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September 11, 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. 5.

This report covers the period from August 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

Baseflow Surface Water Monitoring
Monthly Report No. 5
(August 2009)

Industri-plex Superfund Site
Operable Unit 2
Woburn, Massachusetts

In accordance with the Surface Water Monitoring Plan (SWMP), this 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 (August 1 through August 31, 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:

    - raised the elevation of the Isco 750 area-velocity module sensor at the USGS/Mystic Ave monitoring station (SW-08-TT) to be the same as that of the USGS weir

    - removed the staff gage from the USGS/Mystic Ave monitoring station and surveyed the USGS bank-side staff gage relative to the local benchmark;

    - pulled the primary Isco 6712 unit at the Swanton Street monitoring station (SW-07-TT) for repairs and replaced with spare unit

    - pulled the secondary Isco 6712 unit from the Mishawum Road monitoring station (SW-04-TT) and shipped to Isco for repairs

2. Regular weekly O&M activities were performed at the surface water monitoring stations on August 6, 13, 20, 27 and 28, 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] 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 August 27 and August 28, 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 August 5, 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 gaging of stream flow was conducted on August 3 and August 4, 2009.

Data Generated During the Reporting Period

1. Water quality parameters recorded at the time of baseflow sampling on August 5, 2009 are provided in **Tables 1a through 1j**, along with the water quality measurements made during all previous "early action" baseflow sampling events. Note that during the August 5, 2009 baseflow sampling event, turbidity levels were much

[2] There is no piezometer at the Mishawum Road station (SW-04-TT).

greater than the ranges typically observed (due to build-up of a film on the sensors caused by a moderate rain event that occurred on August 1, 2009) and hence are not included in the tables.

2. Analytical results for the baseflow samples collected during the reporting period[3] 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]).

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

Data Analysis

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 the attached box-whisker plots. 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.[4] 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.[5]

[3] These results have not yet been validated.

[4] 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.

[5] 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

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

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

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

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

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

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

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

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

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

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

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

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 liminitations)
ERR = Equipment error (eg. Ice buildup, sensor drift, stage below sensor(s), struck by debris, and/or buildup pn sensor)

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

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

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

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

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

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

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

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

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Groundwater & Surface Water Investigation Plan													
SW-1	08/29/00	NC	--	0.0036J	0.0031U	--	--	8	--	--	--	--	--
	10/05/00	NC	--	0.0025U	0.0025U	--	--	5U	--	--	--	--	--
	04/05/01	NC	--	0.0035U	0.0035U	--	--	5U	--	--	--	--	--
Multiple Source Groundwater Response Plan													
SW-01-TT	07/14/01	NC	--	0.0037UJ	0.0012UJ	1.25	0.567	4.1	--	--	--	--	--
	08/23/01	NC	--	0.009U	0.0052U	1.1J	0.153J	6.8	--	--	--	--	--
	09/18/01	NC	--	0.0022J	0.0012U	0.457	0.134U	1.6J	--	--	--	--	--
	10/22/01	NC	--	0.003U	0.003U	0.378	0.218	4U	--	--	--	--	--
	11/19/01	NC	--	0.003U	0.003U	0.285J	0.114	1J	--	--	--	--	--
	12/17/01	NC	--	0.003U	0.0034J	0.591J	0.105J	10.4	--	--	--	--	--
	01/04/02	NC	--	0.003U	0.003U	0.847	0.22U	4	--	--	--	--	--
	02/15/02	NC	--	0.0024U	0.0024U	1.05	0.342	11J	--	--	--	--	--
	03/12/02	NC	--	0.0017U	0.0017U	0.725	0.395	2.4J	--	--	--	--	--
	04/17/02	NC	--	0.002U	0.002U	1.17J	0.499	5.7	--	--	--	--	--
	05/08/02	NC	--	0.002U	0.002U	1.16	0.538	3.4J	--	--	--	--	--
	06/20/02	NC	--	0.002U	0.002U	1.65	0.868	6.4J	--	--	--	--	--
	07/16/02	NC	--	0.0038	0.0013U	1.21	0.0742U	7.2	--	--	--	--	--
	08/06/02	NC	--	0.0032	0.0014J	0.915	0.075U	3.2J	--	--	--	--	--
	09/10/02	NC	--	0.0023UJ	0.0013U	0.732	0.105U	3.4J	--	--	--	--	--
	10/18/02	NC	--	0.0042J	0.003U	2.06	0.0818U	20.4	--	--	--	--	--
	10/25/02	NC	--	0.003U	0.003U	0.373	0.152	2UJ	--	--	--	--	--
Remedial Design "Early Action"													
SW-01-TT	08/21/08	NM	0.5U	0.005J	0.005J	--	--	5U	3.51	0.13	1.2	2.6	0.3U
	09/18/08	NM	0.5U	0.005U	0.005U	--	--	5U	3.13	0.06	1.1	3.7	0.57
	10/09/08	NM	0.5U	0.005U	0.005U	--	--	5U	3.98	0.08	1	4.8	0.82
	11/05/08	~5	0.5U	0.005U	0.005U	--	--	6	2.58	0.04J	0.81	4	1.4
	12/09/08	6.78	0.5U	0.003U	0.003U	--	--	8.1	3.96	0.01J	7.6	5	1
	01/20/09	NM	0.5U	0.003U	0.003U	--	--	7.9	3.24	0.034J	1	3.6	0.36
	02/02/09	7.28	0.5U	0.003U	0.003U	--	--	5U	2.89	0.06	1.1	3.5	0.61
	03/18/09	9.95	0.5U	0.003U	0.003U	--	--	5U	2.75	0.05U	1.1	3.8	1
	04/01/09	9.15	0.5U	0.003U	0.003U	--	--	12	2.09	0.05U	0.86	3.2	1.1
Surface Water Monitoring Plan													
SW-01-TT	04/17/09	8.86	0.5U	0.005	0.003	0.92	0.26	5U	2.43	0.036J	1	3	0.57
	05/12/09	7.53	0.5U	0.002J	0.003U	1.3	0.5	5U	2.97	0.05	0.96	3.8	0.83
	06/02/09	4.19	0.5U	0.003	0.003U	0.76	0.23	5U	2.39	0.32	0.96	2.7	0.31
	07/15/09	0.81	0.5U	0.005	0.0025J	1.3	0.72	5U	3.34	0.13	0.99	3.9	0.56
	08/05/09*	0.81	0.5U	0.0026J	0.003U	1.4	0.74	5U	2.99	0.07	1	3.7	0.71

Notes:

†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
NM = Not measured (e.g., insufficient flow and/or due to equipment limitations)
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Groundwater & Surface Water Investigation Plan													
SW-2	08/29/00	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/05/00	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	04/05/01	NC	--	0.0098B	0.0068B	--	--	10.8	--	--	--	--	--
Remedial Design "Early Action"													
SW-2-IP	08/21/08	NM	0.5U	0.007	0.005U	--	--	5U	0.088	0.05J	0.24	0.4	0.31
	09/18/08	NM	0.5U	0.005U	0.005U	--	--	5U	0.075J	0.05U	0.15	0.47	0.47
	10/09/08	NM	0.5U	0.005U	0.005U	--	--	5U	0.0618J	0.034J	0.32	0.35	0.35
	11/05/08	0.02	0.5U	0.0028J	0.005U	--	--	5U	0.0623J	0.05U	0.4	0.86	0.86
	12/09/08	0.79	0.5U	0.003U	0.003U	--	--	5U	0.402	0.02U	0.52	0.71	0.31
	01/20/09	NM	0.5U	0.003U	0.003U	--	--	5U	1.74	0.05U	0.57	2	0.3U
	02/02/09	NM	0.5U	0.003U	0.003U	--	--	5U	1.13	0.044J	0.62	1.9	0.77
	03/18/09	1.57	0.5U	0.003U	0.003U	--	--	5U	0.328	0.05U	1.1	0.8	0.47
	04/01/09	NM	0.5U	0.003U	0.003U	--	--	5U	0.403	0.05U	0.89	0.87	0.47
Surface Water Monitoring Plan													
SW-2-IP	04/17/09	1.34	0.5U	0.003U	0.003U	0.23	0.08	5U	0.0468J	0.05U	0.87	0.46U	0.46
	05/12/09	1.47	0.5U	0.003U	0.003U	0.59	0.037J	5U	0.103	0.05U	0.21	0.9U	0.8
	06/02/09	NM	0.5U	0.0023J	0.0025J	1.2	0.4	5U	0.088	0.05U	0.46	0.58	0.49
	07/15/09	0.45	0.5U	0.0023J	0.003	0.74	0.35	5U	0.091	0.14	0.32	0.44	0.35
	08/05/09*	1.18	0.5U	0.003U	0.003U	1	0.46	5U	0.107	0.05U	0.25	0.47	0.36

Notes:

