5.39 *(5.61)*	0.07	0.81	6.2	0.81
	8.44	0.5U	0.02	0.005	--	--	5U	5.52J *(6.44)*	0.05U	0.57	6.3	0.78
	5.49	0.34J	0.017	0.009	--	--	5U	5.51 *(6.67)*	0.01J	0.88	6	0.49
	NM	0.5U	0.009	0.004	--	--	5U	4.11 *(6.28)*	0.027J	0.99	4.6	0.49
	~5	0.28J	0.015	0.011	--	--	5U	3.93 *(6.75)*	0.07	0.98	4.4	0.47
	NM	0.9	0.015	0.01	--	--	5U	4.6 *(6.67)*	0.05U	0.96	5.6	1
	~6	0.7	0.014	0.007	--	--	5U	3.51 *(6.67)*	0.05U	0.79	4.7	1.2
Surface Water Monitoring Plan												
SW-02-TT	8.62	0.46J	0.015	0.006	1.4	0.2	5U	4.12 *(6.26)*	0.05U	1	5.9	1.8
	4.27	0.27J	0.017	0.006	1.9	0.33	5U	4.93 *(6.33)*	0.043J	0.7	5.6	0.67
	0.90	0.5U	0.018	0.008	1.4	0.06	5U	5.87 *(3.96)*	0.14	0.78	6.6	0.73
	2.10	0.5U	0.014	0.01	1.6	0.97	5U	3.69 *(4.46)*	0.07	0.82	4.6	0.91
	2.44	0.5U	0.009	0.007	1.7	0.84	5U	3.03 *(4.06)*	0.07	0.82	3.7	0.67
	0.91	0.5U	0.016	0.006	1.3	0.43	5U	4.94 *(4.74)*	0.05	0.49	5.4	0.46

Notes:
1 These surface water cleanup standards must be met at the completion of the remedial action at the point of compliance, which is defined as the discharge point of the secondary treatment cell within the northern portion of the HBHA pond. Any exceedences are highlighted.
2 Flows are subject to revision pending review of accuracy of rating curves.
3 Results shown are point measurements and are used as surrogates for the 30-day average concentration to which the Cleanup Standard applies.

NRWQC (CCC) = National Recommended Water Quality Criteria (Chronic Criterion, Fish Early Life Stages Present) is event-specific and based on pH and temperature at the time of sampling; calculated standard for event is derived using formulas presented in EPA NRWQC document (2002/4).
NRWQC (CCC) values are shown in parenthesis. For some samples, pH and/or temperature data was unavailable and therefore, a value could not be calculated.

HBHA = Halls Brook Holding Area
cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NC = Not Calculated
-- = Sample not analyzed for this compound
U = Compound or sample not detected; value shown is reporting limit
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit. Value is estimated
NM = Not measured (e.g., insufficient flow and/or due to equipment limitations)

Table 2e
Baseflow Laboratory Analytical Results for SW-03-TT (Aberjona)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Flow[1] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia (mg/l)	Nitrite (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan										
SW-03-TT	NC	--	0.0129	0.0096J	1.94	1.12	3.6	--	--	--
	NC	--	0.0184	0.0104U	1.83J	0.568	3.6	--	--	--
	NC	--	0.0281	0.0179	3.13	1.46	6.4J	--	--	--
	NC	--	0.018	0.0136	2.13	0.985	4.8	--	--	--
	NC	--	0.032	0.0242	3.53J	2.43	10.4J	--	--	--
	NC	--	0.029	0.0224	3.32J	1.97	6	--	--	--
	NC	--	0.0278	0.019	3.42	2.11	10.6	--	--	--
	NC	--	0.0128	0.0118	1.63	1.14	1.4J	--	--	--
	NC	--	0.0066	0.0076	1.04	0.935	1.4J	--	--	--
	NC	--	0.0071U	0.0058U	1.16J	0.78	2.1	--	--	--
	NC	--	0.0135	0.0065	2.57	0.773	2J	--	--	--
	NC	--	0.0111U	0.0057U	1.82	0.778	4UJ	--	--	--
	NC	--	0.0246	0.0134	3.07	1.11	5.2	--	--	--
	NC	--	0.0325	0.0147	3.16	0.682	7J	--	--	--
	NC	--	0.0195	0.0037UJ	1.73	0.14U	8.8J	--	--	--
	NC	--	0.0348	0.0161	3.57	1.31	5.4J	--	--	--
	NC	--	0.0284	0.003U	3.14	0.0721U	17.2	--	--	--
	NC	--	0.0072	0.006	1.15	0.683	3J	--	--	--
Surface Water Monitoring Plan										
SW-03-TT	8.58	0.5U	0.006	0.004	--	--	5U	0.778	0.06	0.42
	8.15	0.5U	0.006	0.004	--	--	5U	0.905	0.13	0.7
	3.82	0.5U	0.008	0.006	--	--	5U	1.72	0.43	0.48
	0.85	0.5UJ	0.007	0.011	--	--	5U	0.837	0.38	0.3U
	3.63	0.5U	0.007	0.006	--	--	5U	0.572	0.24	0.63
	0.23	0.5U	0.006	0.005	--	--	5U	0.532	0.14	0.39

Notes:

1 Flows are subject to revision pending review of accuracy of rating curves.

cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NC = Not Calculated
-- = Sample not analyzed for this compound
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit. Value is estimated
U = Compound or sample not detected, value shown is reporting limit

Table 2f
Baseflow Laboratory Analytical Results for SW-04-TT (HBHA Wetland Outlet)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Flow[1] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia (mg/l)	Nitrite (mg/l)	Total Organic Nitrogen (mg/l)
Groundwater & Surface Water Investigation Plan										
SW-9	NC	--	0.0235	0.0031U	2.77	--	8.5	--	--	--
	NC	--	0.0126	0.0123	1.54	--	5U	--	--	--
	NC	--	0.0035U	0.0038J	0.883	--	5U	--	--	--
Multiple Source Groundwater Response Plan										
SW-04-TT	NC	--	0.023	0.0101J	3.09	1.6	4.5	--	--	--
	NC	--	0.0501	0.014	6.14J	0.616	20.4	--	--	--
	NC	--	0.0246	0.005	3.3	0.14U	54.4J	--	--	--
	NC	--	0.0193	0.0031J	2.72	0.121	6.4	--	--	--
	NC	--	0.0649	0.005J	9.66J	0.0666	109J	--	--	--
	NC	--	0.171	0.0049J	27.9J	0.109J	85	--	--	--
	NC	--	0.0242	0.0044J	3.84	0.361	9	--	--	--
	NC	--	0.0251	0.0037J	3.9	0.409	8.2J	--	--	--
	NC	--	0.0166	0.006	2.1	0.626	4.8J	--	--	--
	NC	--	0.0135	0.0077U	1.88J	0.741	5.2	--	--	--
	NC	--	0.0086	0.0082	1.28	1.2	5.3J	--	--	--
	NC	--	0.0238	0.0093U	3.73	1.34	4J	--	--	--
	NC	--	0.0396	0.0062	4.52	0.0484U	12.6	--	--	--
	NC	--	0.0368	0.009	3.8	0.0791U	13.6J	--	--	--
	NC	--	0.0314	0.0052U	3.64	0.0356U	9.2J	--	--	--
	NC	--	0.0478	0.0141	4.6	1.14	15.6	--	--	--
	NC	--	0.0207	0.0045J	2.76	0.447	8.6J	--	--	--
Remedial Design "Early Action"										
SW-04-TT	NM	0.5U	0.025	0.007	--	--	5U	6.92	0.12	0.38
	NM	0.5U	0.022	0.005J	--	--	5U	5.29	0.09	0.41
	NM	0.5U	0.02	0.003J	--	--	5U	5.18	0.09	0.52
	NM	0.5U	0.018	0.006	--	--	5U	6.22J	0.047J	0.98
	5.80	0.5U	0.023	0.007	--	--	5U	5.36	0.01J	0.64
	6.41	0.5U	0.02	0.008	--	--	5.3	4.44	0.05U	0.66
	6.63	0.5U	0.013	0.008	--	--	5U	3.71	0.029J	0.69
	6.02	0.5U	0.012	0.005	--	--	5U	4.08	0.05U	0.92
	6.17	0.46J	0.012	0.006	--	--	5U	3.72	0.05U	0.78
Surface Water Monitoring Plan										
SW-04-TT	5.56	0.5U	0.016	0.006	--	--	5U	3.83	0.05U	0.77
	4.13	0.5U	0.018	0.004	--	--	5U	3.87	0.06	0.83
	3.42	0.5U	0.018	0.009	--	--	5U	5.12	0.049J	0.88
	4.37	0.5UJ	0.021	0.005	--	--	6	2.67	0.15	0.63
	4.47	0.5U	0.017	0.012	--	--	5U	2.27	0.22	0.53
	3.36	0.5U	0.012	0.007	--	--	5U	3.7	0.13	0.3

Notes:
1 Flows are subject to revision pending review of accuracy of rating curves

HBHA = Halls Brook Holding Area
cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NC = Not Calculated
-- = Sample not analyzed for this compound
U = Compound or sample not detected, value shown is reporting limit
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit Value is estimated
NM = Not measured (e.g., Insufficient flow and/or due to equipment limitations)

Table 2g
Baseflow Laboratory Analytical Results for SW-05-TT (Salem Street)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Flow[1] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia (mg/l)	Nitrite (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan										
SW-05-TT	NC	--	0.0218	0.0114J	2.88	1.48	4.5	--	--	--
	NC	--	0.0261	0.013U	2.46J	0.522	2	--	--	--
	NC	--	0.0191	0.0043	2.27	0.254	6.4J	--	--	--
	NC	--	0.0197	0.0072	2.23	0.373	5.2	--	--	--
	NC	--	0.0238	0.0057J	3.05J	0.134	10J	--	--	--
	NC	--	0.0248	0.0102	2.93J	0.66	9.2	--	--	--
	NC	--	0.0195	0.0077	2.71	0.83	7.6	--	--	--
	NC	--	0.0142	0.0047J	2.04	0.489	5.4J	--	--	--
	NC	--	0.0091	0.0046	1.46	0.659	2.6J	--	--	--
	NC	--	0.0158	0.0064U	1.94J	0.511	7.3	--	--	--
	NC	--	0.013	0.0061	2.17	0.865	5.8J	--	--	--
	NC	--	0.0239	0.0072U	3.46	0.927	6.4J	--	--	--
	NC	--	0.028	0.0038	3.02	0.0238U	5.4	--	--	--
	NC	--	0.0241	0.0044	1.95	0.0089UJ	6.8J	--	--	--
	NC	--	0.0126	0.0025U	1.16	0.0884U	3J	--	--	--
	NC	--	0.0238	0.0052U	2.44	0.0087U	5.2J	--	--	--
	NC	--	0.012	0.003U	1.46	0.244	6.8	--	--	--
	NC	--	0.0143	0.0041J	2.15	0.657	5.6J	--	--	--
Surface Water Monitoring Plan										
SW-05-TT	48.55	0.5U	0.009	0.003	--	--	5U	2.09	0.048J	1
	48.94	0.5U	0.012	0.003	--	--	5U	2.18	0.08	0.52
	33.94	0.5U	0.014	0.006	--	--	5U	2.88	0.13J	0.72
	9.47	0.5UJ	0.011	0.006	--	--	5U	1.23	0.25	0.37
	10.07	0.5U	0.009	0.005	--	--	5U	0.366	0.2	0.73
	4.81	0.5U	0.008	0.005	--	--	5U	0.664	0.2	0.44

Notes:

1 Flows are subject to revision pending review of accuracy of rating curves

cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NC = Not Calculated
-- = Sample not analyzed for this compound
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit. Value is estimated
U = Compound or sample not detected, value shown is reporting limit

Table 2h
Baseflow Laboratory Analytical Results for SW-06-TT (Montvale Avenue)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Flow[1] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia (mg/l)	Nitrite (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan										
SW-06-TT	NC	--	0.0147	0.0071J	2.05	0.961	4.2	--	--	--
	NC	--	0.015	0.008U	1.4J	0.355	4.8	--	--	--
	NC	--	0.0101	0.0029	1.08	0.14U	3.6J	--	--	--
	NC	--	0.0189	0.003U	2.6	0.355	15.6	--	--	--
	NC	--	0.018	0.003U	2.56J	0.11	6.4J	--	--	--
	NC	--	0.0112	0.0043J	1.3J	0.19J	3.6	--	--	--
	NC	--	0.01	0.003U	1.52	0.254U	3	--	--	--
	NC	--	0.0092	0.0029J	1.31	0.277	3.4J	--	--	--
	NC	--	0.0055	0.0021J	0.982	0.431	2.2J	--	--	--
	NC	--	0.0038	0.004U	0.359J	0.32	5.2	--	--	--
	NC	--	0.0066	0.004	1.35	0.5	4.6J	--	--	--
	NC	--	0.0148	0.0026UJ	2.18	0.588	4.4J	--	--	--
	NC	--	0.0133	0.0013U	1.51	0.0276U	5	--	--	--
	NC	--	0.0112	0.0028	1.01	0.0098UJ	3.3J	--	--	--
	NC	--	0.0084	0.0016UJ	1.11	0.0087U	3.2J	--	--	--
	NC	--	0.0255	0.0026J	3.4	0.378	27.8	--	--	--
	NC	--	0.0076	0.0033J	1.09	0.375	2UJ	--	--	--
Surface Water Monitoring Plan										
SW-06-TT	9.09	0.5U	0.008	0.005	--	--	5U	1.38	0.07	1.5
	13.25	0.5U	0.009	0.0027J	--	--	5U	1.43	0.08	1.3
	6.18	0.5U	0.01	0.004	--	--	5U	1.8	0.14	0.6
	3.74	0.5UJ	0.01	0.005	--	--	5U	0.591	0.2	0.41
	5.51	0.5U	0.009	0.0026J	--	--	5U	0.181	0.07	0.6
	0*	0.5U	0.005	0.004	--	--	5U	0.22	0.12	0.3U

Notes:

1 Flows are subject to revision pending review of accuracy of rating curves.

cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NC = Not Calculated
-- = Sample not analyzed for this compound
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit Value is estimated
U = Compound or sample not detected, value shown is reporting limit
* Based on TTNUS rating curve, flow was 0 cfs, however, Roux Associates observed flow at the time of sampling

Table 2i
Baseflow Laboratory Analytical Results for SW-07-TT (Swanton Street)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Flow[1] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia (mg/l)	Nitrite (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan										
SW-07-TT	NC	--	0.0094UJ	0.0045J	1.46	0.699	50	--	--	--
	NC	--	0.0109U	0.0047U	1.01J	0.254J	4.6	--	--	--
	NC	--	0.0063	0.0015J	1.02	0.139U	2.8J	--	--	--
	NC	--	0.0056J	0.003U	0.951	0.243	4U	--	--	--
	NC	--	0.0047J	0.003U	0.779J	0.143	1.2J	--	--	--
	NC	--	0.0053J	0.003U	1.06J	0.316J	3	--	--	--
	NC	--	0.0057J	0.003U	1.08	0.163U	2.4	--	--	--
	NC	--	0.0066	0.0024J	1.2	0.249	7.6J	--	--	--
	NC	--	0.0041	0.0017U	0.887	0.331	8.4J	--	--	--
	NC	--	0.0075	0.0037	1.21J	0.371	5.2	--	--	--
	NC	--	0.0061	0.0023J	1.24	0.394	7J	--	--	--
	NC	--	0.0105U	0.0034UJ	1.8	0.396	10J	--	--	--
	NC	--	0.0065	0.0013U	1.13	0.0229U	4	--	--	--
	NC	--	0.0083	0.0033	1.18	0.018U	3.5J	--	--	--
	NC	--	0.0048J	0.0025U	0.777	0.0495U	6J	--	--	--
	NC	--	0.0079U	0.0035U	1.05	0.0156UJ	2.2J	--	--	--
	NC	--	0.0112	0.0036J	1.66	0.224	5.4	--	--	--
	NC	--	0.0048J	0.003U	0.978	0.373	5.2J	--	--	--
Surface Water Monitoring Plan										
SW-07-TT	90.86	0.5U	0.005	0.002J	--	--	5U	0.787	0.05	0.41
	84.97	0.5U	0.008	0.0026J	--	--	5U	0.706	0.1	0.79
	73.67	0.5U	0.008	0.005	--	--	8	0.638	0.22	0.56
	29.81	0.5UJ	0.007	0.004	--	--	5U	0.263	0.13	0.55
	29.92	0.5U	0.005	0.004	--	--	5U	0.234	0.036J	0.97
	29.21	0.5U	0.004	0.003	--	--	5U	0.209	0.07	0.41

Notes:

1 Flows are subject to revision pending review of accuracy of rating curves

cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NC = Not Calculated
-- = Sample not analyzed for this compound
U = Compound or sample not detected; value shown is reporting limit
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit Value is estimated

Table 2j
Baseflow Laboratory Analytical Results for SW-08-TT (USGS / Mystic Avenue)
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Sample ID	Date	Flow[1] (cfs)	Benzene (µg/l)	Total Arsenic (mg/l)	Dissolved Arsenic (mg/l)	Total Iron (mg/l)	Dissolved Iron (mg/l)	TSS (mg/l)	Ammonia (mg/l)	Nitrite (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan											
SW-08-TT	07/14/01	NC	--	0.006UJ	0.0022J	1.36	0.558	6.1	--	--	--
	08/23/01	NC	--	0.0059U	0.005U	1J	0.258J	4.8	--	--	--
	09/18/01	NC	--	0.0047	0.0018J	0.696	0.234	3.8J	--	--	--
	10/22/01	NC	--	0.0026J	0.003U	0.758	0.256	4U	--	--	--
	11/19/01	NC	--	0.0054J	0.003U	1.57J	0.186	2.4J	--	--	--
	12/17/01	NC	--	0.0066J	0.003J	0.77J	0.19J	2J	--	--	--
	01/04/02	NC	--	0.0056J	0.003U	1.06	0.104U	9	--	--	--
	02/15/02	NC	--	0.0053J	0.0024U	0.95	0.209	3.1J	--	--	--
	03/12/02	NC	--	0.0025J	0.0017U	0.76	0.227	7J	--	--	--
	04/17/02	NC	--	0.0057	0.0032	1.02J	0.378	5.1	--	--	--
	05/08/02	NC	--	0.0034J	0.0016J	1.15	0.312	7.7J	--	--	--
	06/20/02	NC	--	0.0048U	0.0021UJ	1.19	0.272	4J	--	--	--
	07/16/02	NC	--	0.0052	0.0013U	1.06	0.0216U	3.3	--	--	--
	08/06/02	NC	--	0.0064	0.0021J	0.596	0.0206U	3.4J	--	--	--
	09/10/02	NC	--	0.003U	0.0013U	0.896	0.0087U	2.6J	--	--	--
	10/18/02	NC	--	0.003U	0.003U	1.52	0.469	179	--	--	--
	10/25/02	NC	--	0.003U	0.003U	0.868	0.34	2.5J	--	--	--
Surface Water Monitoring Plan											
SW-08-TT	04/17/09	206.90	0.5U	0.005	0.003U	--	--	6.5	0.48	0.05	0.48
	05/12/09	126.00	0.5U	0.005	0.003U	--	--	5U	0.42	0.09	0.58
	06/02/09	108.51	0.5U	0.007	0.0026J	--	--	5U	0.528	0.14	0.57
	07/15/09	143.70	0.5UJ	0.005	0.003	--	--	5U	0.186U	0.1	0.8
	08/05/09	142.17	0.5U	0.003	0.0023J	--	--	5U	0.203	033J	0.57
	09/02/09	6.39	0.5U	0.005	0.003	--	--	5U	0.258	0.08	0.4

Notes:

1 Flows are subject to revision pending review of accuracy of rating curves

USGS = United States Geologic Survey
cfs = cubic feet per second
µg/l = micrograms per liter
mg/l = milligrams per liter
TSS = Total Suspended Solids
TKN = Total Kjeldahl Nitrogen
NC = Not Calculated
-- = Sample not analyzed for this compound
U = Compound or sample not detected, value shown is reporting limit
J = Analyte concentration is below quantitation limit, but greater than or equal to 1/2 the laboratory detection limit. Value is estimated

Table 3
Relative Surface Water and Groundwater Elevations at Time of Baseflow Sampling
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