†Flows are subject to revision pending review of accuracy of rating curves.
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)
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Groundwater & Surface Water Investigation Plan													
SW-3	08/29/00	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/05/00	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	04/05/01	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Remedial Design "Early Action"													
SW-3-IP	08/21/08	NM	--	--	--	--	--	--	23.5	--	--	--	--
	09/18/08	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	10/09/08	NM	0.5U	0.0028J	0.0047J	--	--	84	12.3	0.15	1.1	13	0.7
	11/05/08	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/09/08	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	01/20/09	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	02/02/09	NM	0.43J	0.22	0.029	--	--	650	15.7	0.11	1.2	16	0.3
	03/18/09	0.11	3.5	0.144	0.029	--	--	93	22.6	0.036J	1.3	24	1.4
	04/01/09	NM	3.2	0.087	0.055	--	--	35	25.5	0.034J	1.1	26	0.5
Surface Water Monitoring Plan													
SW-3-IP	04/17/09	0.09	1.3	0.419	0.037	39	2.6	1100	20.1	0.08	1.8	22	1.9
	05/12/09	NM	0.5U	0.028	0.004	1.7	0.08	140	11.5	0.13	1.5	12	0.5
	06/02/09	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	07/15/09	NM	0.5U	0.01	0.006	0.42	0.05	5U	14.3	0.22	1.1	14	0.3U
	08/05/09*	NM	0.5U	0.032	0.009	1.1	0.028J	5U	17.3	0.1	0.55	18	0.7

Notes:

†Flows are subject to revision pending review of accuracy of rating curves.
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)
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Groundwater & Surface Water Investigation Plan													
SW-4	08/29/00	NC	--	0.0211	0.0031U	1.15	--	5U	--	--	--	--	--
	10/05/00	NC	--	0.0131	0.0025U	0.966	--	5U	--	--	--	--	--
	04/05/01	NC	--	0.0069J	0.0112J	1.05	--	5U	--	--	--	--	--
Multiple Source Groundwater Response Plan													
SW-02-TT	07/14/01	NC	--	0.0217	0.0096J	2.28	1.12	4.3	--	--	--	--	--
	08/23/01	NC	--	0.0209	0.0058U	1.6J	0.349	4.6	--	--	--	--	--
	09/18/01	NC	--	0.0173	0.0045	1.1	0.114U	5.6J	--	--	--	--	--
	10/22/01	NC	--	0.0312	0.0032J	2.23	0.159	5.6	--	--	--	--	--
	11/19/01	NC	--	0.0431	0.004J	3.51J	0.0472	12.8J	--	--	--	--	--
	12/17/01	NC	--	0.0235	0.0045J	2.82J	0.0992J	9.6	--	--	--	--	--
	01/04/02	NC	--	0.0118	0.0055J	1.53	0.193U	1.6	--	--	--	--	--
	02/15/02	NC	--	0.0119	0.005	1.79	0.309	4J	--	--	--	--	--
	03/12/02	NC	--	0.0205	0.0079	2.21	0.548	5.8J	--	--	--	--	--
	04/17/02	NC	--	0.0113	0.0061	1.41J	0.706	3.2	--	--	--	--	--
	05/08/02	NC	--	0.0122	0.008	1.66	0.952	3J	--	--	--	--	--
	06/20/02	NC	--	0.0136U	0.0065U	1.85	0.676	4.4J	--	--	--	--	--
	07/16/02	NC	--	0.0232	0.0031	1.84	0.042U	4.4	--	--	--	--	--
	08/06/02	NC	--	0.0281	0.0044	1.91	0.0509U	6.6J	--	--	--	--	--
	09/10/02	NC	--	0.0168	0.0024UJ	1.36	0.0407U	2.8J	--	--	--	--	--
	10/18/02	NC	--	0.0774	0.0083	6.52	0.297	23.6	--	--	--	--	--
	10/25/02	NC	--	0.0236	0.0054J	1.82	0.351	4UJ	--	--	--	--	--
Remedial Design "Early Action"													
SW-02-TT	08/21/08	NM	0.5U	0.029	0.006	--	--	5U	7.73	0.1	0.76	8.2	0.47
	09/18/08	NM	0.5U	0.021	0.005U	--	--	5U	6.01	0.08	0.82	6.8	0.79
	10/09/08	NM	0.5U	0.019	0.0048J	--	--	5U	5.39	0.07	0.81	6.2	0.81
	11/05/08	8.44	0.5U	0.02	0.005	--	--	5U	5.52J	0.05U	0.57	6.3	0.78
	12/09/08	~6	0.34J	0.017	0.009	--	--	5U	5.51	0.01J	0.88	6	0.49
	01/20/09	NM	0.5U	0.009	0.004	--	--	5U	4.11	0.027J	0.99	4.6	0.49
	02/02/09	~5	0.28J	0.015	0.011	--	--	5U	3.93	0.07	0.98	4.4	0.47
	03/18/09	NM	0.9	0.015	0.01	--	--	5U	4.6	0.05U	0.96	5.6	1
	04/01/09	~6	0.7	0.014	0.007	--	--	5U	3.51	0.05U	0.79	4.7	1.2
Surface Water Monitoring Plan													
SW-02-TT	04/17/09	8.62	0.46J	0.015	0.006	1.4	0.2	5U	4.12	0.05U	1	5.9	1.8
	05/12/09	4.27	0.27J	0.017	0.006	1.9	0.33	5U	4.93	0.043J	0.7	5.6	0.67
	06/02/09	0.90	0.5U	0.018	0.008	1.4	0.06	5U	5.87	0.14	0.78	6.6	0.73
	07/15/09	2.10	0.5U	0.014	0.01	1.6	0.97	5U	3.69	0.07	0.82	4.6	0.91
	08/05/09*	2.44	0.5U	0.009	0.007	1.7	0.84	5U	3.03	0.07	0.82	3.7	0.67

Notes:

†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)
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan													
SW-03-TT	07/14/01	NC	--	0.0129	0.0096J	1.94	1.12	3.6	--	--	--	--	--
	08/23/01	NC	--	0.0184	0.0104U	1.83J	0.568	3.6	--	--	--	--	--
	09/18/01	NC	--	0.0281	0.0179	3.13	1.46	6.4J	--	--	--	--	--
	10/22/01	NC	--	0.018	0.0136	2.13	0.985	4.8	--	--	--	--	--
	11/19/01	NC	--	0.032	0.0242	3.53J	2.43	10.4J	--	--	--	--	--
	12/17/01	NC	--	0.029	0.0224	3.32J	1.97	6	--	--	--	--	--
	01/04/02	NC	--	0.0278	0.019	3.42	2.11	10.6	--	--	--	--	--
	02/15/02	NC	--	0.0128	0.0118	1.63	1.14	1.4J	--	--	--	--	--
	03/12/02	NC	--	0.0066	0.0076	1.04	0.935	1.4J	--	--	--	--	--
	04/17/02	NC	--	0.0071U	0.0058U	1.16J	0.78	2.1	--	--	--	--	--
	05/08/02	NC	--	0.0135	0.0065	2.57	0.773	2J	--	--	--	--	--
	06/20/02	NC	--	0.0111U	0.0057U	1.82	0.778	4UJ	--	--	--	--	--
	07/16/02	NC	--	0.0246	0.0134	3.07	1.11	5.2	--	--	--	--	--
	08/06/02	NC	--	0.0325	0.0147	3.16	0.682	7J	--	--	--	--	--
	08/31/02	NC	--	0.0195	0.0037UJ	1.73	0.14U	8.8J	--	--	--	--	--
	09/10/02	NC	--	0.0348	0.0161	3.57	1.31	5.4J	--	--	--	--	--
	10/18/02	NC	--	0.0284	0.003U	3.14	0.0721U	17.2	--	--	--	--	--
	10/25/02	NC	--	0.0072	0.006	1.15	0.683	3J	--	--	--	--	--
Surface Water Monitoring Plan													
SW-03-TT	04/17/09	8.58	0.5U	0.006	0.004	--	--	5U	0.778	0.06	1.6	1.2	0.42
	05/12/09	8.15	0.5U	0.006	0.004	--	--	5U	0.905	0.13	1.3	1.6	0.7
	06/02/09	3.82	0.5U	0.008	0.006	--	--	5U	1.72	0.43	1.5	2.2	0.48
	07/15/09	0.85	0.5UJ	0.007	0.011	--	--	5U	0.837	0.38	2	0.83	0.3U
	08/05/09*	3.63	0.5U	0.007	0.006	--	--	5U	0.572	0.24	2.3	1.2	0.63

Notes:

†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
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Groundwater & Surface Water Investigation Plan													
SW-9	08/29/00	NC	--	0.0235	0.0031U	2.77	--	8.5	--	--	--	--	--
	10/05/00	NC	--	0.0126	0.0123	1.54	--	5U	--	--	--	--	--
	04/05/01	NC	--	0.0035U	0.0038J	0.883	--	5U	--	--	--	--	--
Multiple Source Groundwater Response Plan													
SW-04-TT	07/14/01	NC	--	0.023	0.0101J	3.09	1.6	4.5	--	--	--	--	--
	08/23/01	NC	--	0.0501	0.014	6.14J	0.616	20.4	--	--	--	--	--
	09/18/01	NC	--	0.0246	0.005	3.3	0.14U	54.4J	--	--	--	--	--
	10/22/01	NC	--	0.0193	0.0031J	2.72	0.121	6.4	--	--	--	--	--
	11/19/01	NC	--	0.0649	0.005J	9.66J	0.0666	109J	--	--	--	--	--
	12/17/01	NC	--	0.171	0.0049J	27.9J	0.109J	85	--	--	--	--	--
	01/04/02	NC	--	0.0242	0.0044J	3.84	0.361	9	--	--	--	--	--
	02/15/02	NC	--	0.0251	0.0037J	3.9	0.409	8.2J	--	--	--	--	--
	03/12/02	NC	--	0.0166	0.006	2.1	0.626	4.8J	--	--	--	--	--
	04/17/02	NC	--	0.0135	0.0077U	1.88J	0.741	5.2	--	--	--	--	--
	05/08/02	NC	--	0.0086	0.0082	1.28	1.2	5.3J	--	--	--	--	--
	06/20/02	NC	--	0.0238	0.0093U	3.73	1.34	4J	--	--	--	--	--
	07/16/02	NC	--	0.0396	0.0062	4.52	0.0484U	12.6	--	--	--	--	--
	08/06/02	NC	--	0.0368	0.009	3.8	0.0791U	13.6J	--	--	--	--	--
	09/10/02	NC	--	0.0314	0.0052U	3.64	0.0356U	9.2J	--	--	--	--	--
	10/18/02	NC	--	0.0478	0.0141	4.6	1.14	15.6	--	--	--	--	--
	10/25/02	NC	--	0.0207	0.0045J	2.76	0.447	8.6J	--	--	--	--	--
Remedial Design "Early Action"													
SW-04-TT	08/21/08	NM	0.5U	0.025	0.007	--	--	5U	6.92	0.12	0.8	7.3	0.38
	09/18/08	NM	0.5U	0.022	0.005J	--	--	5U	5.29	0.09	0.8	5.7	0.41
	10/09/08	NM	0.5U	0.02	0.003J	--	--	5U	5.18	0.09	0.95	5.7	0.52
	11/05/08	NM	0.5U	0.018	0.006	--	--	5U	6.22J	0.047J	0.65	7.2	0.98
	12/09/08	NM	0.5U	0.023	0.007	--	--	5U	5.36	0.01J	0.8	6	0.64
	01/20/09	10.01	0.5U	0.02	0.008	--	--	5.3	4.44	0.05U	0.94	5.1	0.66
	02/02/09	9.21	0.5U	0.013	0.008	--	--	5U	3.71	0.029J	0.92	4.4	0.69
	03/18/09	8.98	0.5U	0.012	0.005	--	--	5U	4.08	0.05U	0.95	5	0.92
	04/01/09	9.06	0.46J	0.012	0.006	--	--	5U	3.72	0.05U	0.74	4.5	0.78
Surface Water Monitoring Plan													
SW-04-TT	04/17/09	5.56	0.5U	0.016	0.006	--	--	5U	3.83	0.05U	0.96	4.6	0.77
	05/12/09	0.75	0.5U	0.018	0.004	--	--	5U	3.87	0.06	0.75	4.7	0.83
	06/02/09	3.42	0.5U	0.018	0.009	--	--	5U	5.12	0.049J	0.9	6	0.88
	07/15/09	4.31	0.5UJ	0.021	0.005	--	--	6	2.67	0.15	0.76	3.3	0.63
	08/05/09*	4.47	0.5U	0.017	0.012	--	--	5U	2.27	0.22	1	2.8	0.53

Notes:
†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)
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan													
SW-05-TT	07/14/01	NC	--	0.0218	0.0114J	2.88	1.48	4.5	--	--	--	--	--
	08/23/01	NC	--	0.0261	0.013U	2.46J	0.522	2	--	--	--	--	--
	09/18/01	NC	--	0.0191	0.0043	2.27	0.254	6.4J	--	--	--	--	--
	10/22/01	NC	--	0.0197	0.0072	2.23	0.373	5.2	--	--	--	--	--
	11/19/01	NC	--	0.0238	0.0057J	3.05J	0.134	10J	--	--	--	--	--
	12/17/01	NC	--	0.0248	0.0102	2.93J	0.66	9.2	--	--	--	--	--
	01/04/02	NC	--	0.0195	0.0077	2.71	0.83	7.6	--	--	--	--	--
	02/15/02	NC	--	0.0142	0.0047J	2.04	0.489	5.4J	--	--	--	--	--
	03/12/02	NC	--	0.0091	0.0046	1.46	0.659	2.6J	--	--	--	--	--
	04/17/02	NC	--	0.0158	0.0064U	1.94J	0.511	7.3	--	--	--	--	--
	05/08/02	NC	--	0.013	0.0061	2.17	0.865	5.8J	--	--	--	--	--
	06/20/02	NC	--	0.0239	0.0072U	3.46	0.927	6.4J	--	--	--	--	--
	07/16/02	NC	--	0.028	0.0038	3.02	0.0238U	5.4	--	--	--	--	--
	08/06/02	NC	--	0.0241	0.0044	1.95	0.0089UJ	6.8J	--	--	--	--	--
	08/31/02	NC	--	0.0126	0.0025U	1.16	0.0884U	3J	--	--	--	--	--
	09/10/02	NC	--	0.0238	0.0052U	2.44	0.0087U	5.2J	--	--	--	--	--
	10/18/02	NC	--	0.012	0.003U	1.46	0.244	6.8	--	--	--	--	--
	10/25/02	NC	--	0.0143	0.0041J	2.15	0.657	5.6J	--	--	--	--	--
Surface Water Monitoring Plan													
SW-05-TT	04/17/09	48.55	0.5U	0.009	0.003	--	--	5U	2.09	0.048J	1.3	3.1	1
	05/12/09	48.94	0.5U	0.012	0.003	--	--	5U	2.18	0.08	1	2.7	0.52
	06/02/09	33.94	0.5U	0.014	0.006	--	--	5U	2.88	0.13J	1.2	3.6	0.72
	07/15/09	9.47	0.5UJ	0.011	0.006	--	--	5U	1.23	0.25	1.3	1.6	0.37
	08/05/09*	10.07	0.5U	0.009	0.005	--	--	5U	0.366	0.2	2.1	1.1	0.73

Notes:
†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
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan													
SW-06-TT	07/14/01	NC	--	0.0147	0.0071J	2.05	0.961	4.2	--	--	--	--	--
	08/23/01	NC	--	0.015	0.008U	1.4J	0.355	4.8	--	--	--	--	--
	09/18/01	NC	--	0.0101	0.0029	1.08	0.14U	3.6J	--	--	--	--	--
	10/22/01	NC	--	0.0189	0.003U	2.6	0.355	15.6	--	--	--	--	--
	11/19/01	NC	--	0.018	0.003U	2.56J	0.11	6.4J	--	--	--	--	--
	12/17/01	NC	--	0.0112	0.0043J	1.3J	0.19J	3.6	--	--	--	--	--
	01/04/02	NC	--	0.01	0.003U	1.52	0.254U	3	--	--	--	--	--
	02/15/02	NC	--	0.0092	0.0029J	1.31	0.277	3.4J	--	--	--	--	--
	03/12/02	NC	--	0.0055	0.0021J	0.982	0.431	2.2J	--	--	--	--	--
	04/17/02	NC	--	0.0038	0.004U	0.359J	0.32	5.2	--	--	--	--	--
	05/08/02	NC	--	0.0066	0.004	1.35	0.5	4.6J	--	--	--	--	--
	06/20/02	NC	--	0.0148	0.0026UJ	2.18	0.588	4.4J	--	--	--	--	--
	07/16/02	NC	--	0.0133	0.0013U	1.51	0.0276U	5	--	--	--	--	--
	08/06/02	NC	--	0.0112	0.0028	1.01	0.0098UJ	3.3J	--	--	--	--	--
	09/10/02	NC	--	0.0084	0.0016UJ	1.11	0.0087U	3.2J	--	--	--	--	--
	10/18/02	NC	--	0.0255	0.0026J	3.4	0.378	27.8	--	--	--	--	--
	10/25/02	NC	--	0.0076	0.0033J	1.09	0.375	2UJ	--	--	--	--	--
Surface Water Monitoring Plan													
SW-06-TT	04/17/09	9.09	0.5U	0.008	0.005	--	--	5U	1.38	0.07	1.5	2.9	1.5
	05/12/09	13.25	0.5U	0.009	0.0027J	--	--	5U	1.43	0.08	1.3	2.7	1.3
	06/02/09	7.03	0.5U	0.01	0.004	--	--	5U	1.8	0.14	1.6	2.4	0.6
	07/15/09	3.74	0.5UJ	0.01	0.005	--	--	5U	0.591	0.2	1.6	1	0.41
	08/05/09*	5.51	0.5U	0.009	0.0026J	--	--	5U	0.181	0.07	2	0.78	0.6