DRAFT

Station ID	Station Description	Date	Surface Water			Groundwater			Gradient
			Measuring Point[1] (ft)	Staff Gauge Reading (ft)	Surface Water Elevation[2] (ft)	Measuring Point[3] (ft)	Depth to Water (ft)	Groundwater Elevation[2] (ft)	
SW-01-TT	Halls Brook	09/02/09	92.98	1.00	93.98	96.87	5.65	91.22	Down
SW-2-IP	AAD	09/02/09	92.34	0.55	92.89	95.16	3.46	91.70	Down
SW-3-IP	BECO ROW	09/02/09	93.66	0.04	93.70	97.76	3.81	93.95	Up
SW-02-TT	HBHA Pond Outlet	09/24/09	97.77	0.86	98.63	103.88	5.19	98.69	Up
SW-03-TT	Aberjona	09/02/09	93.46	0.55	94.01	97.41	3.20	94.21	Up
SW-05-TT	Salem Street	09/02/09	94.16	1.18	95.34	98.23	2.91	95.32	Down
SW-06-TT	Montvale Avenue	09/02/09	92.76	1.58	94.34	98.48	4.01	94.47	Up
SW-07-TT	Swanton Street	09/02/09	90.11	1.00	91.11	93.87	2.50	91.37	Up
SW-08-TT	USGS / Mystic Avenue	09/24/09	81.29	10.40	91.69	95.28	3.58	91.70	Up

Notes:

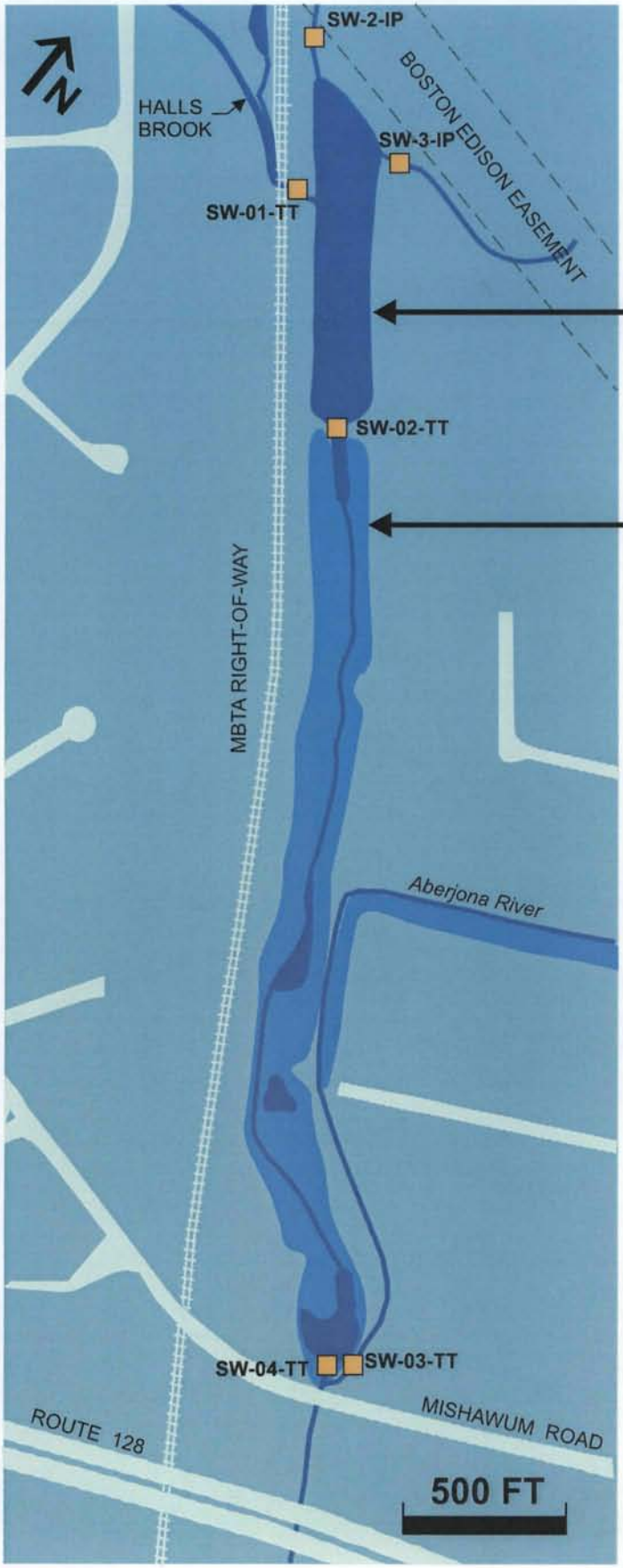
1 Reference point is base of gauge (0.00 feet), except for USGS; USGS gauge is referenced to mean sea level, which is 81.29 feet relative to station benchmark.

2 All elevations are relative to station-specific benchmarks and are, therefore not comparable between stations.

3 Reference point is top of casing

AAD = Atlantic Avenue Drainway
BECO ROW = Boston Edison Company right of way
HBHA = Halls Brook Holding Area
USGS = United States Geological Survey

FIGURES



LEGEND

SW-01-TT APPROXIMATE LOCATION AND DESIGNATION OF SURFACE WATER MONITORING STATION

DRAFT

Title:

SURFACE WATER MONITORING STATIONS NORTH OF ROUTE 128

Prepared for:

INDUSTRI-PLEX OU 2 SETTLING DEFENDANTS

ROUX ASSOCIATES INC. *Environmental consulting & Management*	Compiled by: LM	Date: 7/10/09	FIGURE	
	Prepared by: CRS	Scale: AS SHOWN	1	
	Project Mgr.: LM	Office: MA		
	File No.: IPS0114202	Project No.: 119407M07		

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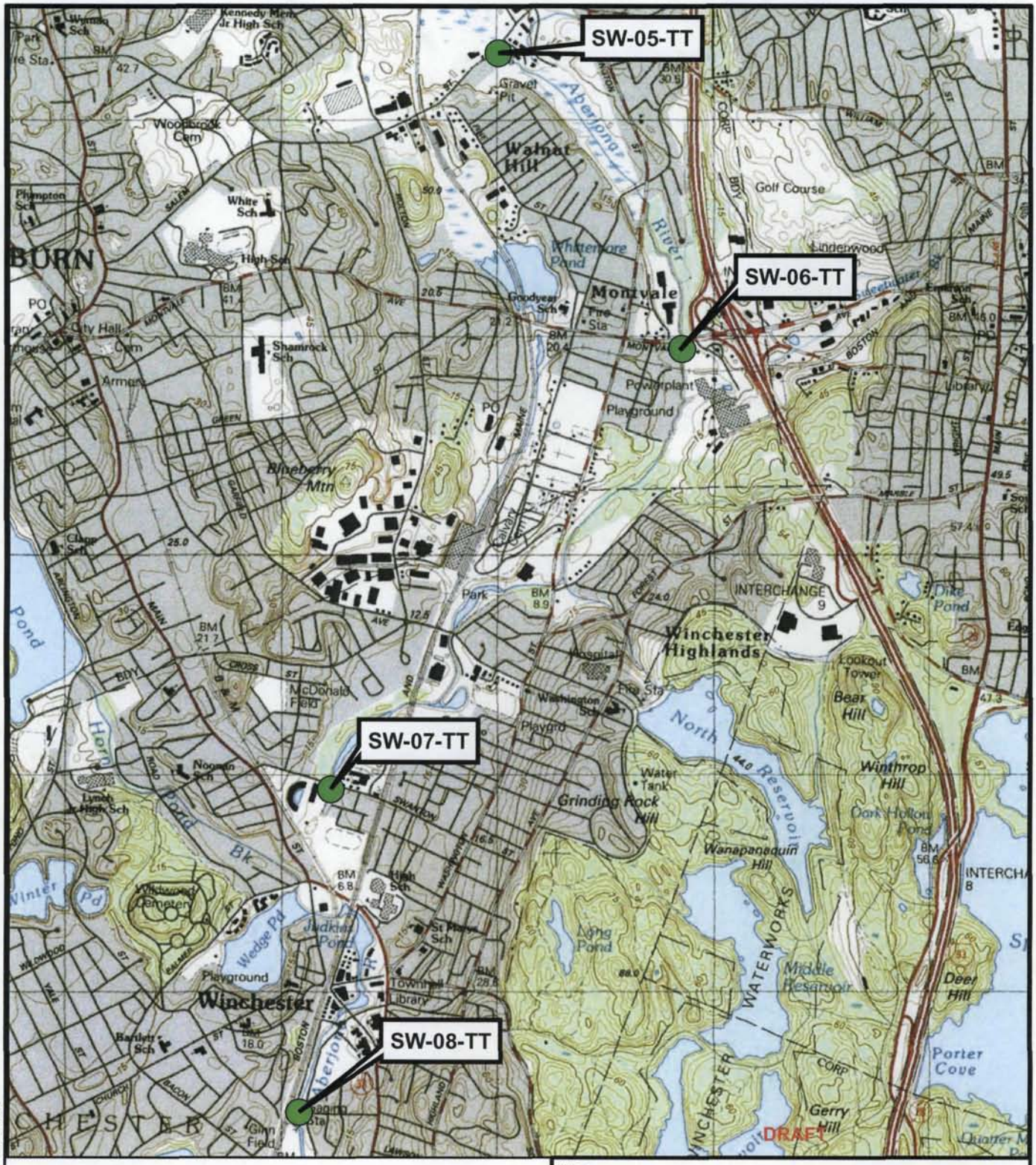

QUADRANGLE LOCATION

N

SOURCE:
USGS, 1987.
Reading (Massachusetts) Quadrangle
1:25,000-scale Topographic Map

0 1,000 2,000 Feet

Title:

SURFACE WATER MONITORING STATIONS SOUTH OF ROUTE 128

Prepared For:

INDUSTRI-PLEX OU 2 SETTLING DEFENDANTS

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled By: LM	Date: 7/10/09	FIGURE
Prepared By: CRS	Scale: AS SHOWN	2
Project Mgr.: LM	Office: MA	
File No.: IPS0114201	Project: 119401M	

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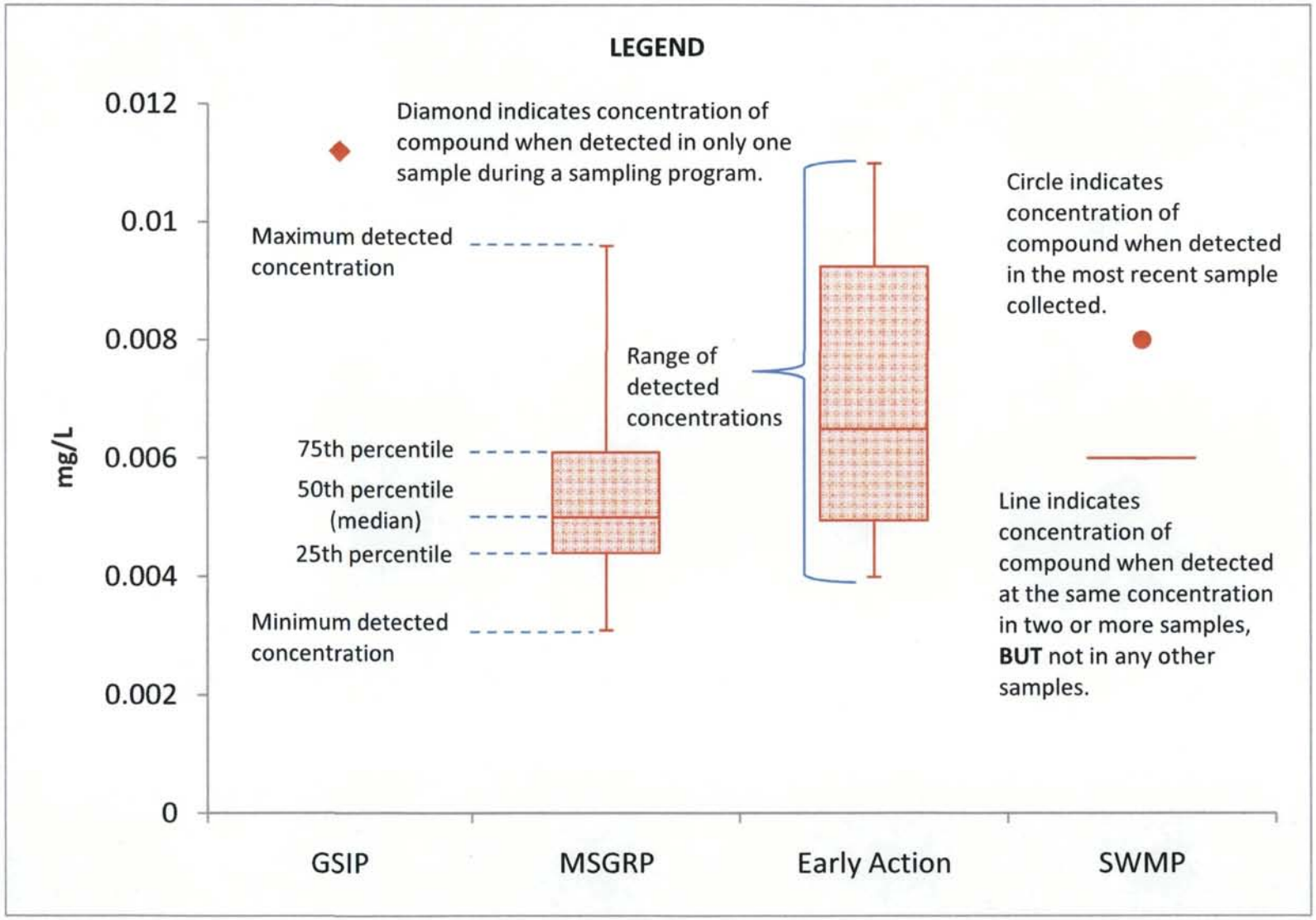
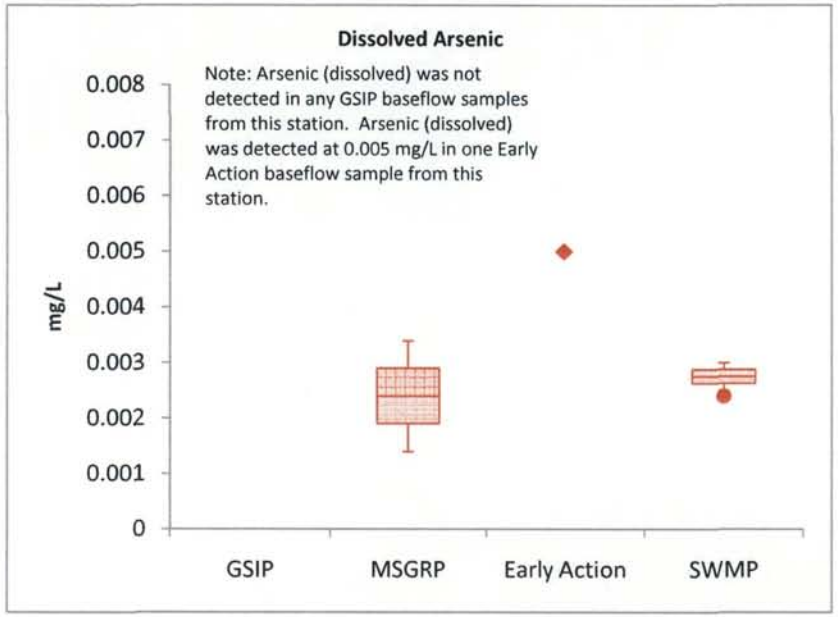
APPENDICES

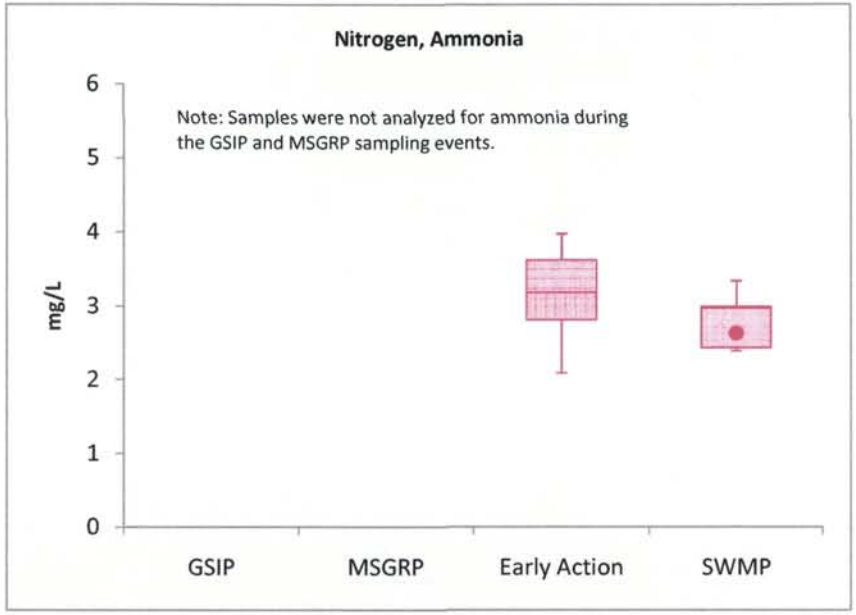
APPENDIX A

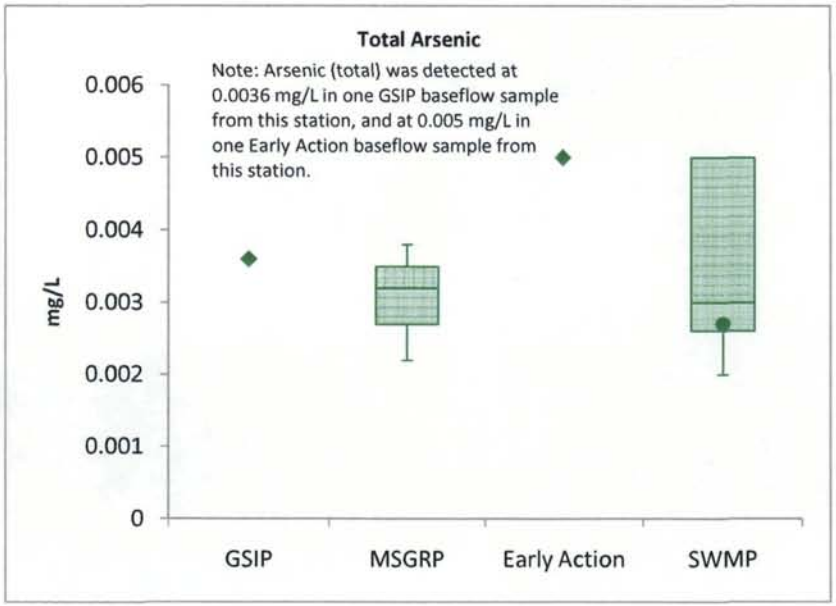
APPENDIX A

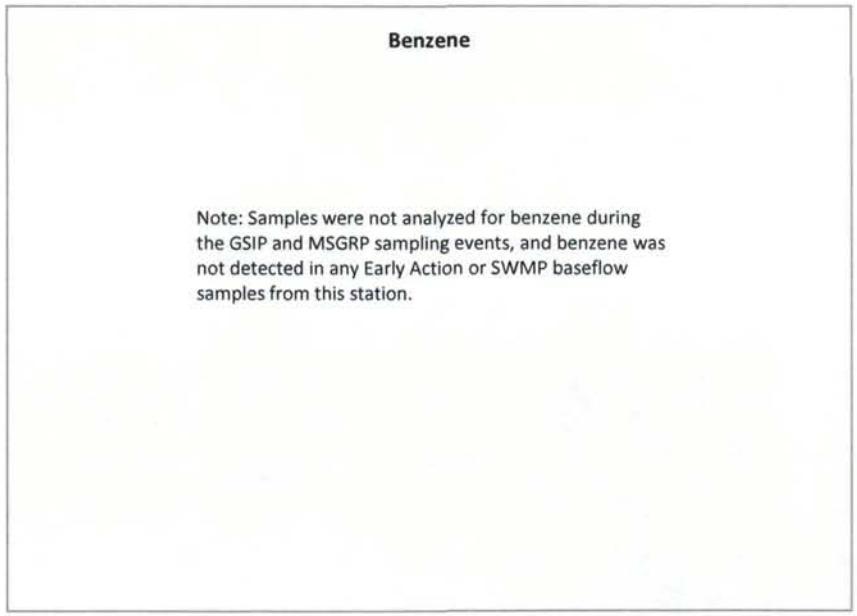
Storm Sampling Box-Whisker Plots

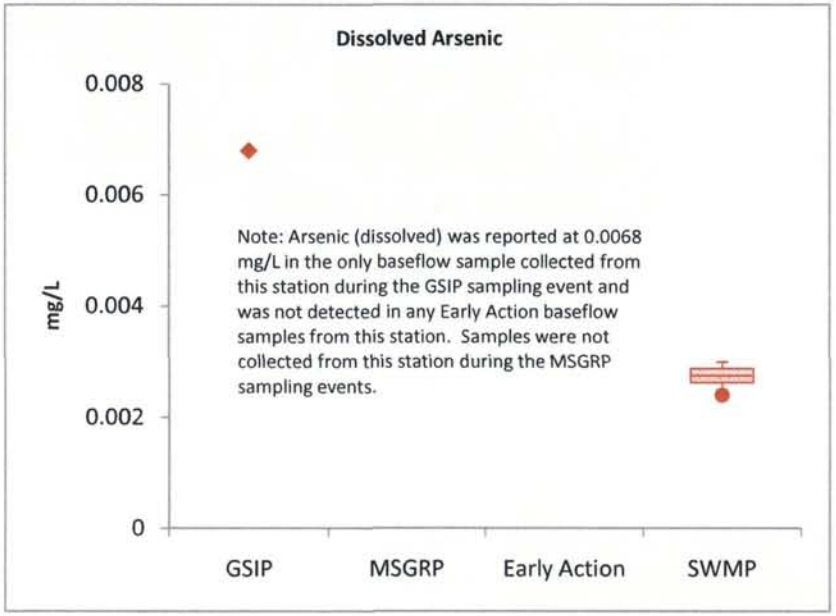

LEGEND
Diamond indicates concentration of compound when detected in only one sample during a sampling program.
Maximum detected concentration
Range of detected concentrations
75th percentile
50th percentile (median)
25th percentile
Minimum detected concentration
Circle indicates concentration of compound when detected in the most recent sample collected.
Line indicates concentration of compound when detected at the same concentration in two or more samples, BUT not in any other samples.
mg/L
0.012
0.01
0.008
0.006
0.004
0.002
0
GSIP
MSGRP
Early Action
SWMP