Notes:

†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
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (mg/l)	Total Organic Nitrogen (mg/l)
Multiple Source Groundwater Response Plan													
SW-07-TT	07/14/01	NC	--	0.0094UJ	0.0045J	1.46	0.699	50	--	--	--	--	--
	08/23/01	NC	--	0.0109U	0.0047U	1.01J	0.254J	4.6	--	--	--	--	--
	09/18/01	NC	--	0.0063	0.0015J	1.02	0.139U	2.8J	--	--	--	--	--
	10/22/01	NC	--	0.0056J	0.003U	0.951	0.243	4U	--	--	--	--	--
	11/19/01	NC	--	0.0047J	0.003U	0.779J	0.143	1.2J	--	--	--	--	--
	12/17/01	NC	--	0.0053J	0.003U	1.06J	0.316J	3	--	--	--	--	--
	01/04/02	NC	--	0.0057J	0.003U	1.08	0.163U	2.4	--	--	--	--	--
	02/15/02	NC	--	0.0066	0.0024J	1.2	0.249	7.6J	--	--	--	--	--
	03/12/02	NC	--	0.0041	0.0017U	0.887	0.331	8.4J	--	--	--	--	--
	04/17/02	NC	--	0.0075	0.0037	1.21J	0.371	5.2	--	--	--	--	--
	05/08/02	NC	--	0.0061	0.0023J	1.24	0.394	7J	--	--	--	--	--
	06/20/02	NC	--	0.0105U	0.0034UJ	1.8	0.396	10J	--	--	--	--	--
	07/16/02	NC	--	0.0065	0.0013U	1.13	0.0229U	4	--	--	--	--	--
	08/06/02	NC	--	0.0083	0.0033	1.18	0.018U	3.5J	--	--	--	--	--
	08/31/02	NC	--	0.0048J	0.0025U	0.777	0.0495U	6J	--	--	--	--	--
	09/10/02	NC	--	0.0079U	0.0035U	1.05	0.0156UJ	2.2J	--	--	--	--	--
	10/18/02	NC	--	0.0112	0.0036J	1.66	0.224	5.4	--	--	--	--	--
	10/25/02	NC	--	0.0048J	0.003U	0.978	0.373	5.2J	--	--	--	--	--
Surface Water Monitoring Plan													
SW-07-TT	04/17/09	90.86	0.5U	0.005	0.002J	--	--	5U	0.787	0.05	1.7	1.2	0.41
	05/12/09	84.97	0.5U	0.008	0.0026J	--	--	5U	0.706	0.1	1.5	1.5	0.79
	06/02/09	73.67	0.5U	0.008	0.005	--	--	8	0.638	0.22	2	1.2	0.56
	07/15/09	29.81	0.5UJ	0.007	0.004	--	--	5U	0.263	0.13	1.8	0.81	0.55
	08/05/09*	29.92	0.5U	0.005	0.004	--	--	5U	0.234	0.036J	2	1.2	0.97

Notes:
†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.
* = Not yet validated

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

Sample ID	Date	Flow† (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)	Nitrate (mg/l)	TKN (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	1.4	0.96	0.48
	05/12/09	126.00	0.5U	0.005	0.003U	--	--	5U	0.42	0.09	1.3	1	0.58
	06/02/09	108.51	0.5U	0.007	0.0026J	--	--	5U	0.528	0.14	1.7	1.1	0.57
	07/15/09	143.70	0.5UJ	0.005	0.003	--	--	5U	0.186U	0.1	1.2	0.99	0.8
	08/05/09*	142.17	0.5U	0.003	0.0023J	--	--	5U	0.203	.033J	1.3	0.77	0.57

Notes:

†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.
* = Not yet validated

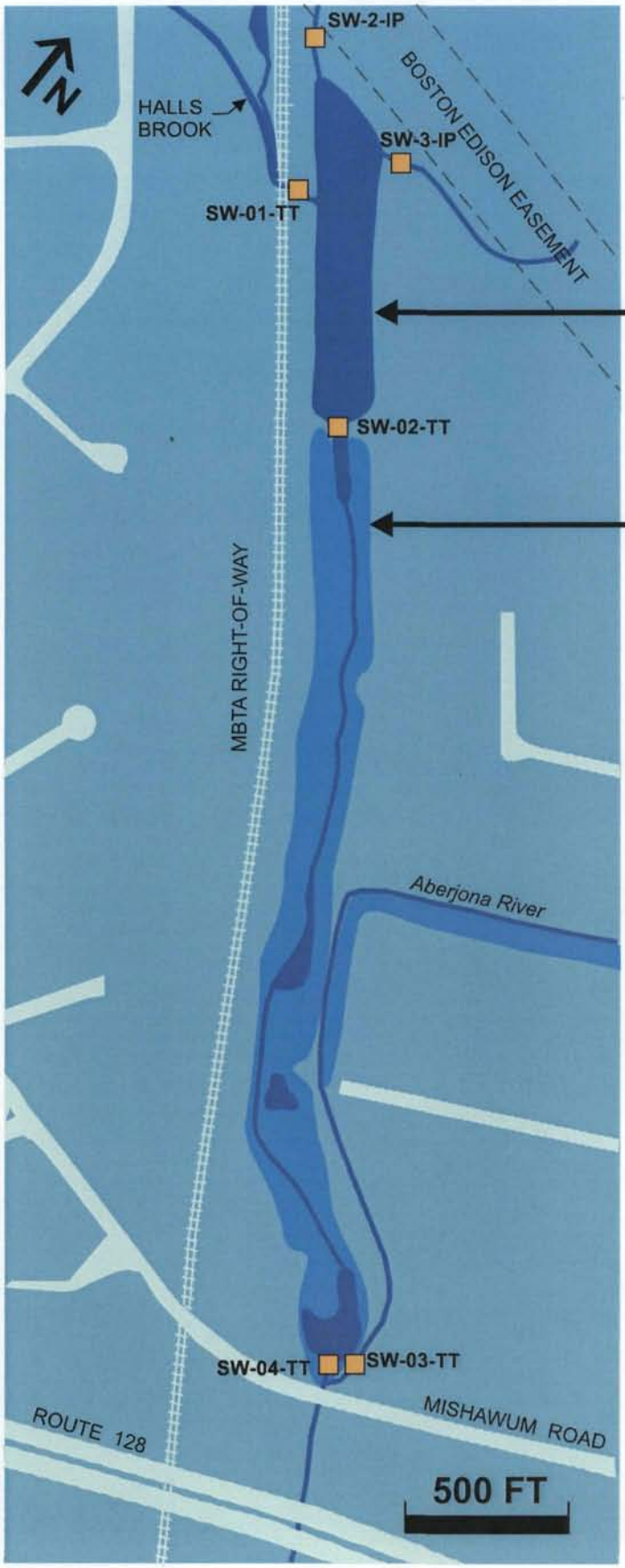
Table 3
Relative Surface Water and Groundwater Elevations at Time of Baseflow Sampling
Industri-Plex Superfund Site Operable Unit 2
Woburn, Massachusetts

Station ID	Station Description	Date	Surface Water			Groundwater			Gradient
			Measuring Point[1] (ft)	Staff Gage Reading (ft)	Surface Water Elevation[2] (ft)	Measuring Point[3] (ft)	Depth to Water (ft)	Groundwater Elevation[2] (ft)	
SW-01-TT	Halls Brook	08/05/09	92.98	1.21	94.19	96.87	5.42	91.45	Down
SW-2-IP	AAD	08/05/09	92.34	0.60	92.94	95.16	3.41	91.75	Down
SW-3-IP	BECO ROW	08/05/09	93.66	NM	NA	97.76	2.68	95.08	NA
SW-02-TT	HBHA Pond Outlet	08/05/09	97.77	1.20	98.97	103.88	5.91	97.97	Down
SW-03-TT	Aberjona	08/05/09	93.46	0.76	94.22	97.41	3.10	94.31	Up
SW-05-TT	Salem Street	08/05/09	94.16	1.32	95.48	98.23	2.79	95.44	Down
SW-06-TT	Montvale Avenue	08/05/09	92.76	1.82	94.58	98.48	3.85	94.63	Up
SW-07-TT	Swanton Street	08/05/09	90.11	1.12	91.23	93.87	2.43	91.44	Up
SW-08-TT	USGS / Mystic Avenue	08/05/09	89.45	2.99	92.44	95.28	3.29	91.99	Down

Notes:
1. Reference point is base of gage (0.00 feet)
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
NA = Not applicable
NM = Not measured due to sand bar build-up against the staff gage which prohibited an accurate stage reading

FIGURES



LEGEND

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

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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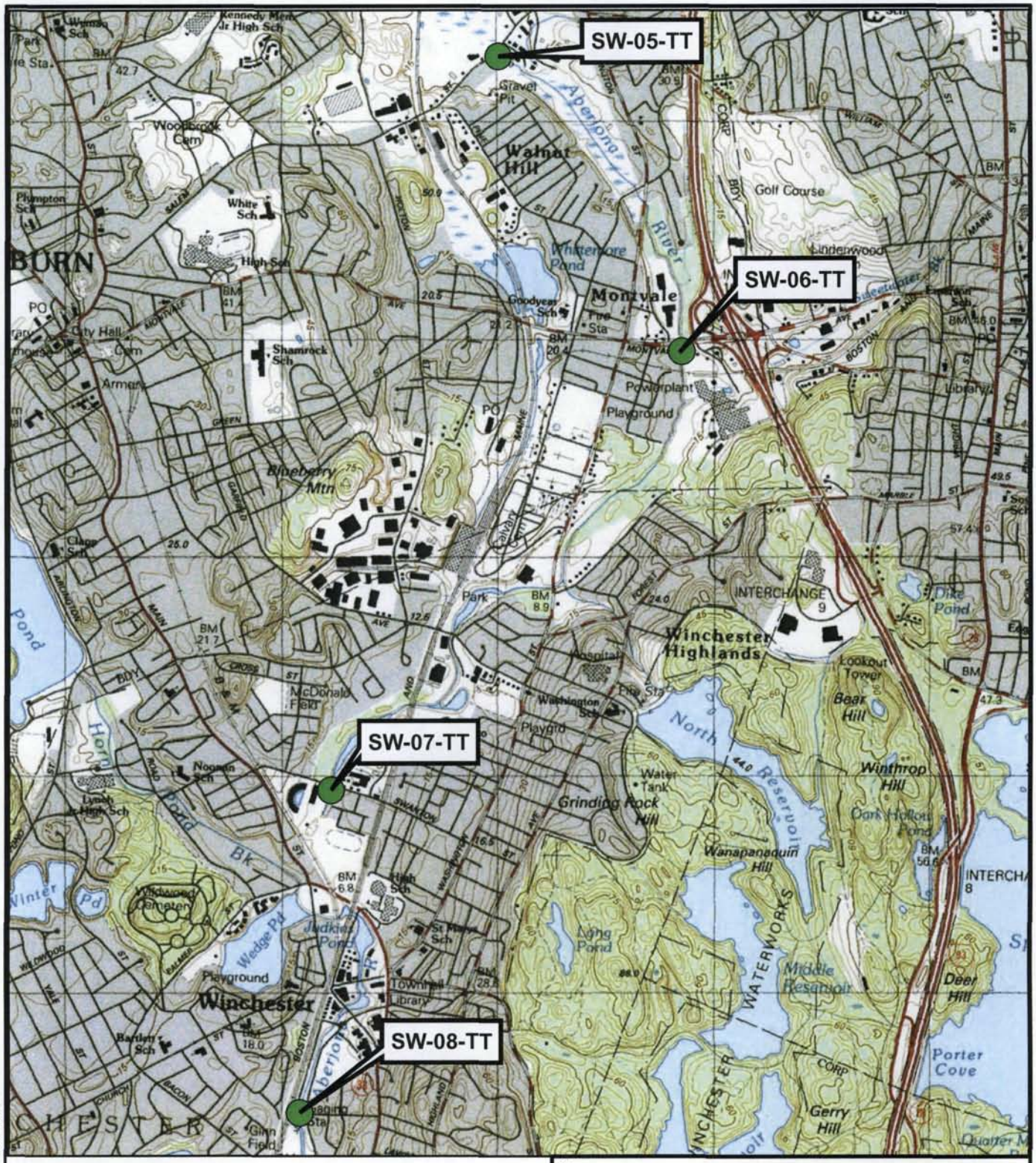

QUADRANGLE LOCATION

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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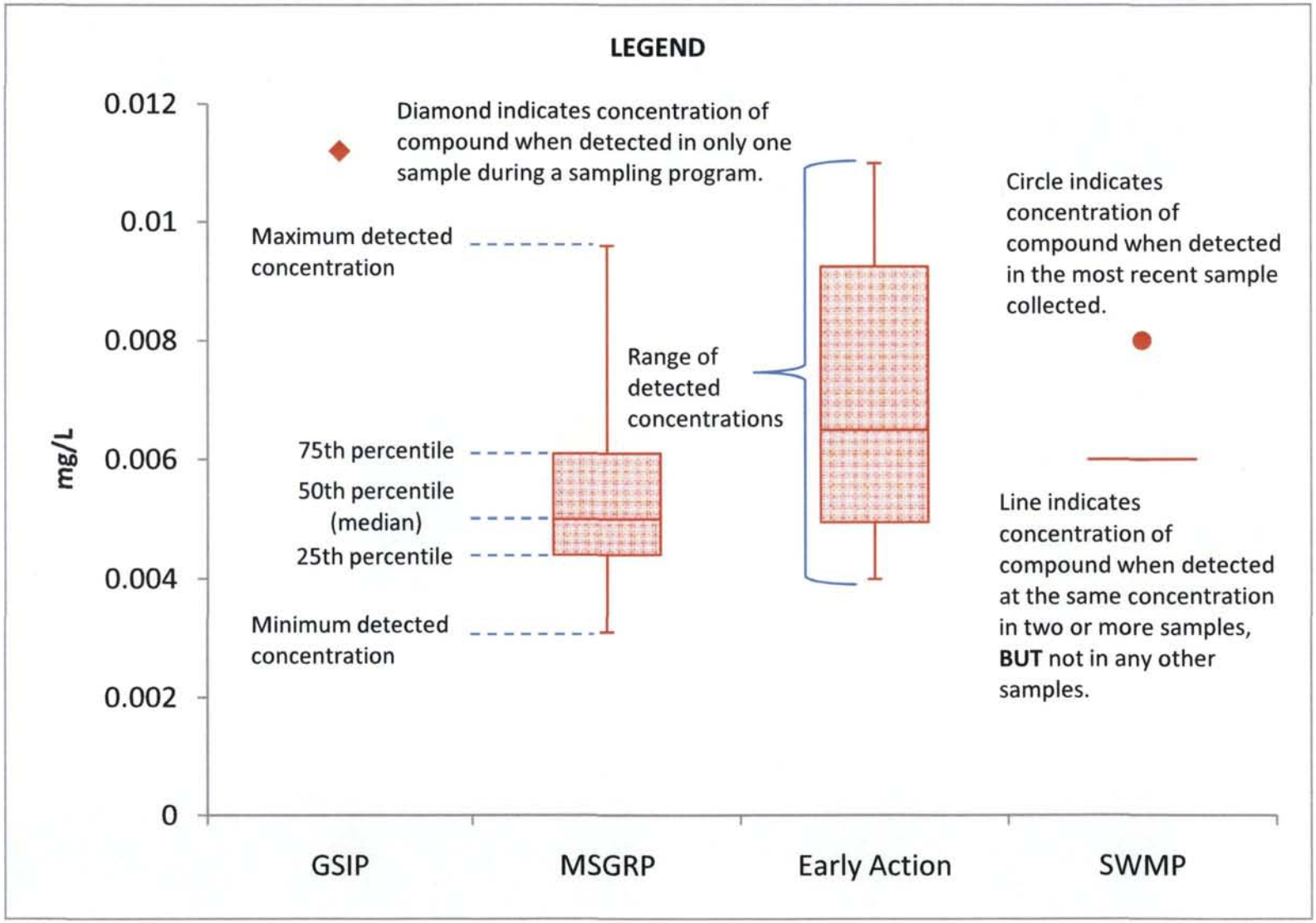
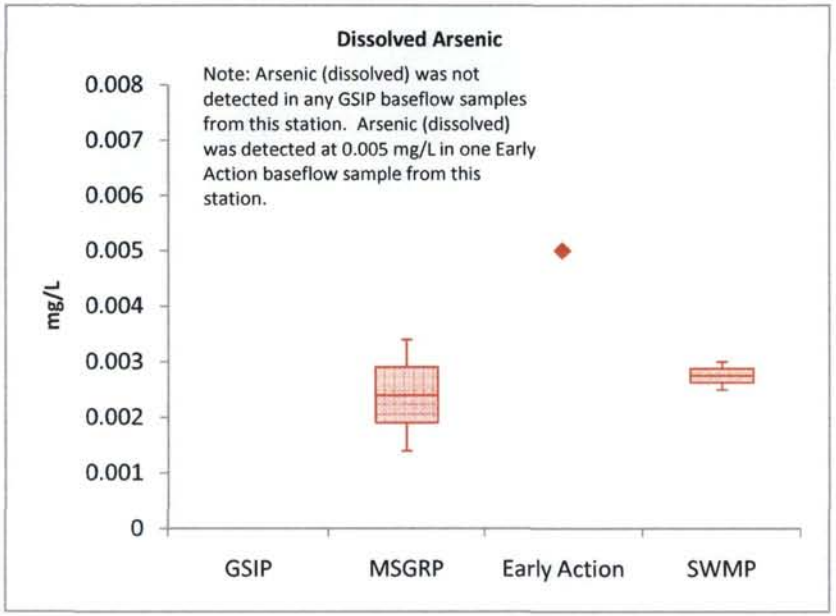
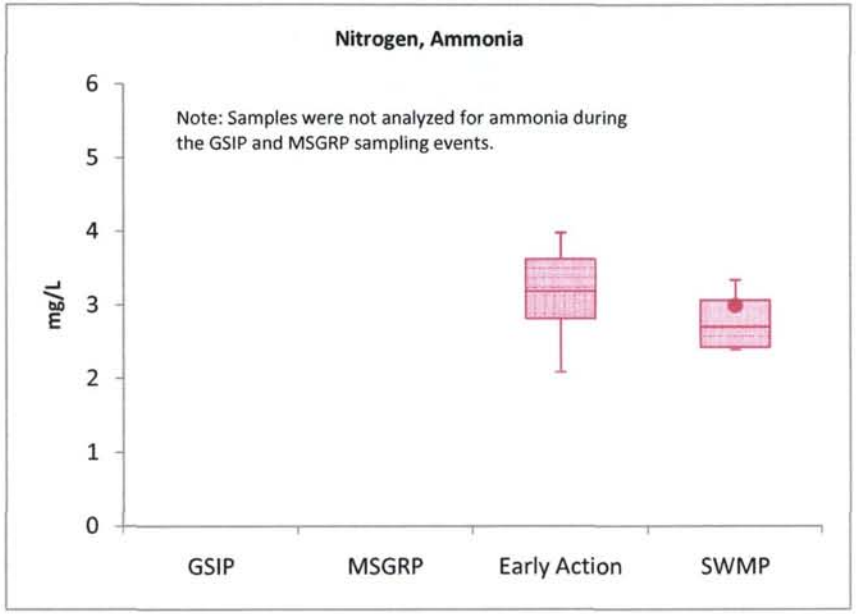
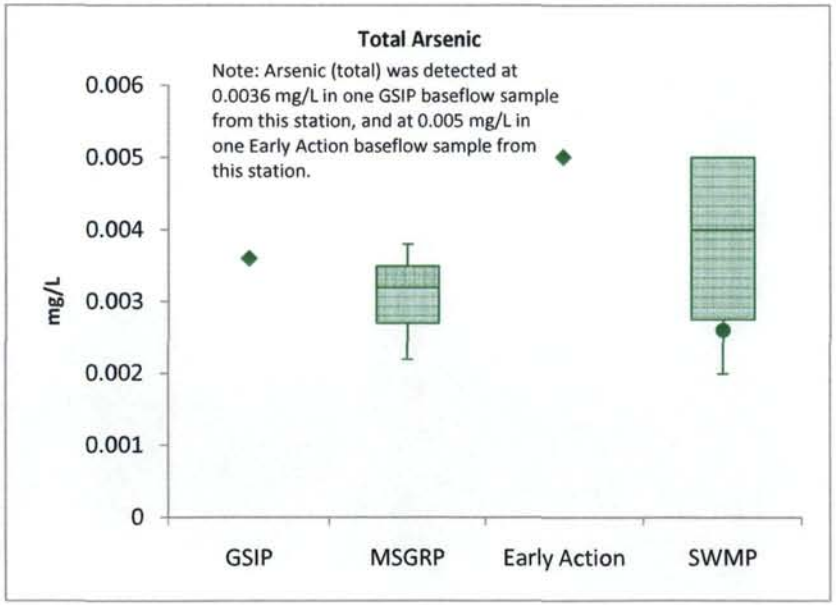
ATTACHMENTS