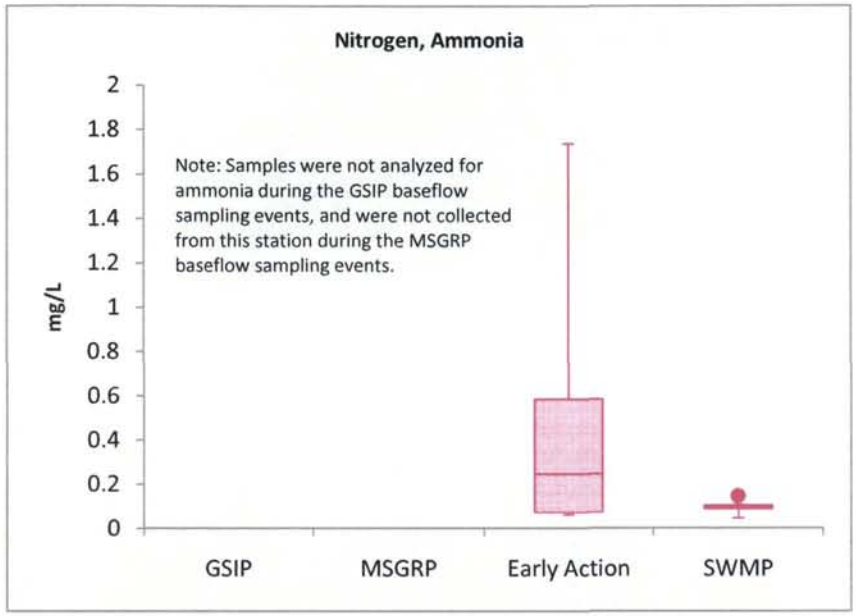

Dissolved Arsenic
Note: Arsenic (dissolved) was not detected in any GSIP baseflow samples from this station. Arsenic (dissolved) was detected at 0.005 mg/L in one Early Action baseflow sample from this station.
mg/L
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
GSIP
MSGRP
Early Action
SWMP

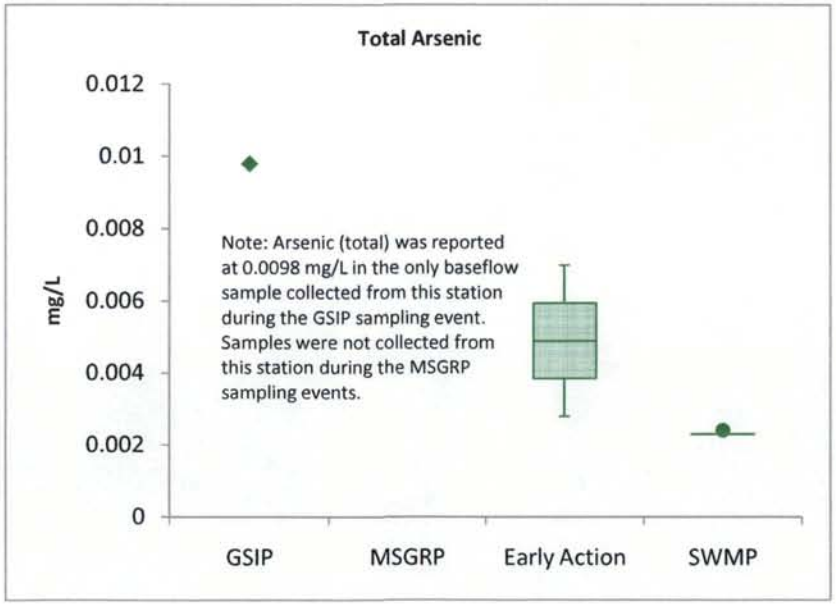

Nitrogen, Ammonia
Note: Samples were not analyzed for ammonia during the GSIP and MSGRP sampling events.
mg/L
6
5
4
3
2
1
0
GSIP
MSGRP
Early Action
SWMP

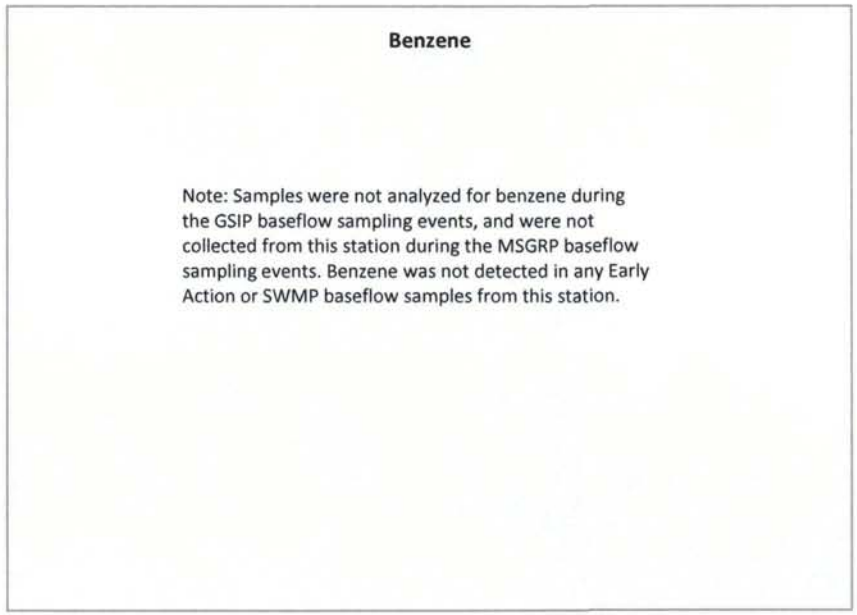

Total Arsenic
Note: Arsenic (total) was detected at 0.0036 mg/L in one GSIP baseflow sample from this station, and at 0.005 mg/L in one Early Action baseflow sample from this station.
mg/L
0.006
0.005
0.004
0.003
0.002
0.001
0
GSIP
MSGRP
Early Action
SWMP

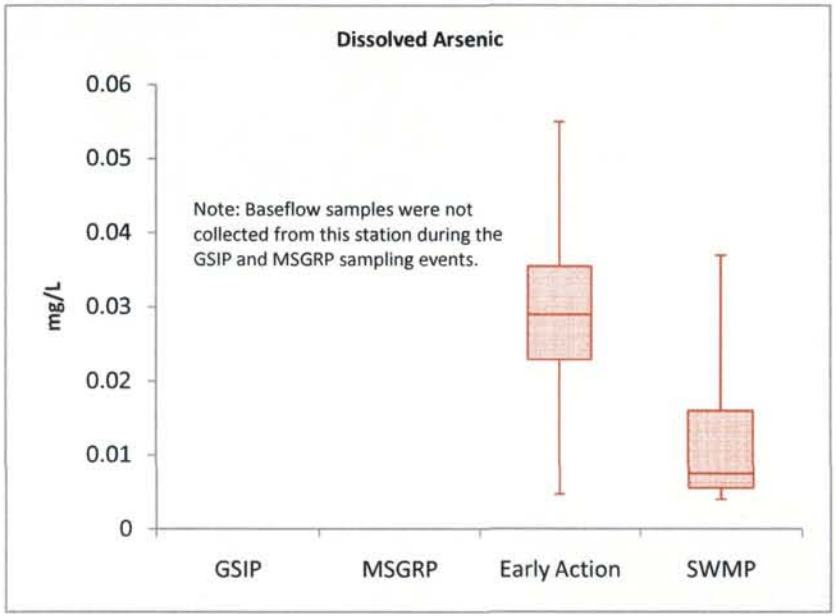

Benzene
Note: Samples were not analyzed for benzene during the GSIP and MSGRP sampling events, and benzene was not detected in any Early Action or SWMP baseflow samples from this station.

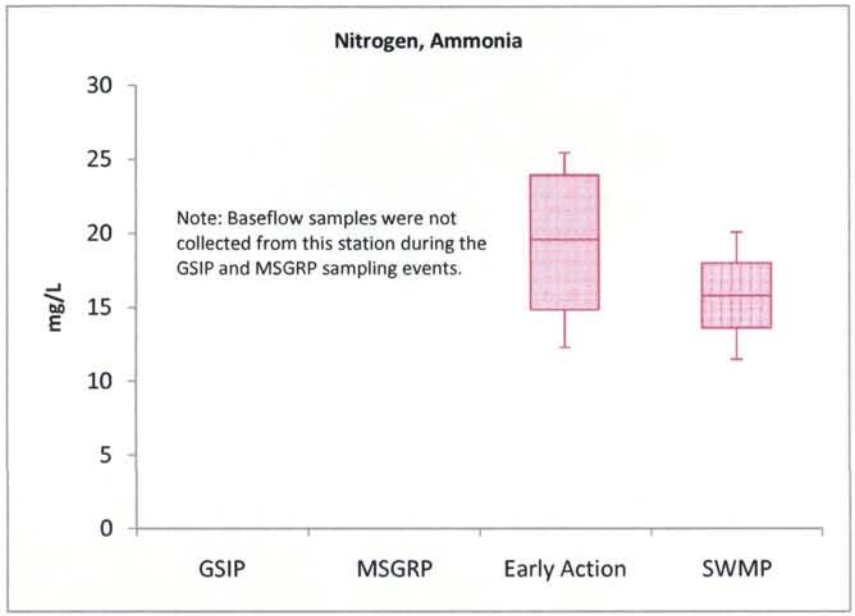

Dissolved Arsenic
0.008
0.006
0.004
0.002
0
mg/L
Note: Arsenic (dissolved) was reported at 0.0068 mg/L in the only baseflow sample collected from this station during the GSIP sampling event and was not detected in any Early Action baseflow samples from this station. Samples were not collected from this station during the MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

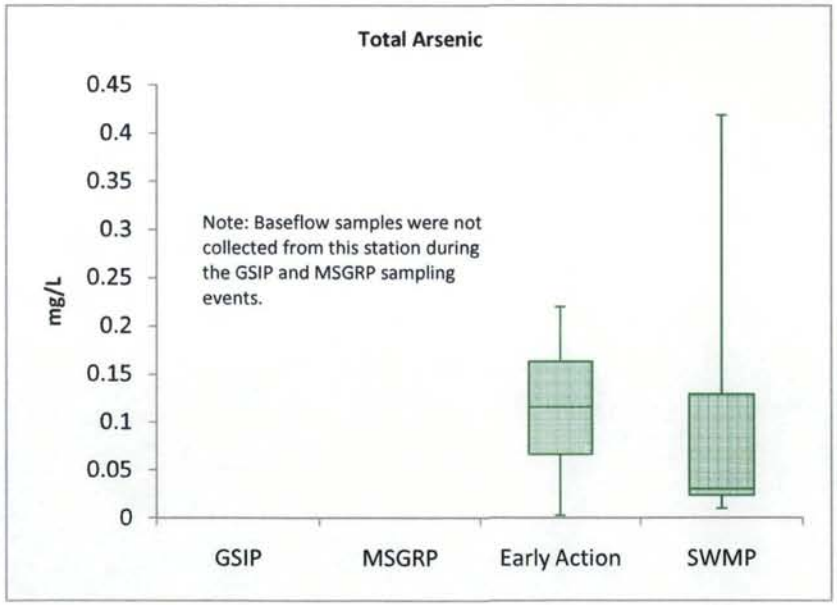

Nitrogen, Ammonia
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
mg/L
Note: Samples were not analyzed for ammonia during the GSIP baseflow sampling events, and were not collected from this station during the MSGRP baseflow sampling events.
GSIP
MSGRP
Early Action
SWMP

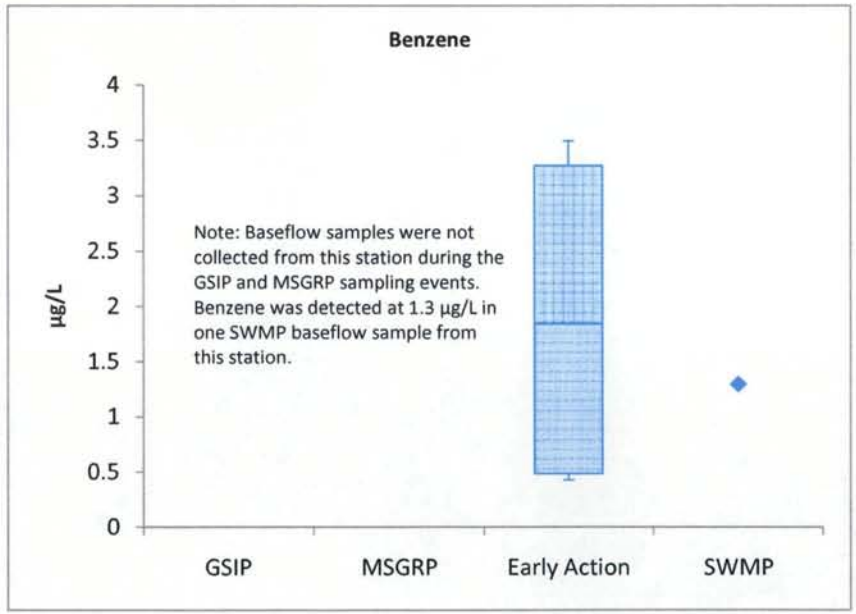

Total Arsenic
0.012
0.01
0.008
0.006
0.004
0.002
0
mg/L
Note: Arsenic (total) was reported at 0.0098 mg/L in the only baseflow sample collected from this station during the GSIP sampling event. Samples were not collected from this station during the MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

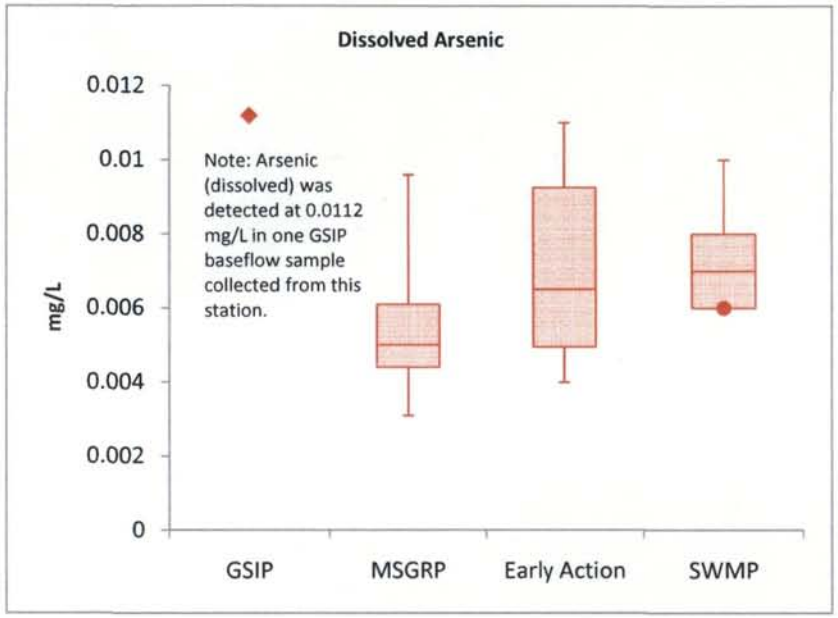

Benzene
Note: Samples were not analyzed for benzene during the GSIP baseflow sampling events, and were not collected from this station during the MSGRP baseflow sampling events. Benzene was not detected in any Early Action or SWMP baseflow samples from this station.

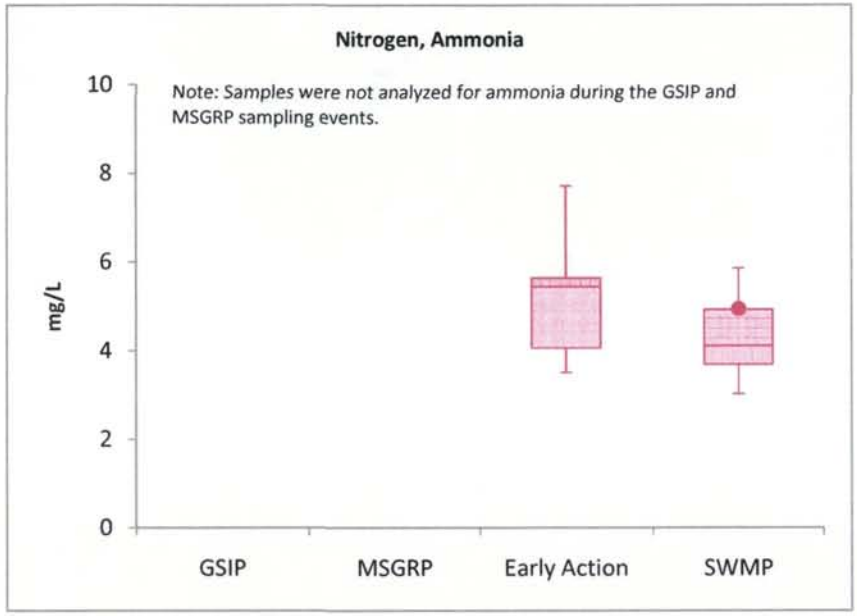

Dissolved Arsenic
mg/L
0.06
0.05
0.04
0.03
0.02
0.01
0
Note: Baseflow samples were not collected from this station during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

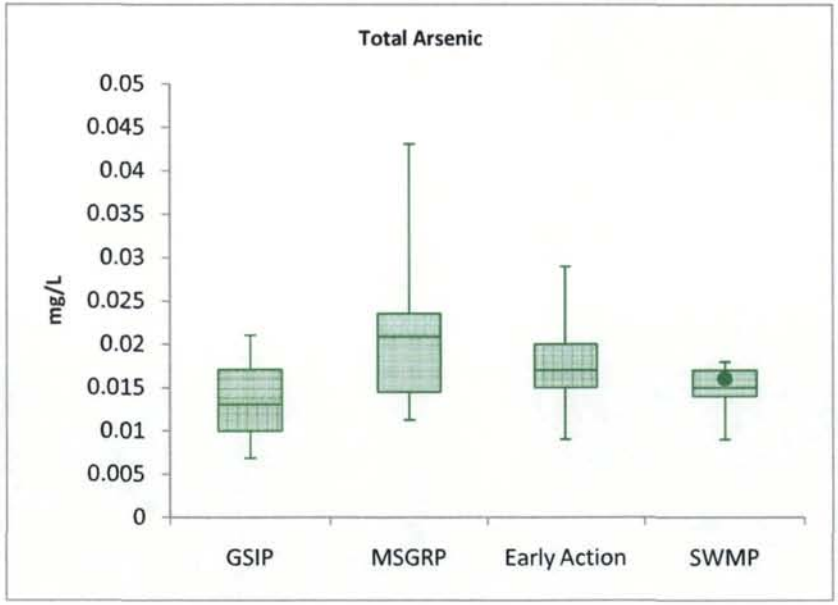

Nitrogen, Ammonia
mg/L
30
25
20
15
10
5
0
Note: Baseflow samples were not collected from this station during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

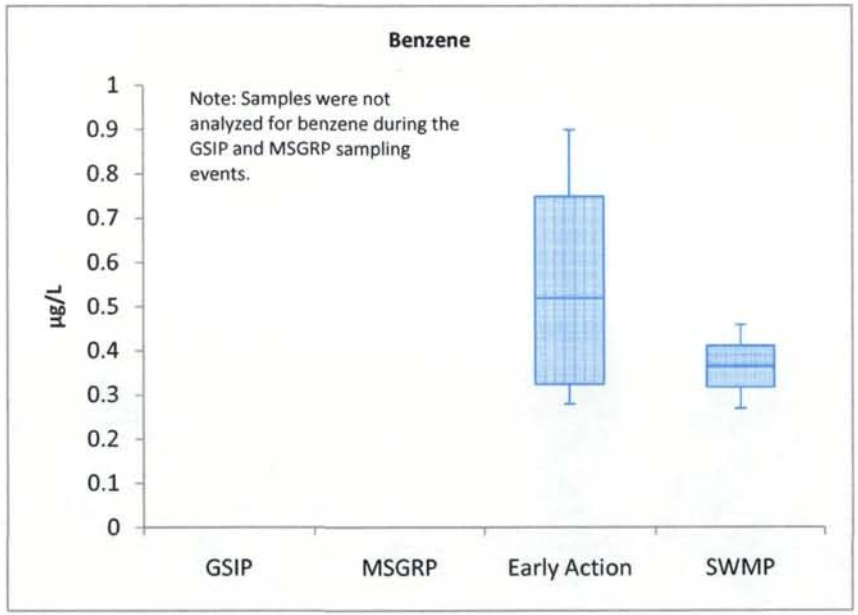

Total Arsenic
mg/L
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Note: Baseflow samples were not collected from this station during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

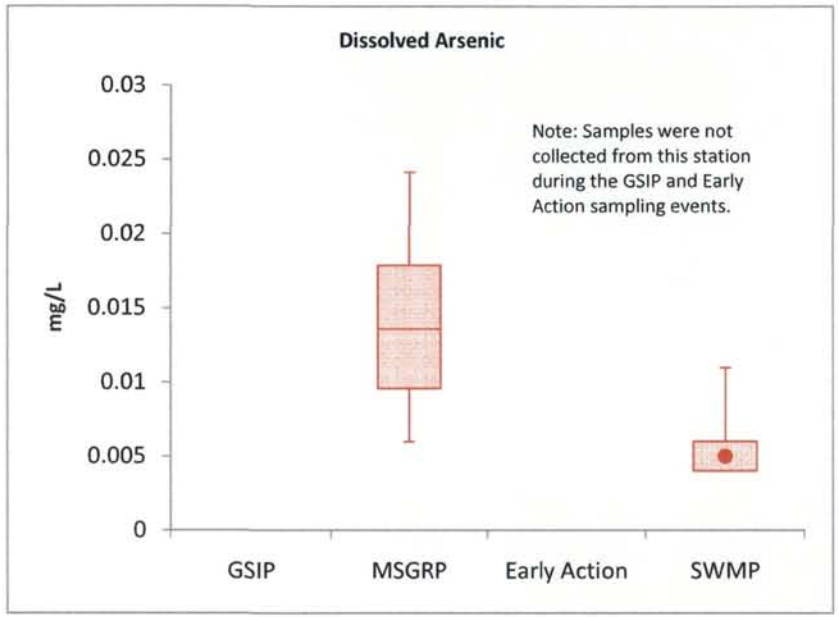

Benzene
µg/L
4
3.5
3
2.5
2
1.5
1
0.5
0
Note: Baseflow samples were not collected from this station during the GSIP and MSGRP sampling events. Benzene was detected at 1.3 µg/L in one SWMP baseflow sample from this station.
GSIP
MSGRP
Early Action
SWMP

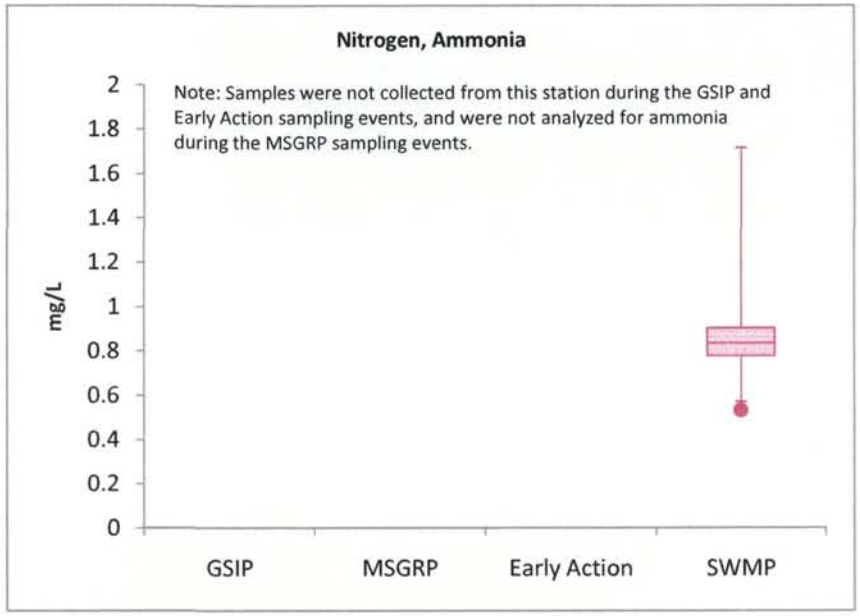

Dissolved Arsenic
0.012
0.01
0.008
0.006
0.004
0.002
0
mg/L
Note: Arsenic (dissolved) was detected at 0.0112 mg/L in one GSIP baseflow sample collected from this station.
GSIP
MSGRP
Early Action
SWMP

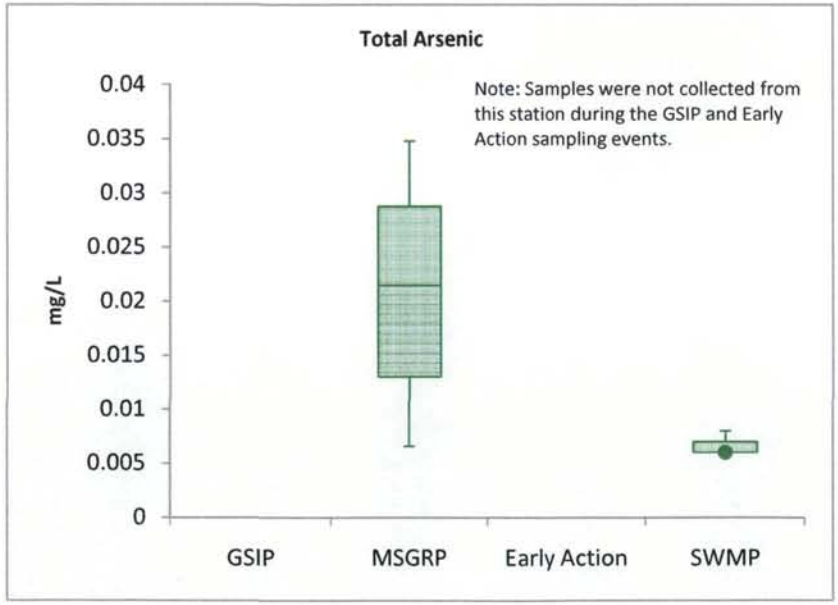

Nitrogen, Ammonia
10
8
6
4
2
0
mg/L
Note: Samples were not analyzed for ammonia during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP


Total Arsenic
0.05
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
mg/L
GSIP
MSGRP
Early Action
SWMP

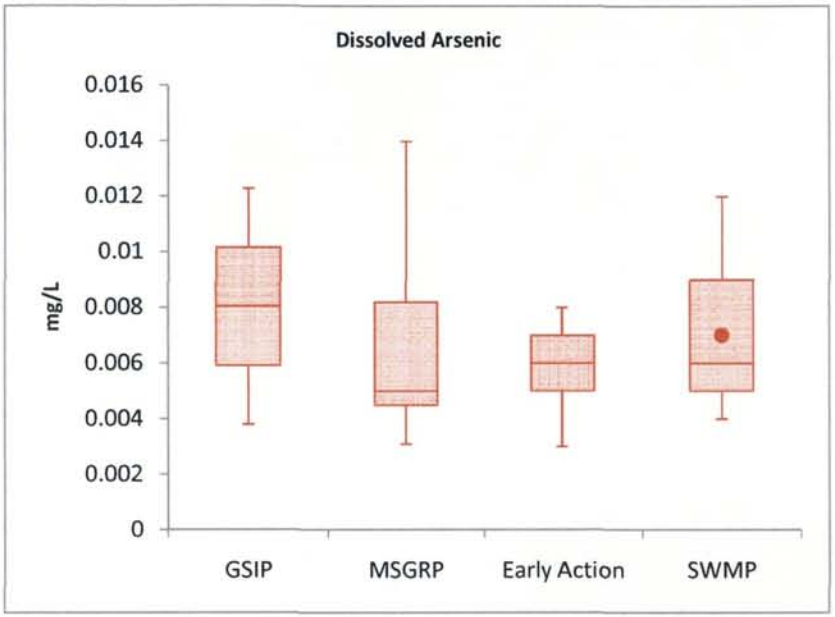

Benzene
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
µg/L
Note: Samples were not analyzed for benzene during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

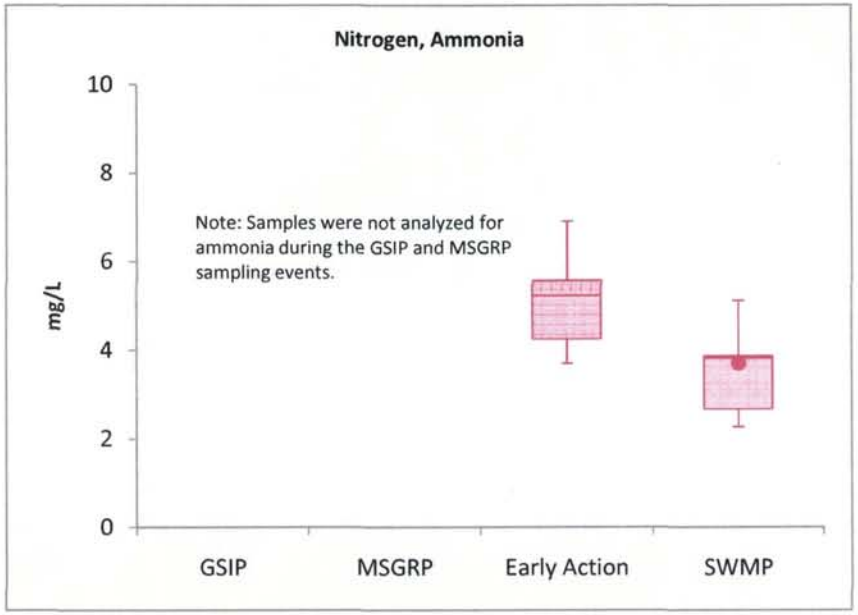


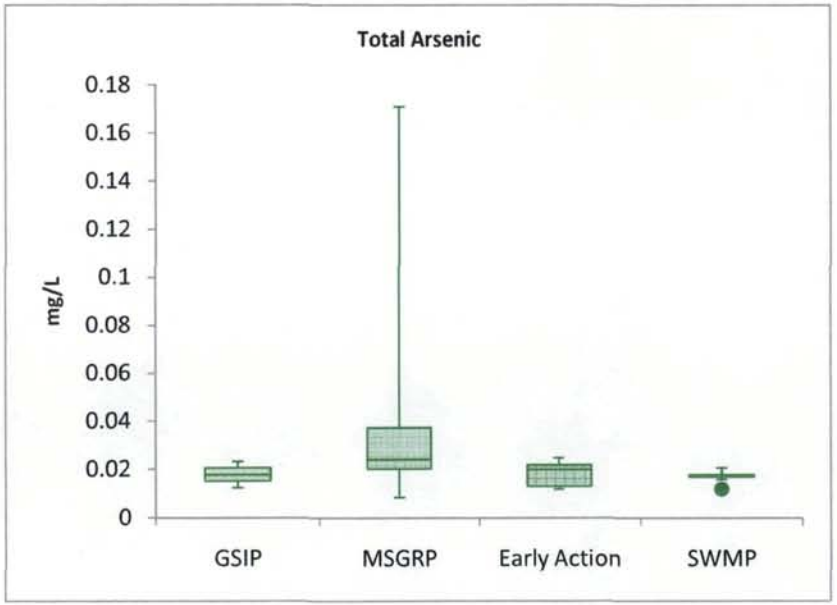


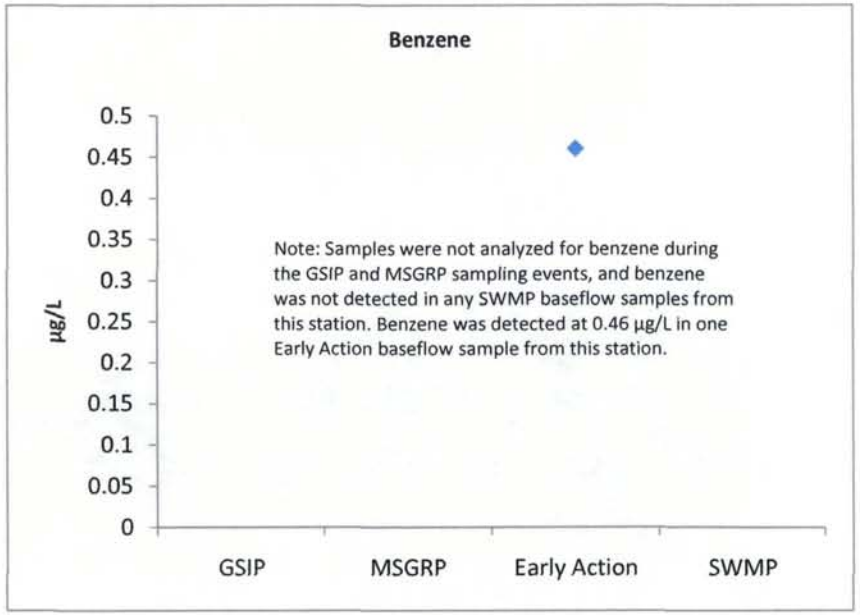


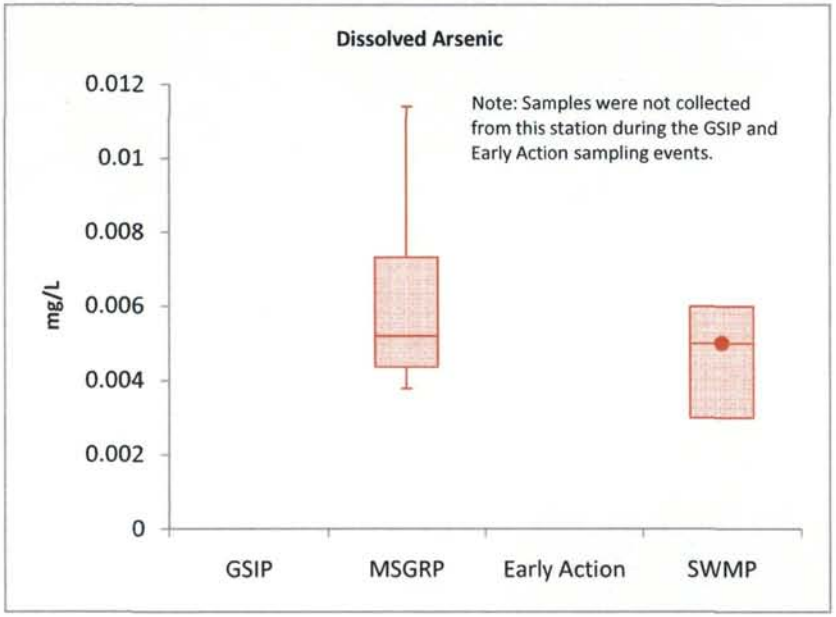
Note: Samples were not collected from this station during the GSIP and Early Action sampling events, and were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples collected from this station.

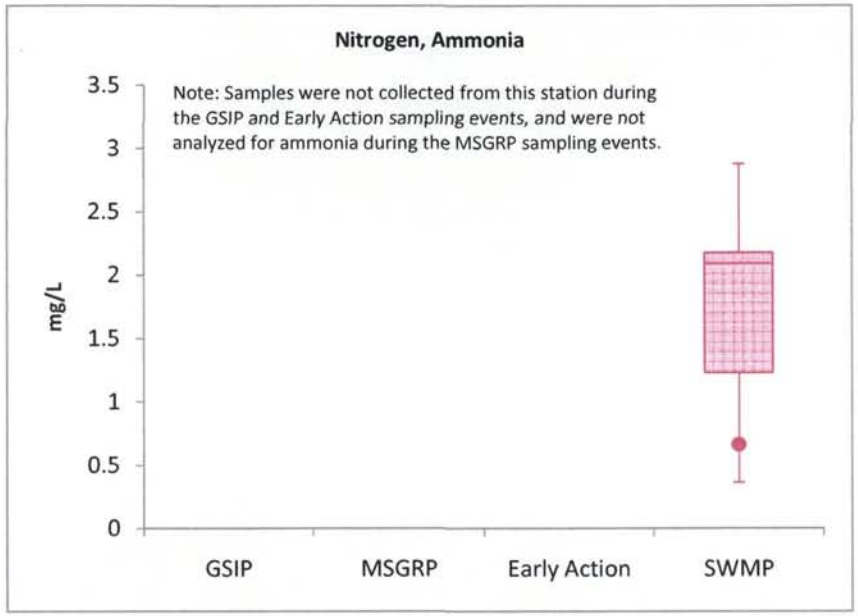

Dissolved Arsenic
mg/L
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
GSIP
MSGRP
Early Action
SWMP

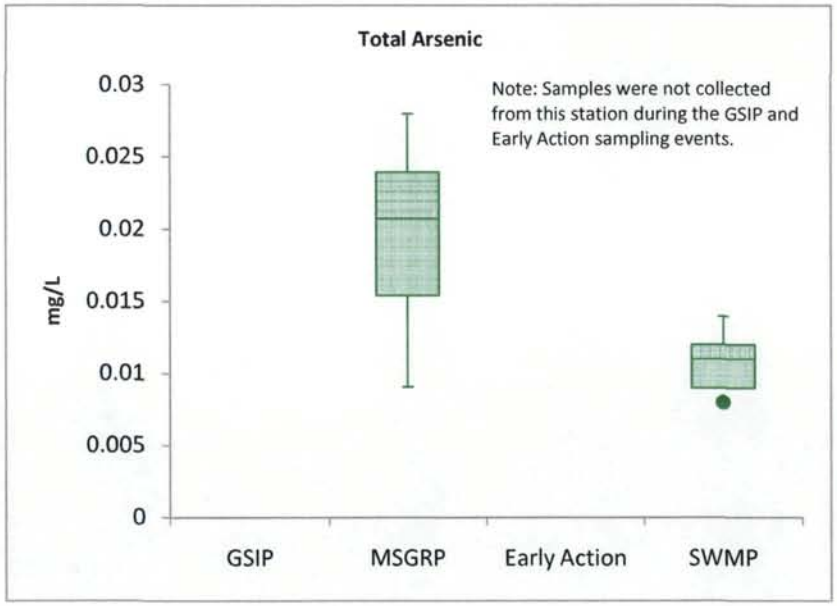

Nitrogen, Ammonia
mg/L
10
8
6
4
2
0
Note: Samples were not analyzed for ammonia during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP


Total Arsenic
mg/L
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
GSIP
MSGRP
Early Action
SWMP