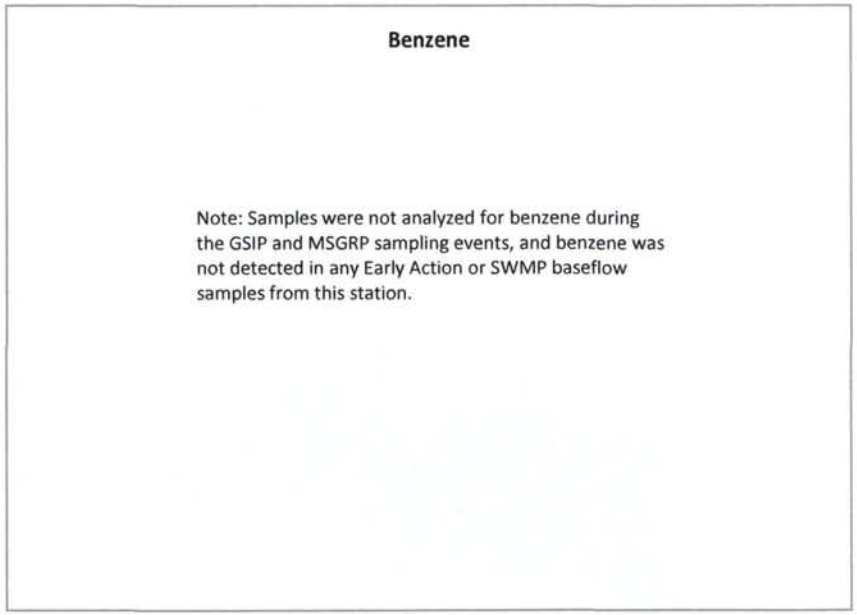

LEGEND
0.012
0.01
0.008
0.006
0.004
0.002
0
mg/L
Diamond indicates concentration of compound when detected in only one sample during a sampling program.
Maximum detected concentration
Range of detected concentrations
75th percentile
50th percentile (median)
25th percentile
Minimum detected concentration
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.
GSIP
MSGRP
Early Action
SWMP

SW-01-TT

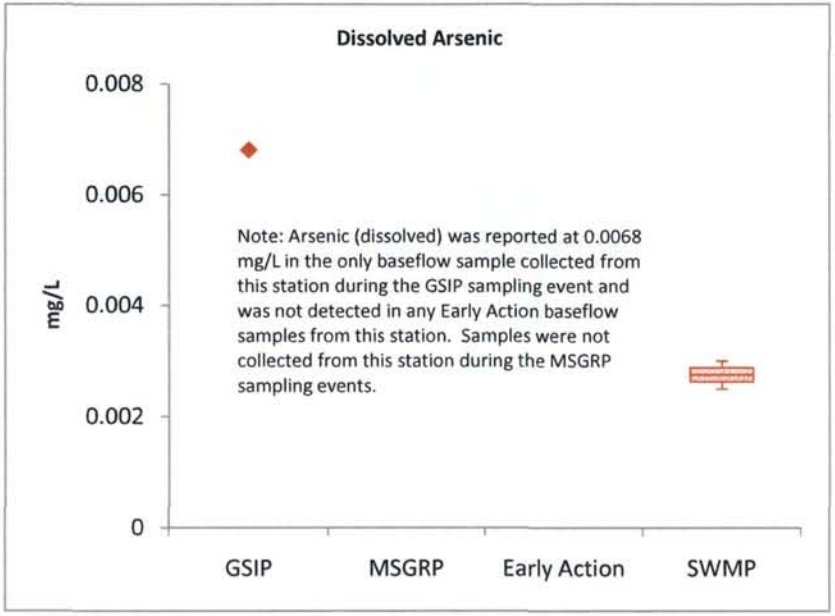

Dissolved Arsenic
Note: Arsenic (dissolved) was not detected in any GSIP baseflow samples from this station. Arsenic (dissolved) was detected at 0.005 mg/L in one Early Action baseflow sample from this station.
mg/L
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
GSIP
MSGRP
Early Action
SWMP

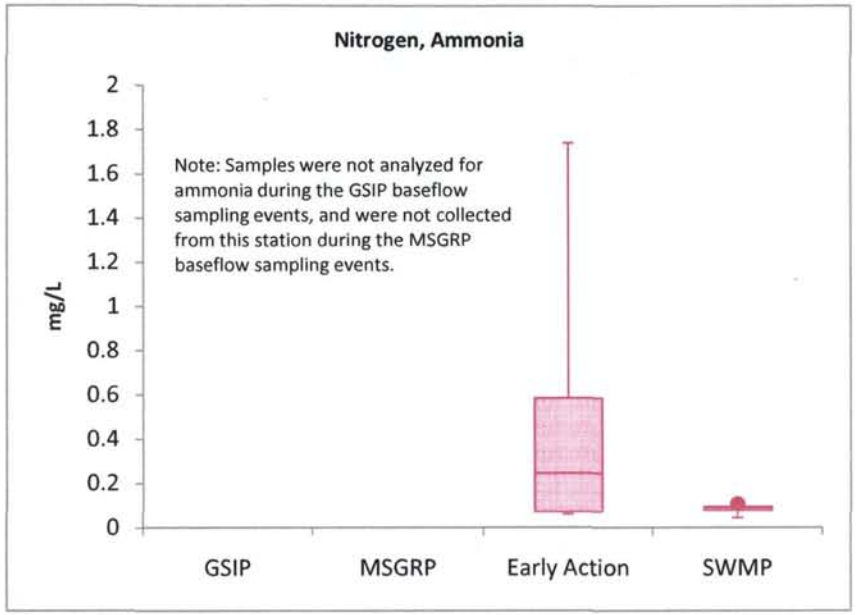

Nitrogen, Ammonia
Note: Samples were not analyzed for ammonia during the GSIP and MSGRP sampling events.
mg/L
6
5
4
3
2
1
0
GSIP
MSGRP
Early Action
SWMP

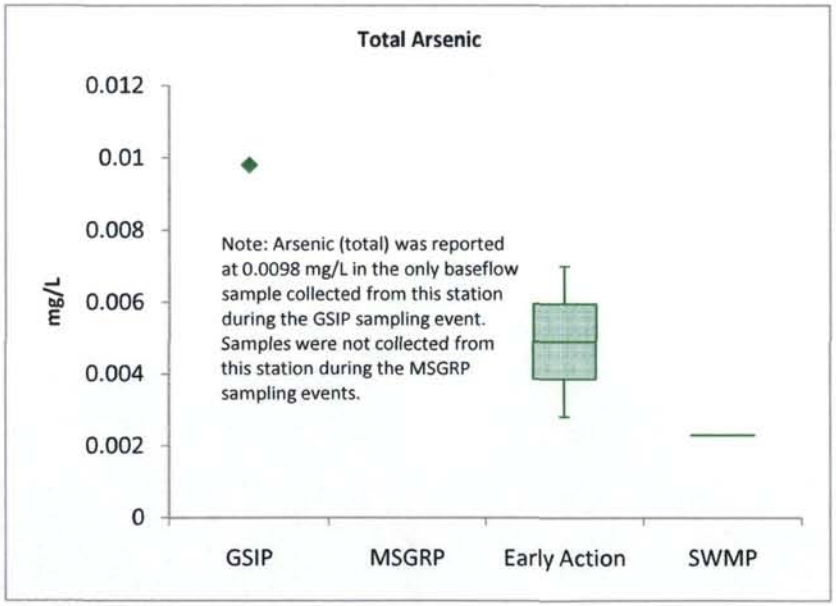

Total Arsenic
Note: Arsenic (total) was detected at 0.0036 mg/L in one GSIP baseflow sample from this station, and at 0.005 mg/L in one Early Action baseflow sample from this station.
mg/L
0.006
0.005
0.004
0.003
0.002
0.001
0
GSIP
MSGRP
Early Action
SWMP

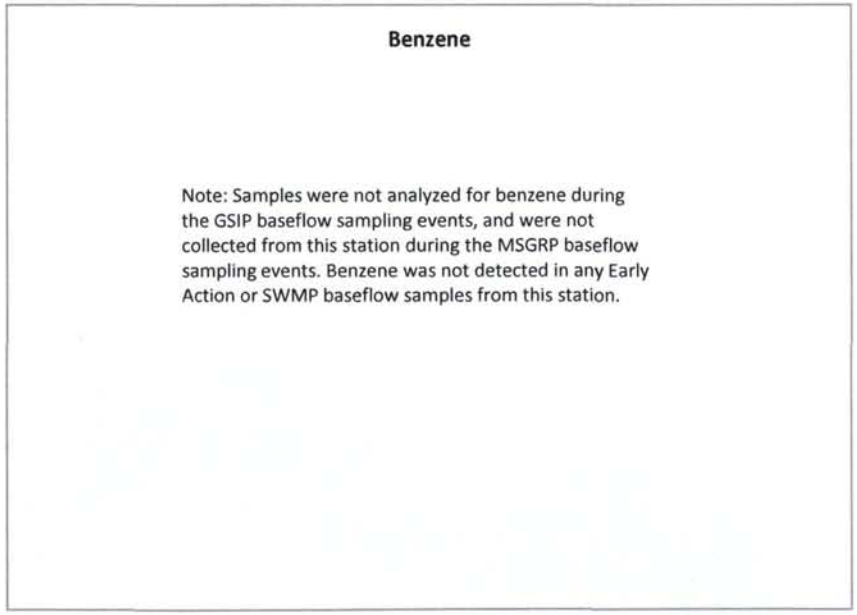

Benzene
Note: Samples were not analyzed for benzene during the GSIP and MSGRP sampling events, and benzene was not detected in any Early Action or SWMP baseflow samples from this station.

SW-2-IP

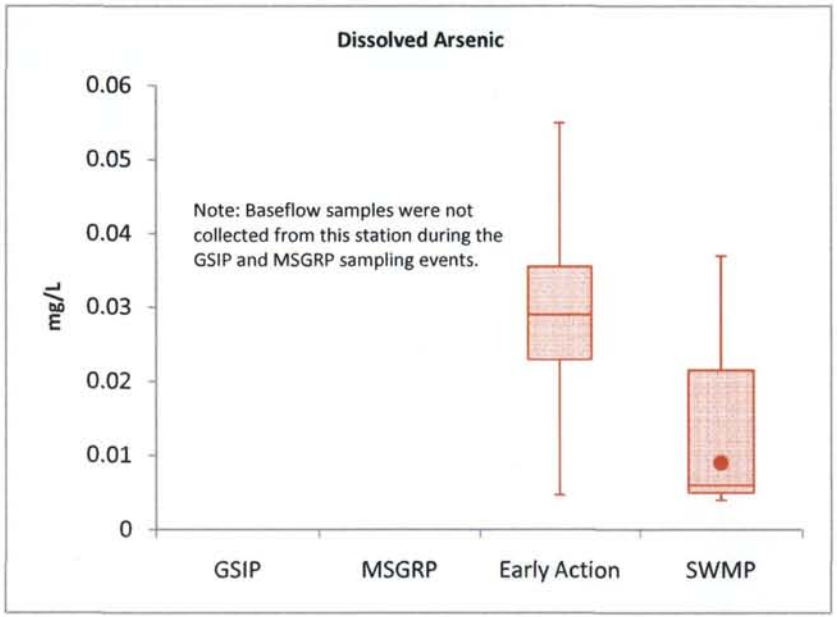

Dissolved Arsenic
0.008
0.006
0.004
0.002
0
mg/L
Note: Arsenic (dissolved) was reported at 0.0068 mg/L in the only baseflow sample collected from this station during the GSIP sampling event and was not detected in any Early Action baseflow samples from this station. Samples were not collected from this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

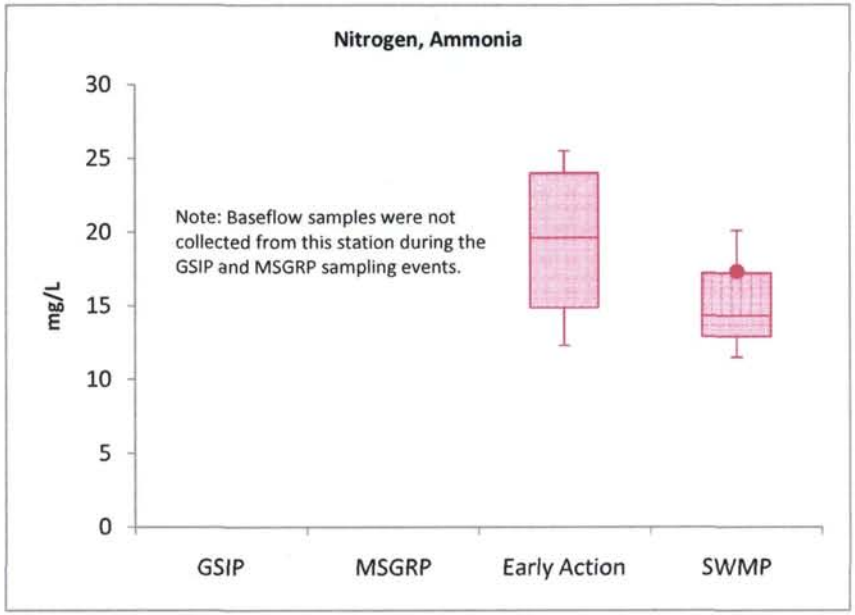

Nitrogen, Ammonia
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
mg/L
Note: Samples were not analyzed for ammonia during the GSIP baseflow sampling events, and were not collected from this station during the MSGRP baseflow sampling events.
GSIP
MSGRP
Early Action
SWMP