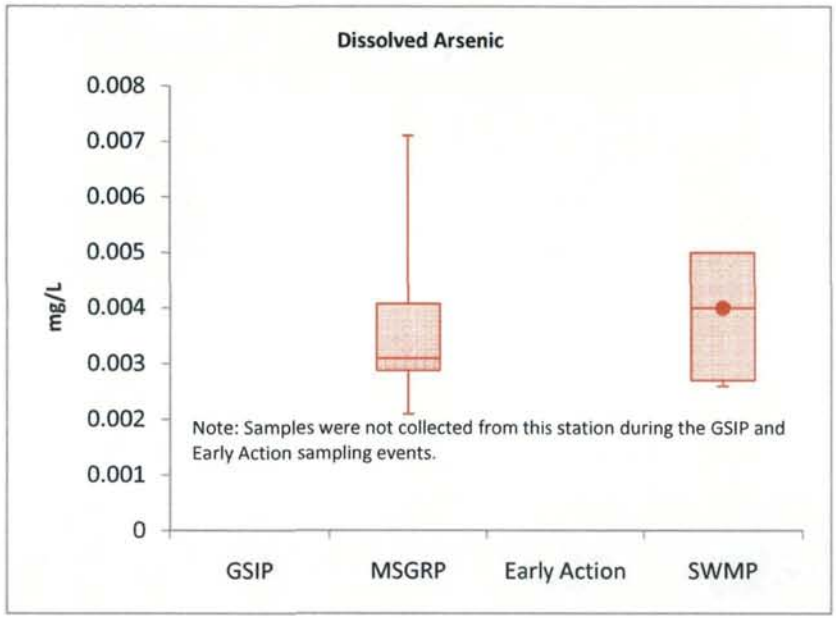

Benzene
µg/L
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Note: Samples were not analyzed for benzene during the GSIP and MSGRP sampling events, and benzene was not detected in any SWMP baseflow samples from this station. Benzene was detected at 0.46 µg/L in one Early Action baseflow sample from this station.
GSIP
MSGRP
Early Action
SWMP

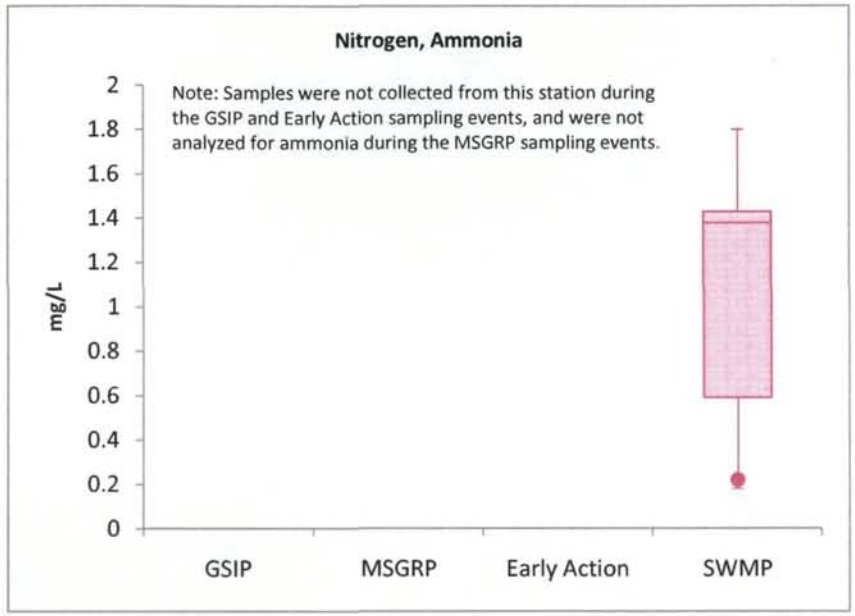


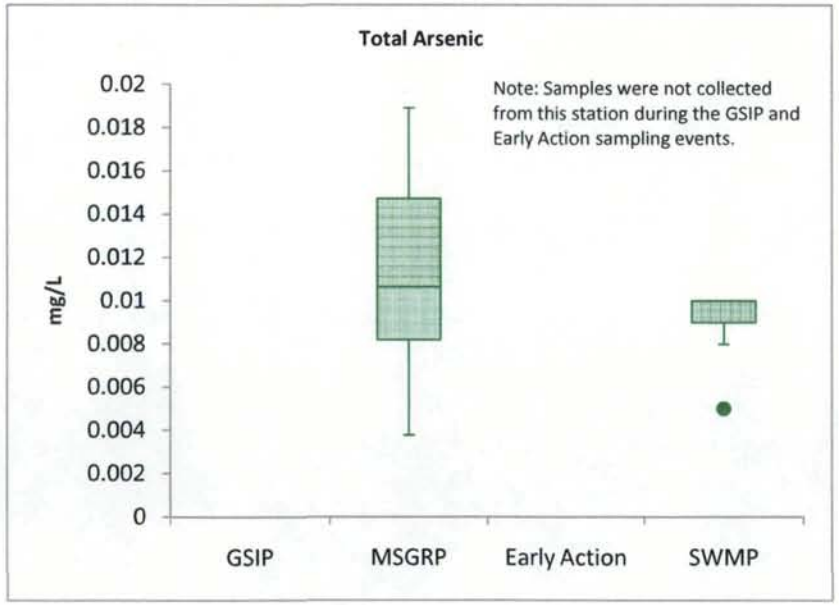




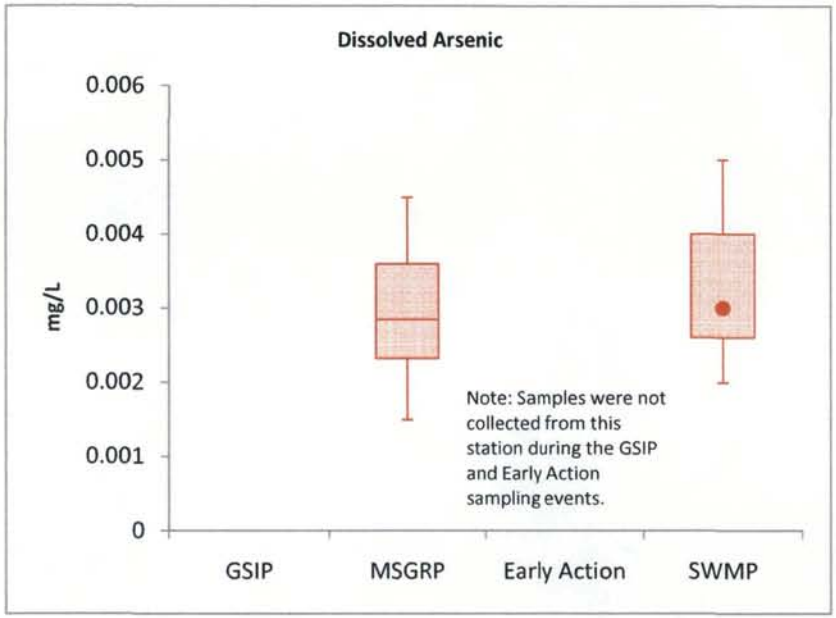
Note: Samples were not collected from this station during the GSIP and Early Action sampling events, and were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples from this station.

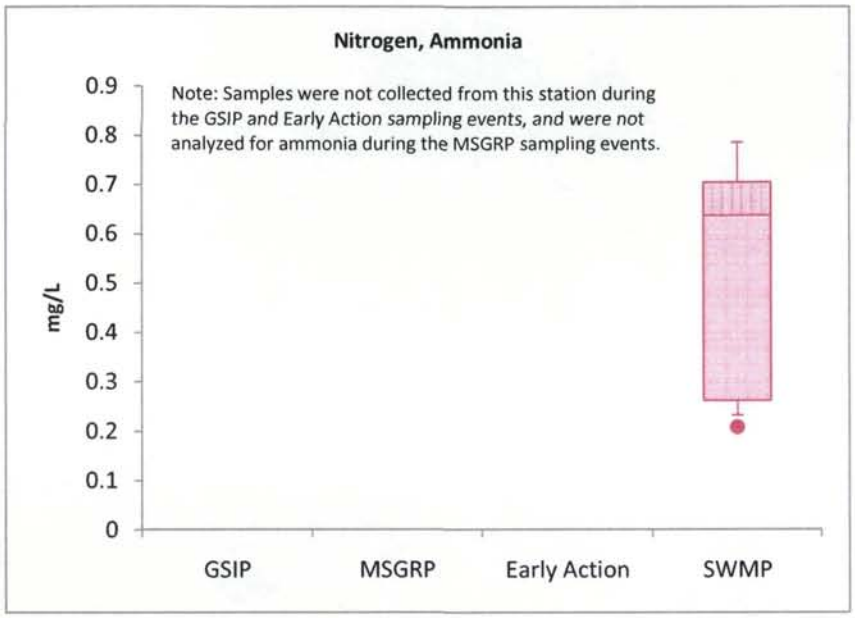


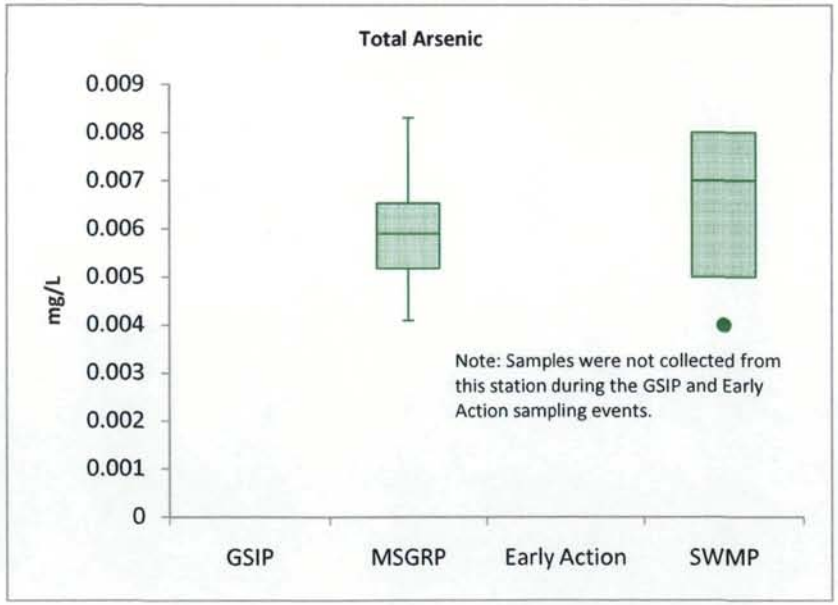




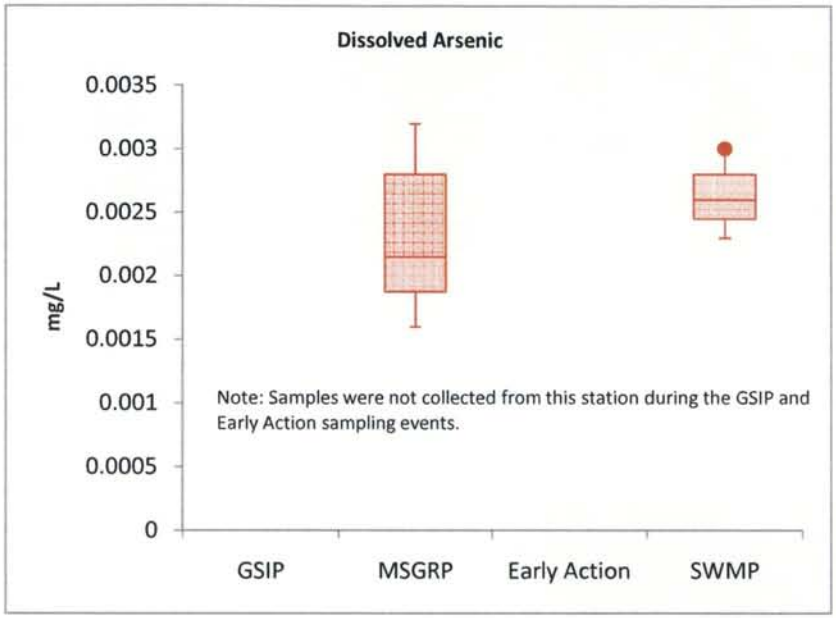
Note: Samples were not collected from this station during the GSIP and Early Action sampling events, and were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples from this station.

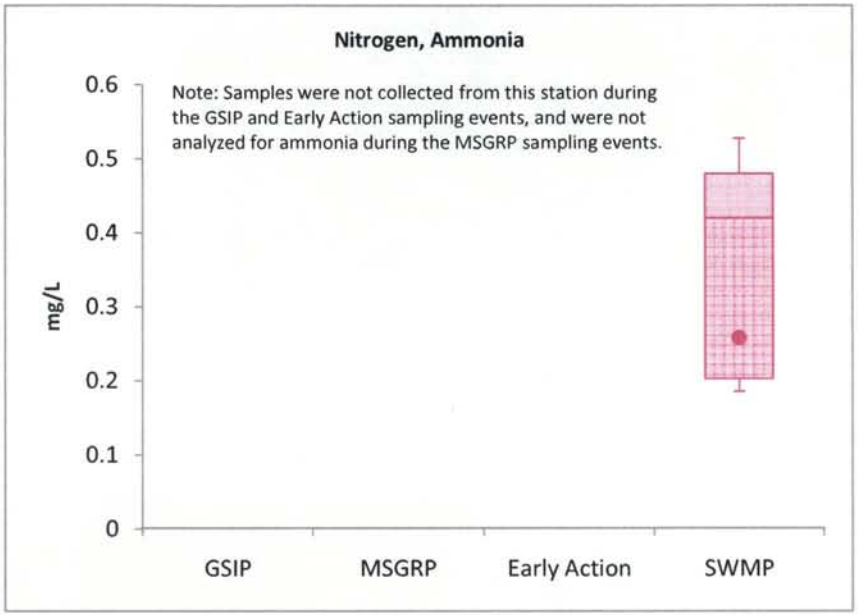


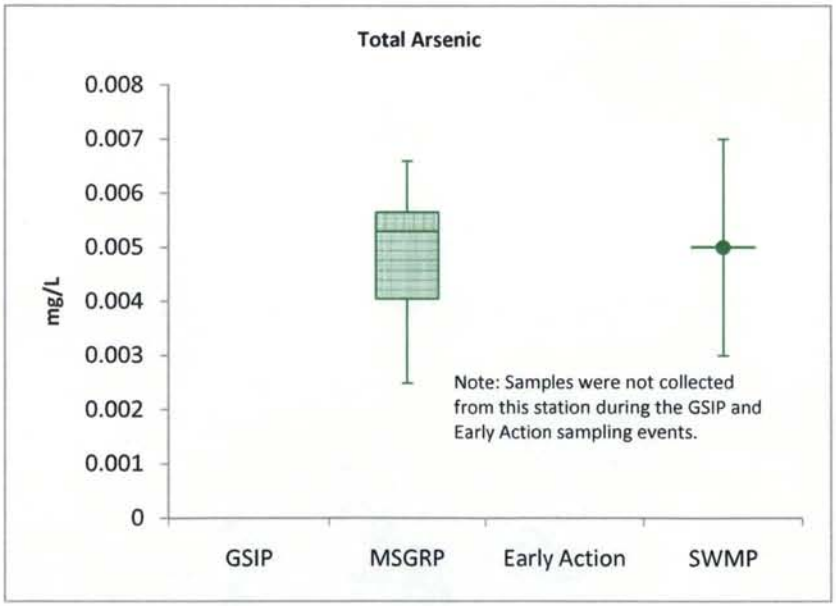




Note: Samples were not collected from this station during the GSIP and Early Action sampling events. Samples were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples from this station.







Note: Samples were not collected from this station during the GSIP and Early Action sampling events, and were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples from this station.

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-01-TT
Halls Brook

Inspector: Emmons, Bergeron

Date: 9/3/09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 47485

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11294	**pH** s.u.	7.01	7.11	+/- 0.5 pH unit	P / F	Y / N
DX05844	**DO** mg/l	9.40	10.15	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11294	**ORP** mV	200	228	+/- 10 mV	P / F	Y / N
TB03991	**Turb.** NTU	0.0	-0.6	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05331	**Sp. Cond.** mS/cm	1413	1386	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7 4 10	NA	+/- 0.1 pH unit (for pH 7)	P / F NA		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
DO mg/l	9.19	9.403	+/- 0.3 mg/l of sat value	P / F	21.04 2	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	24.50	Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .70 ft

Signal Strength: 2 %

Stage reading from staff gauge: .80 ft

Spectrum Strength: 95 %

Stage reading from ISCO: .695 ft

Voltage reading from solar panels: 12.80 V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: 12.61/12.62 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: .305 cfs

ISCO stream velocity reading: .810 cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-IP Atlantic Ave

Inspector: Emmons Bergeron

Date: 9/3/09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 47350

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11670 **pH** s.u.	7.01	7.03	+/- 0.5 pH unit	P / F	Y / N
DX05483 **DO** mg/l	9.24	9.36	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11670 **ORP** mV	200	217	+/- 10 mV	P / F	Y / N
TB03937 **Turb.** NTU	0.0	-0.1	+/- 2 NTU	P / F	Y / N
Temp. °C			~~+/- 0.5 °C~~	~~P / F~~	Annually Only
LC05252 **Sp. Cond.** mS/cm	1413	1465	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7 4 10	NA	+/- 0.1 pH unit (for pH 7)	P / F NA		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	10.37	Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 0.54 ft

Signal Strength: 0 %

Stage reading from staff gauge: 0.54 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 0.433 ft

Voltage reading from solar panels: 12.80 V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: 12.76 / 12.76 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

ISCO stream velocity reading: 0.25 cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N

(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-IP
BECO

Inspector: Emmons Bengson

Date: 9/3/09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 48358

BECO was dry

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10925 **pH** s.u.	7.01	6.95	+/- 0.5 pH unit	P / F	Y / N
DX05465 **DO** mg/l	8.651	8.353	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10925 **ORP** mV	200	196	+/- 10 mV	P / F	Y / N
TB04476 **Turb.** NTU	0.0	-0.9	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
CC05266 **Sp. Cond.** mS/cm	1413	1493	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 0 ft

Signal Strength: 0 %

Stage reading from staff gauge: 0 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 0 ft

Voltage reading from solar panels: 12.54 V

Stage reading reset to (if +/- 0.1): ft

Voltage reading from batteries: 12.49 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: Dry cfs

ISCO stream velocity reading: Dry cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-TT
Pond outlet

Inspector: Emmons, Bergeron, Forgey

Date: 9/2/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 47353

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	7.01	6.99	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	7.31	7.54	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	212	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.9	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1583	+/- 15%	P / F	Y / N

PP 10 928
DK05743
PP10928
TB03968
LC05293
LC05261

1483 1457

LC05261 Kcell 0.2928

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	6.38	Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1468	+/- 10%	P / F	0.2928	K cell value 0.32 to 0.39	P / F	Y / N *

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 0.71 ft (insert)

Signal Strength: 0 %

Stage reading from staff gauge: 0.90 ft

Spectrum Strength: 82 %

Stage reading from ISCO: 0.73 ft

Voltage reading from solar panels: 12.92 V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: 12.71 / 12.73 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Manual (Marsh-McBirney) stream velocity reading: 0.26 ~~cfs~~ ft/s

Color of 750 Dessicant: blue / pink / yellow / green

ISCO stream velocity reading: 0.885 cfs

750 Dessicant replaced? Y / N

6712 Humidy Indicator: blue / pink / white

SDI-12 Dessicant Color: blue / pink

20 / 30 / 40

SDI-12 Dessicant Replaced? Y / N

6712 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes: * Spec. Cond sensor needs replacing

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-TT
Aberjona

Inspector: Emmons Bergeron + Forgey

Date: 9/3/09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 47486

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u. (PP11061)	7.01	7.09	+/- 0.5 pH unit	P / F	Y / N
DO mg/l (DK0539)	8.38	8.35	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV (PP11061)	200	229	+/- 10 mV	P / F	Y / N
Turb. NTU (TB03993)	0.0	0.9	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm (CC05760)	1413	1561	+/- 15%	P / F	Y / N

10.4

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	5.23	Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .40 ft

Signal Strength: 0 %

Stage reading from staff gauge: .38 ft

Spectrum Strength: 46 %

Stage reading from ISCO: .428 ft

Voltage reading from solar panels: 13.42 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.36 / 13.36 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

ISCO stream velocity reading: _____ cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-04 TT
Mishawum

Inspector: Emmons Bergeron, Forgey

Date: 9/3/09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 48168

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
DP11735	**pH** s.u.	7.01	7.08	+/- 0.5 pH unit	P / F	Y / N
	DO mg/l			+/- 0.7 mg/l of sat value	P / F	Y / N
PP11735	**ORP** mV	200	224	+/- 10 mV	P / F	Y / N
TB04505	**Turb.** NTU	0.0	0.9	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05769	**Sp. Cond.** mS/cm	1413	1583	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	6.51	Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .68 ft

Signal Strength: ~~12.62~~ 19 %

Stage reading from staff gauge: .74 ft

Spectrum Strength: ~~12~~ 69 %

Stage reading from ISCO: .63 ft

Voltage reading from solar panels: 12.62 V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: 12.57 / 12.58 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Manual (Marsh-McBirney) stream velocity reading: 2.38 fps

Color of 750 Dessicant: blue / pink / yellow / green

ISCO stream velocity reading: 6.47 cfs

750 Dessicant replaced? Y / N

6712 Humidy Indicator: blue / pink / white

SDI-12 Dessicant Color: blue / pink

20 / 30 / 40

SDI-12 Dessicant Replaced? Y / N

6712 Dessicant Replaced? ~~Y~~ N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-05 - SALEM

Inspector: GLENN TAN MARK

Date: 9-3-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 47351

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10929 **pH** s.u.	7.01	7.10	+/- 0.5 pH unit	P / F	Y / N
DX058860 **DO** mg/l	8.28	0.452	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10929 **ORP** mV	200	187	+/- 10 mV	P / F	Y / N
TB 03966 **Turb.** NTU	0.0	-0.8	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05211 **Sp. Cond.** mS/cm	1413	1600	+/- 15%	P / F	Y / N

- Kcell 0.3126

13

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l	8.29	8.49	+/- 0.3 mg/l of sat value	P / F	26.85	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	-2.94	Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.63 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.28 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 1.127 ft

Voltage reading from solar panels: 11.88 V

Stage reading reset to (if +/- 0.1): YES ft

Voltage reading from batteries: 11.80 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: 3.00 cfs

ISCO stream velocity reading: 3.088 cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-06
MONTVALE

Inspector: GLENN TAN MARK

Date: 9-3-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 47482

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u. (PP11065)	7.04	7.06	+/- 0.5 pH unit	P / F	Y / N
DO mg/l (DK05565)	8.66	9.27	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV (PP11065)	200	197	+/- 10 mV	P / F	Y / N
Turb. NTU (TB04003)	0.0	-0.6	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm (LC05347)	1413	1543	+/- 15%	P / F	Y / N

364 nAmps

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.79 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.50 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 1.161 ft

Voltage reading from solar panels: 12.02 V

Stage reading reset to (if +/- 0.1): YES ft

Voltage reading from batteries: 12.00 / 12.00 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: 0.50 cfs

ISCO stream velocity reading: 0.00 cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes: D.O. sensor getting close to be replaced

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-07- TT
SWANTON

Inspector: MARK JAN GLENN

Date: 8-3-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 48344

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10921 pH s.u.	7.01	7.07	+/- 0.5 pH unit	P / F	Y / N
DX05445 DO mg/l	8.37	26.00	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10921 ORP mV	200	195	+/- 10 mV	P / F	Y / N
TB04434 Turb. NTU	0.0	-0.3	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05250 Sp. Cond. mS/cm	1413	1537	+/- 15%	P / F	Y / N

645 nAmp won't recalibrate

D.O replaced DX05443

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l	8.437	8.55	+/- 0.3 mg/l of sat value	P / F	26.392	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.30 ft

Signal Strength: 31 %

Stage reading from staff gauge: .98 ft

Spectrum Strength: Error %

Stage reading from ISCO: 1.356 ft

Voltage reading from solar panels: 13.35 V

Stage reading reset to (if +/- 0.1): No ft

Voltage reading from batteries: 13.30 V

Monthly O&M

Solar panels cleaned and inspected?	Y / N	**750 Module** *(replace dessicant if velocity reading is +/- 2% of Isco reading)*	
Manual (Marsh-McBirney) stream velocity reading:	30.20 cfs	Color of 750 Dessicant:	blue / pink / yellow / green
ISCO stream velocity reading:	27.80 cfs	750 Dessicant replaced?	Y / N
6712 Humidy Indicator:	blue / pink / white	SDI-12 Dessicant Color:	blue / pink
	20 / 30 / 40	SDI-12 Dessicant Replaced?	Y / N
6712 Dessicant Replaced?	Y / N	Clean A/V sensor transducer? (January / April / July / October)	Y / N

Notes: replaced D.O. sensor DX05445 with DX05443

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-08-TT USGS

Inspector: Emmons, Benjamin, & Forgey

Date: 9/3/09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 42352

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10927	pH s.u.	7.01	7.03	+/- 0.5 pH unit	P / F	Y / N
DY05433	DO mg/l	8.51	8.58	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10927	ORP mV	200	199	+/- 10 mV	P / F	Y / N
TB0397	Turb. NTU	0.0	0.2	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
CC05679	Sp. Cond. mS/cm	1413	1518	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .53 ft

Signal Strength: 0 %

Stage reading from staff gauge: ~~[illegible]~~ ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .503 ft

Voltage reading from solar panels: 12.91 V

Stage reading reset to (if +/- 0.1): ____ ft

Voltage reading from batteries: 12.83 / 12.84 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: 6.080 cfs

ISCO stream velocity reading: 6.151 cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-01-77
HB

Inspector: GLENN IAN MARK

Date: 9-10-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 47485

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11294	**pH** s.u.	7.0	7.18	+/- 0.5 pH unit	P / F	Y / N
DX05844	**DO** mg/l	8.52	9.9	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11294	**ORP** mV	200	202	+/- 10 mV	P / F	Y / N
TB03991	**Turb.** NTU	0.0	-0.7	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05331	**Sp. Cond.** mS/cm	1413	1236	+/- 15%	P / F	Y / N

1202 → 1625

Calibration confirmation of In-Situ Troll:

		Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
	pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
		4	NA		NA				
		10							
Sat of Air	**DO** mg/l	9.92	10.1	+/- 0.3 mg/l of sat value	P / F	21.04	Slope 15 to 34 Off set 2	P / F	Y / N
	ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
	Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
	Temp. °C			NA	P / F		NA	NA	Y / N
	Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .60 ft

Signal Strength: 0 %

Stage reading from staff gauge: .84 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .531 ft

Voltage reading from solar panels: 12.63 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 12.60 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

Color of 750 Dessicant: blue / pink / yellow / green

ISCO stream velocity reading: _____ cfs

750 Dessicant replaced? Y / N

6712 Humidy Indicator: blue / pink / white

SDI-12 Dessicant Color: blue / pink

20 / 30 / 40

SDI-12 Dessicant Replaced? Y / N

6712 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02 ~~IP~~ AAD

Inspector: GLENN JAN MARK

Date: 9-10-09

Weekly O&M

Data downloaded with RTD?	(Y) / N	Staff Gauge cleaned?	(Y) / N
Cable/Tubing inspected?	(Y) / N	A/V Sensor cleaned?	(Y) / N
Tubing need replacement?	Y / (N)	In-Situ Troll cleaned?	(Y) / N
Debris cleared from in-stream Equipment?	(Y) / N	Rain gauge cleaned and inspected?	(Y) / N
Sample Intake cleaned?	(Y) / N	Cage/housing locked and secure?	(Y) / N
Sample Intake upright?	(Y) / N	Telemetry Cable Connected?	(Y) / N
Intake slots facing upstream / downstream?	(Y) / N		

In-Situ S/N: 47350

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11670 **pH** s.u.	7.0	7.09	+/- 0.5 pH unit	(P) / F	Y / N
DX05483 **DO** mg/l	9.84	10.04	+/- 0.7 mg/l of sat value	(P) / F	Y / N
PP11670 **ORP** mV	200	204	+/- 10 mV	(P) / F	Y / N
TB03937 **Turb.** NTU	0.0	-0.1	+/- 2 NTU	(P) / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
LK05252 **Sp. Cond.** mS/cm	1413	1505	+/- 15%	(P) / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: DRY ft

Signal Strength: 0 %

Stage reading from staff gauge: DRY ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .052 ft

Voltage reading from solar panels: 12.52 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 12.47 V

Monthly O&M

Solar panels cleaned and inspected? (Y) / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

Color of 750 Dessicant: blue / pink / yellow / green

ISCO stream velocity reading: _____ cfs

750 Dessicant replaced? (Y) / N

6712 Humidy Indicator: blue / pink / white

SDI-12 Dessicant Color: blue / pink

20 / 30 / 40

SDI-12 Dessicant Replaced? (Y) / N

6712 Dessicant Replaced? Y / (N)

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes: Pull Batteries out of Troll per J. Dick
Place Troll in cal-cup full of water

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-IP

Inspector: Beagenor Emmons + Forgey

Date: 9/10/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 48358 – Troll was soaking in water Station Dry

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10929	pH s.u.	7.0	7.05	+/- 0.5 pH unit	P / F	Y / N
PX05440	DO mg/l	10.45	13.78	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10929	ORP mV	200	199	+/- 10 mV	P / F	Y / N
TB04476	Turb. NTU	0.0		+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05266	Sp. Cond. mS/cm	1413	1754	+/- 15%	P / F	Y / N

463 nA : 8/28 notes suggest cleaning change w/ sensor

97 Ohms

Calibration confirmation of In-Situ Troll:

		Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
	pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
		4	NA		NA				
		10							
PX05440	DO mg/l	9.61	9.87	+/- 0.3 mg/l of sat value	P / F	30.00 2	Slope 15 to 34 Off set 2	P / F	Y / N
	ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
	Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
	Temp. °C			NA	P / F		NA	NA	Y / N
	Sp. Cond. mS/cm	1413	1295	+/- 10%	P / F	~~0.239~~ 0.34	K cell value 0.32 to 0.39	P / F	Y / N

Replace

Need aggressive cleaning

Batteries Replaced? (DO NOT LEAVE IN UNIT) Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: _____ ft

Signal Strength: _____ %

Stage reading from staff gauge: _____ ft

Spectrum Strength: _____ %

Stage reading from ISCO: _____ ft

Voltage reading from solar panels: _____ V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: _____ / V

Monthly O&M

Solar panels cleaned and inspected?	Y / N	**750 Module** *(replace dessicant if velocity reading is +/- 2% of Isco reading)*	
Manual (Marsh-McBirney) stream velocity reading:	_____ cfs	Color of 750 Dessicant:	blue / pink / yellow / green
ISCO stream velocity reading:	_____ cfs	750 Dessicant replaced?	Y / N
6712 Humidity Indicator:	blue / pink / white	SDI-12 Dessicant Color:	blue / pink
	20 / 30 / 40	SDI-12 Dessicant Replaced?	Y / N
6712 Dessicant Replaced?	Y / N	Clean A/V sensor transducer? (January / April / July / October)	Y / N

Notes: Spec. Cond. on 8/28 Kcell 0.341 NOW 0.227 if saved. calibrat.

Sensor Probe needs cleaning.

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-TT
POND OUTLET

Inspector: GLENN IAN MARK

Date: 9-10-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 47353

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u. (PP10928)	7.0	7.1	+/- 0.5 pH unit	P / F	Y / N
DO mg/l (DK05743)	8.77	9.15	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV (PP10928)	200	204	+/- 10 mV	P / F	Y / N
Turb. NTU (TB03968)	0.0	-0.8	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm (LC05261)	1413	1141	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1215	+/- 10%	P / F	0.312	K cell value 0.32 to 0.39	P / F	Y / N — clean
	1413	1371			0.331		P	N

Batteries Replaced? (*DO NOT LEAVE IN UNIT*) Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .72 ft

Signal Strength: 40 %

Stage reading from staff gauge: .80 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .631 ft

Voltage reading from solar panels: 13.42 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.36 / 13.36 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

ISCO stream velocity reading: _____ cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-IT
ABERJONA

Inspector: CLEAN THE MARK

Date: 9-10-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 47486

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11061	**pH** s.u.	7.0	7.17	+/- 0.5 pH unit	P / F	Y / N
DX05739	**DO** mg/l	9.427	9.492	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11061	**ORP** mV	200	206	+/- 10 mV	P / F	Y / N
TB03993	**Turb.** NTU	0.0	-0.8	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05760	**Sp. Cond.** mS/cm	1413	1340	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .40 ft

Signal Strength: 0 %

Stage reading from staff gauge: .38 ft

Spectrum Strength: 46 %

Stage reading from ISCO: .428 ft

Voltage reading from solar panels: 13.42 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.36 / 13.36 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

Color of 750 Dessicant: blue / pink / yellow / green

ISCO stream velocity reading: _____ cfs

750 Dessicant replaced? Y / N

6712 Humidy Indicator: blue / pink / white

SDI-12 Dessicant Color: blue / pink

20 / 30 / 40

SDI-12 Dessicant Replaced? Y / N

6712 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-04-TT Mishawum

Inspector: Bergeron, Emmons, Forgey

Date: 9/10/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N: 48168

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11735	**pH** s.u.	7.0	7.12	+/- 0.5 pH unit	P / F	Y / N
DX05527	**DO** mg/l	9.36	9.15	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11735	**ORP** mV	200	209	+/- 10 mV	P / F	Y / N
TB04505	**Turb.** NTU	0.0	-0.3	+/- 2 NTU	P / F	Y / N
	Temp. °C	66.5	66.54	+/- 0.5 °C	P / F	Annually Only
LC05769	**Sp. Cond.** mS/cm	1413	1481	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .48 ft

Signal Strength: 13 %

Stage reading from staff gauge: .58 ft

Spectrum Strength: 0 %

Stage reading from ISCO: .512 ft

Voltage reading from solar panels: 13.50 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.42 / 13.42 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

ISCO stream velocity reading: _____ cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-05-IT

Inspector: CLEWAI TAN MARK

Date: 9-10-09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 47351

Reading check of In-Situ Troll sensors:

		Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
PP10929	**pH** s.u.	7.0	7.20	+/- 0.5 pH unit	P / F	Y / N
DX65860	**DO** mg/l	9.084	9.343	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10929	**ORP** mV	200	208	+/- 10 mV	P / F	Y / N
TB03966	**Turb.** NTU	0.0	-0.4	+/- 2 NTU	P / F	Y / N
	Temp. °C	68.9	68.6	+/- 0.5 °F	P / F	**Annually Only**
CC05211	**Sp. Cond.** mS/cm	1413	1407	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	*Calibration Confirmation*	*Calibration Acceptance Criteria*	*Calibration Pass / Fail*	*Sensor Range Value*	*Sensor Acceptance Criteria*	*Sensor Pass / Fail*	*Sensor Replaced or Solution Changed?*
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.0 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.14 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 1.121 ft

Voltage reading from solar panels: 11.97 V

Stage reading reset to (if +/- 0.1): yes ft

Voltage reading from batteries: 11.95 / 11.95 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

ISCO stream velocity reading: _____ cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-06-TT
MONTVALE

Inspector: GLENN IAN MARK
Date: 9-10-09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 47482

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11065 **pH** s.u.	7.0	7.16	+/- 0.5 pH unit	P / F	Y / N
DX05565 **DO** mg/l	9.96	10.18	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11065 **ORP** mV	200	201	+/- 10 mV	P / F	Y / N
TB04003 **Turb.** NTU	0.0	0.6	+/- 2 NTU	P / F	Y / N
Temp. °C	61.12	61.04	+/- 0.5 °C	P / F	Annually Only
CC05347 **Sp. Cond.** mS/cm	1413	1305	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7 4 10	NA	+/- 0.1 pH unit (for pH 7)	P / F NA		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.02 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.36 ft

Spectrum Strength: 0 %

Stage reading from ISCO: 1.603 ft

Voltage reading from solar panels: 11.95 V

Stage reading reset to (if +/- 0.1): YES ft

Voltage reading from batteries: 11.93 / 11.93 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

ISCO stream velocity reading: _____ cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-07-TT
SWMNTOW

Inspector: GLENN IAN MARK

Date: 9-10-09

Weekly O&M

Data downloaded with RTD?	(Y) / N
Cable/Tubing inspected?	(Y) / N
Tubing need replacement?	Y / (N)
Debris cleared from in-stream Equipment?	(Y) / N
Sample Intake cleaned?	(Y) / N
Sample Intake upright?	(Y) / N
Intake slots facing upstream / downstream?	(Y) / N

Staff Gauge cleaned?	(Y) / N
A/V Sensor cleaned?	(Y) / N
In-Situ Troll cleaned?	(Y) / N
Rain gauge cleaned and inspected?	(Y) / N
Cage/housing locked and secure?	(Y) / N
Telemetry Cable Connected?	(Y) / N

In-Situ S/N: 48344

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10921 pH s.u.	7.0	7.15	+/- 0.5 pH unit	(P) / F	Y / N
DX05443 DO mg/l	—	13.4	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10921 ORP mV	200	201	+/- 10 mV	(P) / F	Y / N
TB04434 Turb. NTU	0.0	-0.2	+/- 2 NTU	(P) / F	Y / N
Temp. °C		62.9	+/- 0.5 °C	P / F	Annually Only
LC05250 Sp. Cond. mS/cm	1413	1446	+/- 15%	(P) / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	(Y) / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

See error message

Batteries Replaced? (*DO NOT LEAVE IN UNIT*): Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.230 ft

Signal Strength: 13 %

Stage reading from staff gauge: .94 ft

Spectrum Strength: 62 %

Stage reading from ISCO: 1.301 ft

Voltage reading from solar panels: 12.98 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 12.92 / 12.92 V

Monthly O&M

Solar panels cleaned and inspected?	Y / N
Manual (Marsh-McBirney) stream velocity reading:	_____ cfs
ISCO stream velocity reading:	_____ cfs
6712 Humidy Indicator:	blue / pink / white
	20 / 30 / 40
6712 Dessicant Replaced?	Y (N)

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant:	blue / pink / yellow / green
750 Dessicant replaced?	(Y) / N
SDI-12 Dessicant Color:	blue (pink)
SDI-12 Dessicant Replaced?	(Y) / N
Clean A/V sensor transducer? (January / April / July / October)	(Y) / N

Notes: D.O. won't calibrate ERROR message
Barometric pressure is reading unusally low value
unable to continue calibration. ?
- Needs a new sensor replaced w/ DX05445
cleaned 9/10/09 recalibrated [illegible]

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-08-TT USGS

Inspector: GLENN JAW MARK

Date: 9-10-09

Weekly O&M

Data downloaded with RTD?	(Y) / N	Staff Gauge cleaned?	(Y) / N
Cable/Tubing inspected?	(Y) / N	A/V Sensor cleaned?	(Y) / N
Tubing need replacement?	Y / (N)	In-Situ Troll cleaned?	(Y) / N
Debris cleared from in-stream Equipment?	(Y) / N	Rain gauge cleaned and inspected?	(Y) / N
Sample Intake cleaned?	(Y) / N	Cage/housing locked and secure?	(Y) / N
Sample Intake upright?	(Y) / N	Telemetry Cable Connected?	(Y) / N
Intake slots facing upstream / downstream?	(Y) / N		

In-Situ S/N: 47352

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10927	**pH** s.u.	7.0	7.12	+/- 0.5 pH unit	(P) / F	Y / N
DX05433	**DO** mg/l	9.23	9.28	+/- 0.7 mg/l of sat value	(P) / F	Y / N
PP10927	**ORP** mV	200	204	+/- 10 mV	(P) / F	Y / N
TB03970	**Turb.** NTU	0.0	0.2	+/- 2 NTU	(P) / F	Y / N
	Temp. °C	62.8	62.5	+/- 0.5 °C	(P) / F	Annually Only
LC05679	**Sp. Cond.** mS/cm	1413	1420	+/- 15%	(P) / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark can)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .40 ft

Signal Strength: 0 %

Stage reading from staff gauge: NA ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .377 ft

Voltage reading from solar panels: 12.47 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 12.44 / 12.44 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

ISCO stream velocity reading: _____ cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / (N)

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / (pink) / yellow / green

750 Dessicant replaced? (Y) / N

SDI-12 Dessicant Color: blue / (pink)

SDI-12 Dessicant Replaced? (Y) / N

Clean A/V sensor transducer? (Y) / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-01-IT HB

Inspector: GLENN MARK DAN

Date: 9-17-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 47485

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11294	pH s.u.	9.0	7.21	+/- 0.5 pH unit	P / F	Y / N
DX05844	DO mg/l	10.2	12.5	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11294	ORP mV	200	203	+/- 10 mV	P / F	Y / N
T603991	Turb. NTU	0.0	-0.4	+/- 2 NTU	P / F	Y / N
	Temp. °C	14.6	14.14	+/- 0.5 °C	P / F	Annually Only
LC05331	Sp. Cond. mS/cm	1413	1536	+/- 15%	P / F	Y / N

196 uA

14.6 std

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l	10.28	10.55	+/- 0.3 mg/l of sat value	P / F	15.74 2	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.33 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.69 ft

Signal Strength: 26 %

Stage reading from staff gauge: 1.90 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .611 ft

Voltage reading from solar panels: 12.52 V

Stage reading reset to (if +/- 0.1): YES ft

Voltage reading from batteries: 12.52 12.50

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cf

ISCO stream velocity reading: _____ cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes: DO. fail last 2 week 9/3, 9/10 needs a cleaning/ on new sensor

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-IP
AAD

Inspector: GLENN JAN MARK

Date: 9-17-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 47350

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11670	pH s.u.	7.0	7.05	+/- 0.5 pH unit	P / F	Y / N
DX05483	DO mg/l	10.21	10.60	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11670	ORP mV	200	205	+/- 10 mV	P / F	Y / N
TB03937	Turb. NTU	0.0	-0.2	+/- 2 NTU	P / F	Y / N
RTD	Temp. °C	15.4	18.28	+/- 0.5 °C	P / F	Annually Only
CC05252	Sp. Cond. mS/cm	1413	1656	+/- 15%	P / F	Y / N

16 256

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cup)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1471	+/- 10%	P / F	0.293	K cell value 0.33 to 0.39	P / F	Y / N

Batteries Replaced? (DO NOT LEAVE IN UNIT) Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .47 ft

Signal Strength: 9 %

Stage reading from staff gauge: .54 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .41 ft

Voltage reading from solar panels: 12.39 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 12.35 12.33

Monthly O&M

Solar panels cleaned and inspected?	Y / N	**750 Module** *(replace dessicant if velocity reading is +/- 2% of Isco reading)*	
Manual (Marsh-McBirney) stream velocity reading:	cf	Color of 750 Dessicant:	blue / pink / yellow / green
ISCO stream velocity reading:	cf	750 Dessicant replaced?	Y / N
6712 Humidy Indicator:	blue / pink / white	SDI-12 Dessicant Color:	blue / pink
	20 / 30 / 40	SDI-12 Dessicant Replaced?	Y / N
6712 Dessicant Replaced?	Y / N		

Notes: Spec. Cond. need cleaning + recalibration

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-IP
BECO

Inspector: Emmons

Date: 9/17/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 48358

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10925	pH s.u.	7.0	7.05	+/- 0.5 pH unit	P / F	Y / N
DX05440	DO mg/l	10.13		+/- 0.7 mg/l of sat value	P / F	Y / N
PP10925	ORP mV	200	202	+/- 10 mV	P / F	Y / N
TB04476	Turb. NTU	0.0	-2.0	+/- 2 NTU	P / F	Y / N
RTD	Temp. °C	15.17	15.0	+/- 0.5 °C	P / F	Annually Only
LC05266	Sp. Cond. mS/cm	1413	1607	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l	10.13	10.09	+/- 0.3 mg/l of sat value	P / F	98.4	Slope 15 to 34 Off set 2	P / F	Y / N *
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0	0.0	+/- 2 NTU	P / F	-0.09	Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.33 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 0 ft

Signal Strength: 0 %

Stage reading from staff gauge: 0 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 0.032 ft

Voltage reading from solar panels: 12.08 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 12.03 / 12.03 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cf

ISCO stream velocity reading: _____ cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes: * BECO need new D.O. sensor w/ burned in membrane

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-TT
Pond Outlet

Inspector: Emmons

Date: 9/17/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 47353

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u. (PP10928)	7.0	7.00	+/- 0.5 pH unit	P / F	Y / N
DO mg/l (DX05743)	8.86	9.41	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV (PP10928)	200	202	+/- 10 mV	P / F	Y / N
Turb. NTU (TS03968)	0.0	-1.0	+/- 2 NTU	P / F	Y / N
Temp. °C (RTD)	16.3	15.71	+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm (LC05269 / LC5261)	1413	1687	+/- 15%	P / F	Y / N

245

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1386	+/- 10%	P / F	0.293	K cell value 0.33 to 0.39	P / F	Y / N

needs extensive cleaning

Batteries Replaced? (DO NOT LEAVE IN UNIT) Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .82 ft

Signal Strength: 32 %

Stage reading from staff gauge: .92 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .75 ft

Voltage reading from solar panels: 13.60 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.33 / 13.33 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cf

ISCO stream velocity reading: _____ cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes: Spec. Cond needs cleaning in 10% vinegar or replacement

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-TT
Aberjona

Inspector: Emmons

Date: 9/17/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 47486

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11061	pH s.u.	7.00	7.11	+/- 0.5 pH unit	P / F	Y / N
DX05739	DO mg/l	9.714	9.93	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11061	ORP mV	200	207	+/- 10 mV	P / F	Y / N
TB03993	Turb. NTU	0.0	-1.0	+/- 2 NTU	P / F	Y / N
RTD	Temp. °C	16.2	16.31	+/- 0.5 °C	P / F	Annually Only
LC05760	Sp. Cond. mS/cm	1413	1511	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -54 to -62 mV Off set 372 to 456	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.33 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .53 ft

Signal Strength: 0 %

Stage reading from staff gauge: .48 ft

Spectrum Strength: 95 %

Stage reading from ISCO: .349 ft

Voltage reading from solar panels: 13.20 V

Stage reading reset to (if +/- 0.1): ND ft

Voltage reading from batteries: 13.12 / 13.12 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cf

ISCO stream velocity reading: _____ cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes:

Rev. 06/22/09

IPOU2
WOBURN, MA

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-04-T1
Mishawum

Inspector: Emmons

Date: 9/17/09

Weekly O&M

Data downloaded with RTD?	(Y) / N	Staff Gauge cleaned?	(Y) / N
Cable/Tubing inspected?	(Y) / N	A/V Sensor cleaned?	(Y) / N
Tubing need replacement?	Y / (N)	In-Situ Troll cleaned?	(Y) / N
Debris cleared from in-stream Equipment?	(Y) / N	Rain gauge cleaned and inspected?	(Y) / N
Sample intake cleaned?	(Y) / N	Cage/housing locked and secure?	(Y) / N
Sample Intake upright?	(Y) / N	Telemetry Cable Connected?	(Y) / N

In-Situ S/N: 48168

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11735 pH s.u.	7.00	7.21	+/- 0.5 pH unit	(P) / F	Y / (N)
DX05527 DO mg/l	9.79	11.01	+/- 0.7 mg/l of sat value	P / (F)	(Y) / N
PP11735 ORP mV	200	211	+/- 10 mV	P / (F)	(Y) / N
TB04505 Turb. NTU	0.0	-0.2	+/- 2 NTU	(P) / F	Y / (N)
RTD Temp. °C	17.1	16.94	+/- 0.5 °C	(P) / F	Annually Only
LC05769 Sp. Cond. mS/cm	1413	1687	+/- 15%	P / (F)	(Y) / N

231 nA

230 ohms

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7 4 10	NA	+/- 0.1 pH unit (for pH 7)	P / F NA		Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
DO mg/l	9.72	9.93	+/- 0.3 mg/l of sat value	(P) / F	23.14	Slope 15 to 34 Off set 2	(P) / F	Y / N
ORP mV	200	200	+/- 5 mV	(P) / F	17.91	Off set +/- 30 mV	(P) / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1386	+/- 10%	(P) / F	0.281	K cell value 0.33 to 0.39	P / (F)	Y / N

Needs cleaning

Batteries Replaced? (DO NOT LEAVE IN UNIT) Y / (N)

Manual stage reading (with ruler) from bottom of A/V sensor: .51 ft

Signal Strength: 25 %

Stage reading from staff gauge: .70 ft

Spectrum Strength: 68 %

Stage reading from ISCO: .622 ft

Voltage reading from solar panels: 13.77 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.73 / 13.73 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cf

ISCO stream velocity reading: _____ cf

6712 Humidy Indicator: (blue) / pink / white

20 / (30) / 40

6712 Dessicant Replaced? Y / (N)

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant: (blue) / pink / yellow / green

750 Dessicant replaced? Y / (N)

SDI-12 Dessicant Color: (blue) / pink

SDI-12 Dessicant Replaced? Y / (N)

Notes:

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-05-TT SALEM

Inspector: GLENN THE MARK

Date: 9-17-09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Intake slots facing upstream / downstream?	Y / N

Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 473591

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10929	**pH** s.u.	7.00	7.26	+/- 0.5 pH unit	P / F	Y / N
DX05860	**DO** mg/l	9.52	12.14	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10929	**ORP** mV	200	209	+/- 10 mV	P / F	Y / N
TB03966	**Turb.** NTU	0.0	-0.6	+/-2 NTU	P / F	Y / N
RTD	**Temp.** °C	18.0	17.83	+/- 0.5 °C	P / F	Annually Only
CC05211	**Sp. Cond.** mS/cm	1413	1604	+/- 15%	P / F	Y / N

216 NA

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l	9.43	9.59	+/- 0.3 mg/l of sat value	P / F	20.76 2	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.13 ft

Signal Strength: 14 %

Stage reading from staff gauge: 1.30 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 1.149 ft

Voltage reading from solar panels: 11.86 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 11.84 / 11.84 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cfs

ISCO stream velocity reading: _____ cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW 06 TT
MONTVALE

CLENS IAN MARK

Inspector: 4-17-09

Date:

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 472482

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	7.00	7.15	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	9.97	11.29	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	207	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.4	+/- 2 NTU	P / F	Y / N
Temp. °C	16.9	16.83	+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1348	+/- 15%	P / F	Y / N

PP11065
DX
PP11065
TB04003
LC05347

300 mA

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l	9.88	9.70	+/- 0.3 mg/l of sat value	P / F	29.18	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.33 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.15 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.80 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 1.166 ft

Voltage reading from solar panels: 11.90 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 11.87 / 11.87 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cf

ISCO stream velocity reading: _____ cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes:

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-07-TT
SCANTON

Inspector: CLEAN TAN MARK

Date: 9-17-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 48344

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10921	pH s.u.	7.00	7.15	+/- 0.5 pH unit	P / F	Y / N
DX05445	DO mg/l	?	100.36	+/- 0.7 mg/l of sat value	P / F	Y / N Tried to. *
PP10921	ORP mV	200	205	+/- 10 mV	P / F	Y / N
TB04434	Turb. NTU	0.0	-0.2	+/- 2 NTU	P / F	Y / N
RTD	Temp. °C	17.2	17.04	+/- 0.5 °C	P / F	Annually Only
CC05230	Sp. Cond. mS/cm	1413	1501	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.33 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.26 ft

Signal Strength: 23 %

Stage reading from staff gauge: .98 ft

Spectrum Strength: 48 %

Stage reading from ISCO: 1.36 ft

Voltage reading from solar panels: 13.06 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.02 / 13.02 V

Monthly O&M

Solar panels cleaned and inspected?	Y / N	**750 Module** *(replace dessicant if velocity reading is +/- 2% of Isco reading)*	
Manual (Marsh-McBirney) stream velocity reading:	cf	Color of 750 Dessicant:	blue / pink / yellow / green
ISCO stream velocity reading:	cf	750 Dessicant replaced?	Y / N
6712 Humidy Indicator:	blue / pink / white	SDI-12 Dessicant Color:	blue pink
	20 / 30 / 40	SDI-12 Dessicant Replaced?	Y / N
6712 Dessicant Replaced?	Y / N		

Notes: * D.O. sensor can not find a Barometric pressure from Troll to recalibrate

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-08-TT
USGS

Inspector: GLENN IAN MARK

Date: 9-17-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 47352

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10927	pH s.u.	7.00	7.16	+/- 0.5 pH unit	P / F	Y / N
DX05433	DO mg/l	9.70	10.14	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10927	ORP mV	240	208	+/- 10 mV	P / F	Y / N
TB03970	Turb. NTU	0.0	0.1	+/- 2 NTU	P / F	Y / N
RTD	Temp. °C	17.9	17.53	+/- 0.5 °C	P / F	Annually Only
LC05679	Sp. Cond. mS/cm	1413	1595	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	NA	+/- 0.1 pH unit (for pH 7)	P / F		Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4			NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.33 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .570 ft

Signal Strength: 33 %

Stage reading from staff gauge: ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .556 ft

Voltage reading from solar panels: 12.34 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 12.30 / 12.30 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cf

ISCO stream velocity reading: _____ cf

6712 Humidity Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes:

Rev. 06/23/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: Halls Brook
SW-01-77

Inspector: K. Lau / GLENN

Date: 9/21/09 9-25-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 47485

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
SN PH9294 pH s.u.	4.01	4.07	+/- 0.5 pH unit	P / F	Y / N
S/N DX05844 DO mg/l	9.70	9.51	+/- 0.7 mg/l of sat value	P / F	Y / N
SN PP11294 ORP mV	200	209	+/- 10 mV	P / F	Y / N
SN T3 03991 Turb. NTU	0.0	+0	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
SN LC05331 Sp. Cond. mS/cm	1413	1416	+/- 15%	P / F	Y / N

- changes ~~[illegible]~~.
- changed filter [illegible].

1249

ORP - 200 .191 recal.

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u. 6.5 178 -155	7	7.09	+/- 0.1 pH unit (for pH 7)	P / F	-54.05	Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA	384.49			
	10							
165.57 nA 184 nA 233 mV 222 mV -31 DO mg/l	~~9.68~~ ~~9.63~~	~~9.63~~ ~~10.84~~	+/- 0.3 mg/l of sat value	P / F	15.92 2.00	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	204	+/- 5 mV	P / F	33.46	Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0	0.1	+/- 2 NTU	P / F	-0.25	Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
261 ohm 244 ohm Sp. Cond. mS/cm	1413	1416	+/- 10%	P / F	0.384	K cell value 0.32 to 0.39	P / F	Y / N

recal'ed 10.87 2.00
recalled 32.77
recal'ed 32.04
22.14 J
recal'ed 0.285

0.346

Batteries Replaced? (DO NOT LEAVE IN UNIT) Y / N — 2970 ohm new sensor

Manual stage reading (with ruler) from bottom of A/V sensor: .55 ft (P, Y)

Signal Strength: 0 %

Stage reading from staff gauge: .85 ft

Spectrum Strength: 83 %

Stage reading from ISCO: .514 ft

Voltage reading from solar panels: 13.75 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.70 13.70 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: .810 cf

ISCO stream velocity reading: .88 cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes: Changed conductivity sensor to LC ~~05331~~ 05820

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: AAD
SW-02-ZP

Inspector: K. Lau / G. LEAHY
Date: 9/21/09 9-25-09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 47350

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
S/N PP11670 pH s.u.	4.01	3.83	+/- 0.5 pH unit	P / F	Y / N
DX05483 DO mg/l	9.240	10.02	+/- 0.7 mg/l of sat value	P / F	Y / N
S/N PP11670 ORP mV	200	192	+/- 10 mV	P / F	Y / N
TB03937 Turb. NTU	0.0	-0.3	+/- 2 NTU	P / F	Y / N
Temp. °C	19.4	19.40	+/- 0.5 °C	P / F	Annually Only
LC05252 Sp. Cond. mS/cm	1413	1244	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u. 0.78 172 -160	7	7.04	+/- 0.1 pH unit (for pH 7)	P / F	-53.09 / 376.38	Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
243 DO mg/l	9.226	9.13	+/- 0.3 mg/l of sat value	P / F	26.04 / 2.00	Slope 15 to 34 Off set 2	P / F	Y / N
210 mV ORP mV	200	200	+/- 5 mV	P / F	10.79	Off set +/- 30 mV	P / F	Y / N
-0.41 Turb. NTU	0.0	-0.0	+/- 2 NTU	P / F	-0.38	Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
264 Sp. Cond. mS/cm	1413	1413	+/- 10%	P / F	0.333	K cell value 0.32 to 0.39	P / F	Y / N

-57.04 / 404.35

Batteries Replaced? (DO NOT LEAVE IN UNIT): Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 0 ft DRY

Signal Strength: 0 %

Stage reading from staff gauge: 0 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .06 ft

Voltage reading from solar panels: 13.50 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.42 / 13.42 V

Monthly O&M

Solar panels cleaned and inspected?	Y / N
Manual (Marsh-McBirney) stream velocity reading:	NA cf
ISCO stream velocity reading:	DRY cf
6712 Humidy Indicator:	blue / pink / white
	20 / 30 / 40
6712 Dessicant Replaced?	Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant:	blue / pink / yellow / green
750 Dessicant replaced?	Y / N
SDI-12 Dessicant Color:	blue / pink
SDI-12 Dessicant Replaced?	Y / N

Notes:

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-IP
BECO

Inspector: Lau, Emmons & Forgey
Date: 9/21/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N - DRY	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 48358

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PF10929	pH s.u.	4.01	3.89	+/- 0.5 pH unit	P / F	Y / N + changed pH filling solution
DK05440	DO mg/l	8.39	8.76	+/- 0.7 mg/l of sat value	P / F	Y / N - Burning in new DO. membrane
PP10925	ORP mV	200	187	+/- 10 mV	P / F	Y / N + changed pH filling solution
TB04496	Turb. NTU	0.0	0.4	+/- 2 NTU	P / F	Y / N
RTD	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05266	Sp. Cond. mS/cm	1413	1350	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value 4 → 7	Sensor Acceptance Criteria	Sensor Pass / Fail 7 → 10	Sensor Replaced or Solution Changed?
pH s.u.	7	7.06	+/- 0.1 pH unit (for pH 7)	P / F	- 56.69	Slope -66 to -50 mV Off set 363 to 450	- 53.15 P / F	Y / N
	4	NA	NA	NA	404		329	
	10							
DO mg/l	8.37	8.76	+/- 0.3 mg/l of sat value	P / F	38.14	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	22.06	Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0	0.2	+/- 2 NTU	P / F	0.05	Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1317	+/- 10%	P / F	0.324	K cell value 0.32 to 0.39	P / F	Y / N

327 NA

2 X -

Batteries Replaced? (DO NOT LEAVE IN UNIT) Y / N

1413 1438 0.330 P N

Manual stage reading (with ruler) from bottom of A/V sensor: DRY

Signal Strength: 2 %

Spectrum Strength: 0 %

Voltage reading from solar panels: 12.82 V

Voltage reading from batteries: 12.62 / 12.68

Stage reading from staff gauge: ____ ft

Stage reading from ISCO: DRY ft

Stage reading reset to (if +/- 0.1): — ft

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: Dry cf

ISCO stream velocity reading: Dry cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module *(replace dessicant if velocity reading is +/- 2% of Isco reading)*

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes: D.O. membrane is new after cleaning: Burning in 9/21/09 → 09/24/09 reading may not have stabilized

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-IP
BECO

Inspector: GLENN

Date: 9-25-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N:

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.			+/- 0.5 pH unit	P / F	Y / N
DO mg/l			+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV			+/- 10 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm			+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	*Calibration Confirmation*	*Calibration Acceptance Criteria*	*Calibration Pass / Fail*	*Sensor Range Value*	*Sensor Acceptance Criteria*	*Sensor Pass / Fail*	*Sensor Replaced or Solution Changed?*
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 0 ft

Signal Strength: 0 %

Stage reading from staff gauge: 0 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .15 ft

Voltage reading from solar panels: 13.64 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.57 13.57 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: NA cf

ISCO stream velocity reading: DRY NA cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes:
ADDED "A" STICKER TO SLAVE SAMPLER.

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW 02 TT
Pond Outlet

Inspector: Emmons, Forgey, Cain

Date: 9/24

Weekly O&M

Data downloaded with RTD?	(Y) / N
Cable/Tubing inspected?	(Y) / N
Tubing need replacement?	Y / (N)
Debris cleared from in-stream Equipment?	(Y) / N
Sample Intake cleaned?	(Y) / N
Sample Intake upright?	(Y) / N
Staff Gauge cleaned?	(Y) / N
A/V Sensor cleaned?	(Y) / N
In-Situ Troll cleaned?	(Y) / N
Rain gauge cleaned and inspected?	(Y) / N
Cage/housing locked and secure?	(Y) / N
Telemetry Cable Connected?	(Y) / N

In-Situ S/N: 47353

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10928	pH s.u.	4.01	3.85	+/- 0.5 pH unit	(P) / F	(Y) / N *
DX05743	DO mg/l	7.52	12.36	+/- 0.7 mg/l of sat value	P / (F)	(Y) / N
PP10928	ORP mV	200	193	+/- 10 mV	(P) / F	(Y) / N #
TB03968	Turb. NTU	0.0	0.6	+/- 2 NTU	(P) / F	(Y) / N
RTD	Temp. °C	27.5	27.65	+/- 0.5 °C	P / F	Annually Only
LC05261	Sp. Cond. mS/cm	1413	1250	+/- 15%	(P) / F	(Y) / N

pH	mV
4	185
7	11.71
10	-148

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value 4 → 7	Sensor Acceptance Criteria	Sensor Pass / Fail 7 → 10	Sensor Replaced or Solution Changed?
pH s.u.	7	7.02	+/- 0.1 pH unit (for pH 7)	(P) / F	-58.27	Slope -66 to -50 mV Off set 363 to 450	-53.52 P / F	Y / (N)
	4	NA		NA	419.65		386	
	10							
DO mg/l	7.39	7.58	+/- 0.3 mg/l of sat value	(P) / F	34.0	Slope 15 to 34 Off set 2	(P) / F	Y / (N)
ORP mV	200	200	+/- 5 mV	(P) / F	-0.77	Off set +/- 30 mV	(P) / F	Y / (N)
Turb. NTU	0.0	-0.2	+/- 2 NTU	(P) / F	1.11	Off set +/- 2 NTU (screen in dark cap)	(P) / F	Y / (N)
Temp. °C	—		NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1395	+/- 10%	(P) / F	0.3275	K cell value 0.32 to 0.39	(P) / F	Y / (N)

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: .90 ft

Signal Strength: 20 %

Stage reading from staff gauge: .82 ft

Spectrum Strength: error %

Stage reading from ISCO: .603 ft

Voltage reading from solar panels: 13.63 V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: 13.44/13.45

Monthly O&M

Solar panels cleaned and inspected? (Y) / N

Manual (Marsh-McBirney) stream velocity reading: .22 FS

ISCO stream velocity reading: .839 CFS / 1.26 FS

6712 Humidy Indicator: (blue) / pink / white

(20 / 30 / 40)

6712 Dessicant Replaced? Y / (N)

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: (blue) / pink / yellow / green

750 Dessicant replaced? Y / (N)

SDI-12 Dessicant Color: (blue) / pink

SDI-12 Dessicant Replaced? Y / (N)

Notes: * pH/ORP : solution changed before recalibration

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-TT
Abeerjona

Inspector: Lou Emmons
Date: 9/21/09

Weekly O&M

Data downloaded with RTD?	(Y) / N	Staff Gauge cleaned?	(Y) / N
Cable/Tubing inspected?	(Y) / N	A/V Sensor cleaned?	(Y) / N
Tubing need replacement?	Y / (N)	In-Situ Troll cleaned?	(Y) / N
Debris cleared from in-stream Equipment?	(Y) / N	Rain gauge cleaned and inspected?	(Y) / N
Sample Intake cleaned?	(Y) / N	Cage/housing locked and secure?	(Y) / N
Sample Intake upright?	(Y) / N	Telemetry Cable Connected?	(Y) / N

In-Situ S/N: 47486

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11061	pH s.u.	4.01	3.97	+/- 0.5 pH unit	(P) / F	(Y) / N
DX05739	DO mg/l	8.78	9.22	+/- 0.7 mg/l of sat value	(P) / F	(Y) / N
PP11061	ORP mV	200	238	+/- 10 mV	P / (F)	(Y) / N
TB03993	Turb. NTU	0.0	-0.8	+/- 2 NTU	(P) / F	(Y) / N
RTD	Temp. °C	23.3	23.25	+/- 0.5 °C	(P) / F	Annually Only
LC05760	Sp. Cond. mS/cm	1413	1302	+/- 15%	(P) / F	(Y) / N

197 nA

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value 4 → 7	Sensor Acceptance Criteria	Sensor Pass / Fail 7 → 10	Sensor Replaced or Solution Changed?
pH s.u.	7	7.09	+/- 0.1 pH unit (for pH 7)	(P) / F	-54.89	Slope -66 to -50 mV Off set 363 to 450	-52.11 P / F	Y / N
	4	NA		NA	389		367	
	10							
DO mg/l	8.76	8.73	+/- 0.3 mg/l of sat value	(P) / F	22.22	Slope 15 to 34 Off set 2	(P) / F	Y / N
ORP mV	200	200	+/- 5 mV	(P) / F	16.98	Off set +/- 30 mV	(P) / F	Y / N
Turb. NTU	0.0	-0.2	+/- 2 NTU	(P) / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1418	+/- 10%	(P) / F	0.35	K cell value 0.32 to 0.39	(P) / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / (N)

Manual stage reading (with ruler) from bottom of A/V sensor: .31 ft

Signal Strength: 4 %

Stage reading from staff gauge: .38 ft

Spectrum Strength: 91 %

Stage reading from ISCO: .279 ft

Voltage reading from solar panels: 13.55 V

Stage reading reset to (if +/- 0.1): NO ft

Voltage reading from batteries: 13.49 / 13.49 V

Monthly O&M

Solar panels cleaned and inspected? (Y) / N

Manual (Marsh-McBirney) stream velocity reading: .18 cf

ISCO stream velocity reading: .140 cf

6712 Humidy Indicator: (blue) / pink / white

20 / (30) / 40

6712 Dessicant Replaced? Y / (N)

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: (blue) / pink / yellow / green

750 Dessicant replaced? Y / (N)

SDI-12 Dessicant Color: (blue) / pink

SDI-12 Dessicant Replaced? Y / (N)

Notes:

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: Mishawum

SW-09-TT

Inspector: Lary Emmons

Date: 9/21/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N

In-Situ S/N: 48168

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	4.01	4.15	+/- 0.5 pH unit	P / F	Y / N
bx0552 7 **DO** mg/l	8.815	12.162	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11735 **ORP** mV	200	191	+/- 10 mV	P / F	Y / N
T150405 **Turb.** NTU	0.0	0.6	+/- 2 NTU	P / F	Y / N
Temp. °C	69.6	69.75	+/- 0.5 °C	P / F	Annually Only
LC 0570 **Sp. Cond.** mS/cm	~~[illegible]~~ 1413	1425 1294	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u. 10.41 172 -148	7	7.08	+/- 0.1 pH unit (for pH 7)	P / F	-52.97	Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA	380.33			
	10							
~270 **DO** mg/l	8.807	8.084	+/- 0.3 mg/l of sat value	P / F	30.78 2.00	Slope 15 to 34 Off set 2	P / F	Y / N
211 **ORP** mV	200	200	+/- 5 mV	P / F	12.13	Off set +/- 30 mV	P / F	Y / N
1.06 **Turb.** NTU	0.0	-0.1	+/- 2 NTU	P / F	1.02	Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
1999.66 **Sp. Cond.** mS/cm	1413	1294	+/- 10%	P / F	0.260	K cell value 0.32 to 0.39	P / F	Y / N

F

-56.101 402.27

clean in 10% 0-15 min

19780 229

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

0.259 / 0.301 - acceptable

Manual stage reading (with ruler) from bottom of A/V sensor: _____ ft

Signal Strength: _____ %

Spectrum Strength: _____ %

Stage reading from staff gauge: _____ ft

Stage reading from ISCO: _____ ft

Voltage reading from solar panels: _____ V

Voltage reading from batteries: _____ / V

Stage reading reset to (if +/- 0.1): _____ ft

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: _____ cf

ISCO stream velocity reading: _____ cf

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Notes:

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-04-TT
MISH

Inspector: GLENN

Date: 9-25-09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y / N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y / N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y / N
Debris cleared from in-stream Equipment?	Y / N	Rain gauge cleaned and inspected?	Y / N
Sample Intake cleaned?	Y / N	Cage/housing locked and secure?	Y / N
Sample Intake upright?	Y / N	Telemetry Cable Connected?	Y / N
Intake slots facing upstream / downstream?	Y / N		

In-Situ S/N:

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.			+/- 0.5 pH unit	P / F	Y / N
DO mg/l			+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV			+/- 10 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm			+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	*Calibration Confirmation*	*Calibration Acceptance Criteria*	*Calibration Pass / Fail*	*Sensor Range Value*	*Sensor Acceptance Criteria*	*Sensor Pass / Fail*	*Sensor Replaced or Solution Changed?*
pH s.u.	7		+/- 0.1 pH unit (for pH 7)	P / F		Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV			+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU			+/- 2 NTU	P / F		Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm			+/- 10%	P / F		K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Signal Strength: 14 %

Spectrum Strength: ERROR %

Voltage reading from solar panels: 13.63 V

Voltage reading from batteries: 13.52 / 13.52 V

Manual stage reading (with ruler) from bottom of A/V sensor: .53 ft

Stage reading from staff gauge: .60 ft

Stage reading from ISCO: .502 ft

Stage reading reset to (if +/- 0.1): NO ft

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: 1.88 cfs

ISCO stream velocity reading: 1.831 cfs

6712 Humidy Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue / pink

SDI-12 Dessicant Replaced? Y / N

Clean A/V sensor transducer? Y / N
(January / April / July / October)

Notes:

Rev. 08/27/09

IPOU2
WOBURN, MA

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW05TT
Salem St.

Inspector: Fogg Emmons Lau

Date: 9/24/09

Weekly O&M

Data downloaded with RTD?	Y / N	Staff Gauge cleaned?	Y N
Cable/Tubing inspected?	Y / N	A/V Sensor cleaned?	Y N
Tubing need replacement?	Y / N	In-Situ Troll cleaned?	Y N
Debris cleared from in-stream Equipment?	Y N	Rain gauge cleaned and inspected?	Y N
Sample Intake cleaned?	Y N	Cage/housing locked and secure?	Y N
Sample Intake upright?	Y N	Telemetry Cable Connected?	Y N

In-Situ S/N: 47351

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	4.01	4.10	+/- 0.5 pH unit	P / F	Y / N
DK0580 **DO** mg/l	7.85	7.85	+/- 0.7 mg/l of sat value	P F	Y / N
PP10929 **ORP** mV	200	~~3.200~~	+/- 10 mV	P F	Y / N
-13039 **Turb.** NTU	0.0	0.9	+/- 2 NTU	P F	Y / N
Temp. °C	81.6	81.02	+/- 0.5 °C	P F	Annually Only
LC 05211 **Sp. Cond.** mS/cm	1413	1519	+/- 15%	P F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value -58.01 / 413.89	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u. 472 / 178 / -156	7	7.03	+/- 0.1 pH unit (for pH 7)	P F	-53.57	Slope -66 to -50 mV Off set 363 to 450	P F	Y N solm.
	4	NA		NA	379.79			
	10							
265 **DO** mg/l	7.782	7.834	+/- 0.3 mg/l of sat value	P / F	33.84 200	Slope 15 to 34 Off set 2	P F	Y / N
190 ~~3.87~~ **ORP** mV	200	200	+/- 5 mV	P F	-13.15	Off set +/- 30 mV	P / F	Y / N solm.
0.92 **Turb.** NTU	0.0	-0.3	+/- 2 NTU	P / F	0.84	Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
208 **Sp. Cond.** mS/cm	1413	1448	+/- 10%	P / F	0.307	K cell value 0.32 to 0.39	P / F	Y / N

1448 P 0.299 0.311 -no

20 1.7 Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

219.17

Manual stage reading (with ruler) from bottom of A/V sensor: 1.06 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.18 ft

Spectrum Strength: error %

Stage reading from ISCO: 1.087 ft

Voltage reading from solar panels: 13.10 V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: 12.97/12.99 V

Monthly O&M

Solar panels cleaned and inspected?	Y N	**750 Module** *(replace dessicant if velocity reading is +/- 2% of Isco reading)*	
Manual (Marsh-McBirney) stream velocity reading:	.31 FS	Color of 750 Dessicant:	blue / pink / yellow / green
ISCO stream velocity reading:	3.52 FS	750 Dessicant replaced?	Y / N
6712 Humidy Indicator:	blue / pink / white	SDI-12 Dessicant Color:	blue / pink
	20 / 30 / 40	SDI-12 Dessicant Replaced?	Y / N
6712 Dessicant Replaced?	Y / N		

Notes:

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-06-TT Montvale Ave

Inspector: Emmy, Forgey, Lah

Date: 9/24/09

Quarterly O&M

Weekly O&M

Data downloaded with RTD?	(Y) / N
Cable/Tubing inspected?	(Y) / N
Tubing need replacement?	Y / (N)
Debris cleared from in-stream Equipment?	(Y) / N
Sample Intake cleaned?	(Y) / N
Sample Intake upright?	(Y) / N
Staff Gauge cleaned?	(Y) / N
A/V Sensor cleaned?	(Y) / N
In-Situ Troll cleaned?	(Y) / N
Rain gauge cleaned and inspected?	(Y) / N
Cage/housing locked and secure?	(Y) / N
Telemetry Cable Connected?	(Y) / N

In-Situ S/N: 47482

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PH1065 **pH** s.u.	4.01	3.86	+/- 0.5 pH unit	(P) / F	(Y) / N
DX05565 **DO** mg/l	8.48	10.73	+/- 0.7 mg/l of sat value	P / (F)	Y / N
PP11065 **ORP** mV	200	209	+/- 10 mV	(P) / F	(Y) / N
T804003 **Turb.** NTU	0.0	-0.5	+/- 2 NTU	(P) / F	(Y) / N
Temp. °C	24.5	24.46	+/- 0.5 °C	(P) / F	Annually Only
CC05347 **Sp. Cond.** mS/cm	1413	1759	+/- 15%	P / (F)	(Y) / N

- changed pH filling solution
463 nA - clean D.O. sensor

clean sensor

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value 4 → 7	Sensor Acceptance Criteria	Sensor Pass / Fail 7 → 10	Sensor Replaced or Solution Changed?
pH s.u.	7	7.05	+/- 0.1 pH unit (for pH 7)	(P) / F	-57.53	Slope -66 to -50 mV	-52.58 (P) F	Y (N)
	4	NA		NA	409	Off set 363 to 450	575	
	10							
DO mg/l			+/- 0.3 mg/l of sat value	P / F		Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	(P) F	3.6	Off set +/- 30 mV	(P) F	Y / (N)
Turb. NTU	0.0	-0.4	+/- 2 NTU	(P) F	0.02	Off set +/- 2 NTU (screen in dark cap)	(P) F	Y / (N)
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1410	+/- 10%	(P) F	0.26	K cell value 0.32 to 0.39	P (F)	(Y) N
	1413	1412		(P)	0.29			

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.06 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.68 ft

Spectrum Strength: error %

Stage reading from ISCO: 1.05 ft

Voltage reading from solar panels: 13.23 V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: 13.10 13.12 V

Monthly O&M

Solar panels cleaned and inspected?	(Y) / N
Manual (Marsh-McBirney) stream velocity reading:	0.23 FPS
ISCO stream velocity reading:	0.68 cf 0.59 FS
6712 Humidy Indicator:	(blue) / pink / white
	20 / 30 / 40
6712 Dessicant Replaced?	Y (N)

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant:	(blue) / pink / yellow / green
750 Dessicant replaced?	Y (N)
SDI-12 Dessicant Color:	(blue) / pink
SDI-12 Dessicant Replaced?	Y (N)

Notes: Cleaned D.O. sensor — initial reading 774 nA

Rev. 07/27/09

Spec. Cond. 10% vinegar improved kcell to 0.29 need to replace.

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-67-TT
Swanton

Inspector: Lou Emmons

Date: 9/21/09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Staff Gauge cleaned?	Y / N
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 48344 — Troll has some electrical connectivity issue. Shorts out between parameters

Reading check of In-Situ Troll sensors:

PP10921
DX05445
PP10921
TB04434
RTD

New membrane burn
changed pH filling sol

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	4.01	7.17	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	9.6	45.0	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	227	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.5	+/- 2 NTU	P / F	Y / N
Temp. °C	69.7	69.4	+/- 0.5 F	P / F	Annually Only
Sp. Cond. mS/cm	1413	1273	+/- 15%	P / F	Y / N

0.298 → 0.3

* cleaned w/ 10% Vinegar

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value 4→7	Sensor Acceptance Criteria	Sensor Pass / Fail 7 → 10	Sensor Replaced or Solution Changed?
pH s.u.	7	7.06	+/- 0.1 pH unit (for pH 7)	P / F	-57	Slope -66 to -50 mV	-52. P F	Y N
	4	NA		NA	410	Off set 363 to 450	376	
	10							
DO mg/l	9.232	9.208	+/- 0.3 mg/l of sat value	P / F	27.48	Slope 15 to 34 Off set 2	P F	Y / N
ORP mV	200	200	+/- 5 mV	P F	19.71	Off set +/- 30 mV	P F	Y / N
Turb. NTU	0.0	-0.2	+/- 2 NTU	P F	-0.28	Off set +/- 2 NTU (screen in dark cap)	P F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
Sp. Cond. mS/cm	1413	1265	+/- 10%	P / F	0.295	K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? (DO NOT LEAVE IN UNIT): Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: 1.36 ft (0.30 insitu)

Signal Strength: 13 %

Stage reading from staff gauge: .96 ft

Spectrum Strength: 82 %

Stage reading from ISCO: 1.318 ft

Voltage reading from solar panels: 13.39 V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: 13.26 13.25

Monthly O&M

Solar panels cleaned and inspected? Y / N

Manual (Marsh-McBirney) stream velocity reading: .45 FS

ISCO stream velocity reading: 23.80 CFS

6712 Humidity Indicator: blue / pink / white

20 / 30 / 40

6712 Dessicant Replaced? Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant: blue / pink / yellow / green

750 Dessicant replaced? Y / N

SDI-12 Dessicant Color: blue pink

SDI-12 Dessicant Replaced? Y / N

Notes: *Spec cond. Sensor needs replacement.

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-08-TT
USGS

Inspector: Forgey Emmm, Can
Date: 9/24/09

Weekly O&M

Data downloaded with RTD?	Y / N
Cable/Tubing inspected?	Y / N
Tubing need replacement?	Y / N
Debris cleared from in-stream Equipment?	Y / N
Sample Intake cleaned?	Y / N
Sample Intake upright?	Y / N
Staff Gauge cleaned?	~~Y / N~~
A/V Sensor cleaned?	Y / N
In-Situ Troll cleaned?	Y / N
Rain gauge cleaned and inspected?	Y / N
Cage/housing locked and secure?	Y / N
Telemetry Cable Connected?	Y / N

In-Situ S/N: 47352

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	4.01	3.93	+/- 0.5 pH unit	P / F	Y / N
DX05433 **DO** mg/l	8.528	8.865	+/- 0.7 mg/l of sat value	P / F	Y / N
CP10927 **ORP** mV	200	211	+/- 10 mV	P / F	Y / N
TB03970 **Turb.** NTU	0.0	-0.1	+/- 2 NTU	P / F	Y / N
Temp. °C	77.0	76.95	+/- 0.5 °C	P / F	Annually Only
LC 05679 **Sp. Cond.** mS/cm	1413	1389	+/- 15%	P / F	Y / N

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u. 6.99 173 -148	7	7.07	+/- 0.1 pH unit (for pH 7)	P / F	-51.96 / 370.67	Slope -66 to -50 mV Off set 363 to 450	P / F	Y / N soln.
	4	NA		NA				
	10							
231 ohm **DO** mg/l	8.511	8.825	+/- 0.3 mg/l of sat value	P / F	26.10 2.00	Slope 15 to 34 Off set 2	P / F	Y / N
207.7 **ORP** mV	200	200	+/- 5 mV	P / F	7.71	Off set +/- 30 mV	P / F	Y / N soln.
-0.23 NTU **Turb.** NTU	0.0	-0.2	+/- 2 NTU	P / F	-0.21	Off set +/- 2 NTU (screen in dark cap)	P / F	Y / N
Temp. °C			NA	P / F		NA	NA	Y / N
23.4 ohm **Sp. Cond.** mS/cm	1413	1369	+/- 10%	P / F	0.327	K cell value 0.32 to 0.39	P / F	Y / N

Batteries Replaced? *(DO NOT LEAVE IN UNIT)* Y / N

Manual stage reading (with ruler) from bottom of A/V sensor: _____ ft

Signal Strength: _____ %

Stage reading from staff gauge: _____ ft

Spectrum Strength: _____ %

Stage reading from ISCO: _____ ft

Voltage reading from solar panels: _____ V

Stage reading reset to (if +/- 0.1): _____ ft

Voltage reading from batteries: _____ / _____ V

Monthly O&M

Solar panels cleaned and inspected?	Y / N
Manual (Marsh-McBirney) stream velocity reading:	20 cfs
ISCO stream velocity reading:	4.169 cf
6712 Humidy Indicator:	blue / pink / white
	20 / 30 / 40
6712 Dessicant Replaced?	Y / N

750 Module ***(replace dessicant if velocity reading is +/- 2% of Isco reading)***

Color of 750 Dessicant:	blue / pink / yellow / green
750 Dessicant replaced?	Y / N
SDI-12 Dessicant Color:	blue / pink
SDI-12 Dessicant Replaced?	Y / N

Notes:

Rev. 07/27/09

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