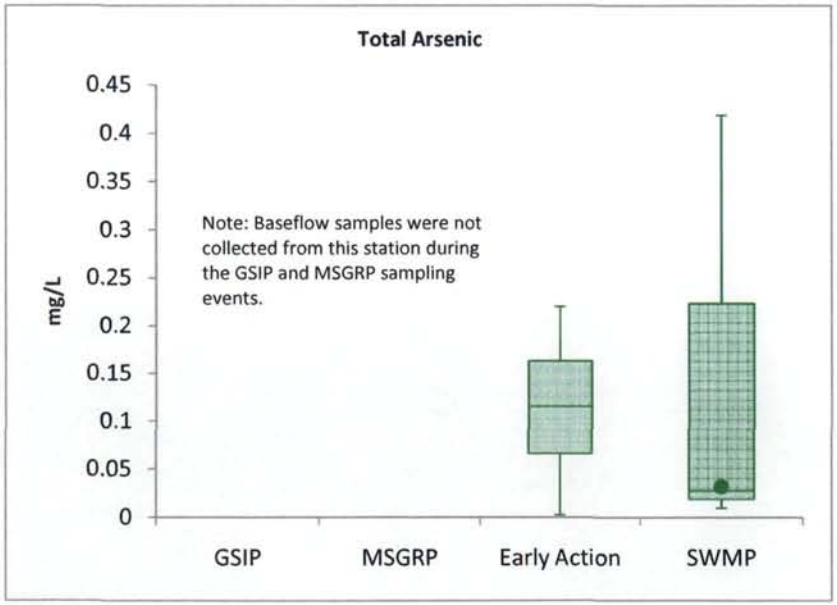

Total Arsenic
0.012
0.01
0.008
0.006
0.004
0.002
0
mg/L
Note: Arsenic (total) was reported at 0.0098 mg/L in the only baseflow sample collected from this station during the GSIP sampling event. Samples were not collected from this station during the MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

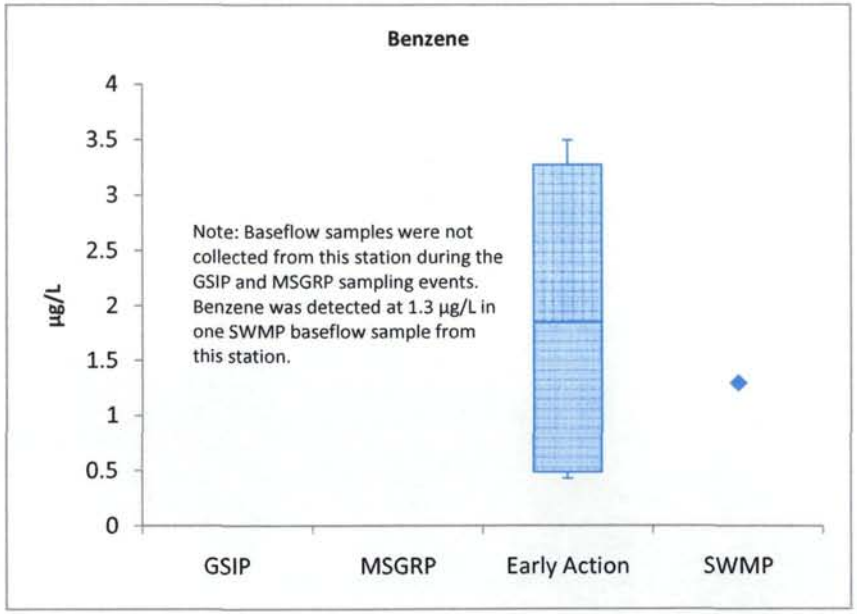

Benzene
Note: Samples were not analyzed for benzene during the GSIP baseflow sampling events, and were not collected from this station during the MSGRP baseflow sampling events. Benzene was not detected in any Early Action or SWMP baseflow samples from this station.

SW-3-IP

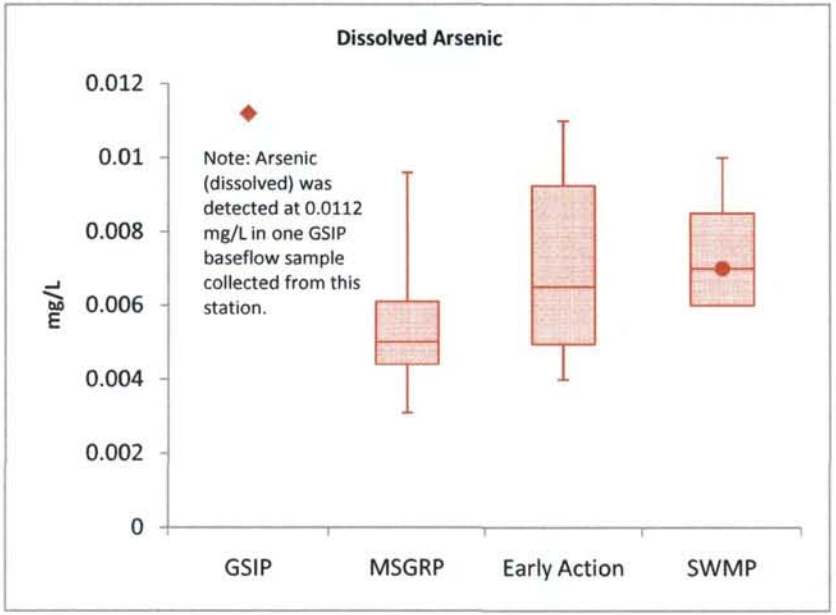

Dissolved Arsenic
mg/L
0.06
0.05
0.04
0.03
0.02
0.01
0
Note: Baseflow samples were not collected from this station during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

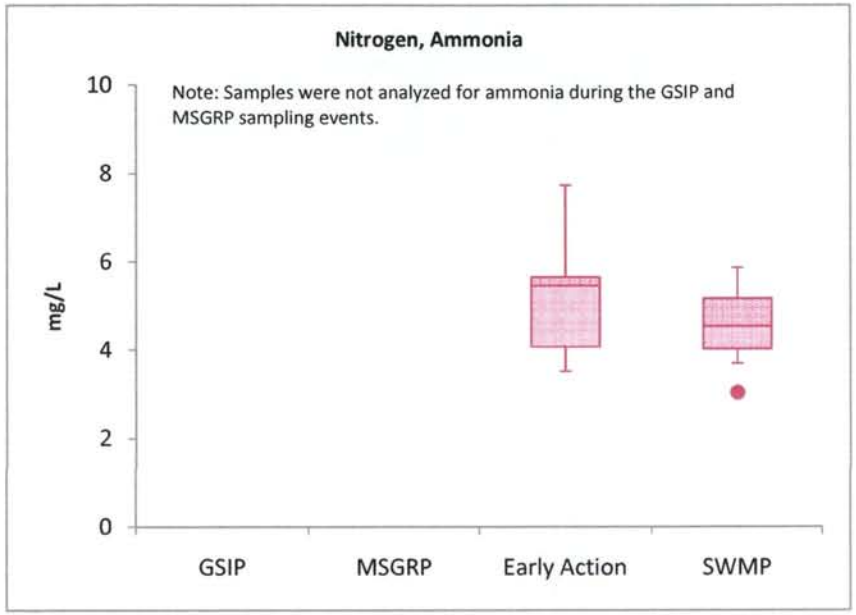

Nitrogen, Ammonia
mg/L
30
25
20
15
10
5
0
Note: Baseflow samples were not collected from this station during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

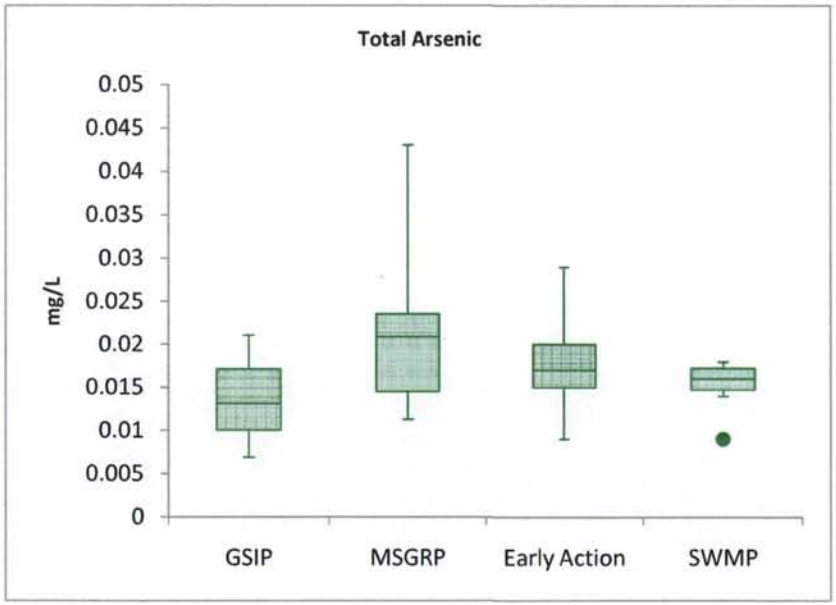

Total Arsenic
mg/L
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Note: Baseflow samples were not collected from this station during the GSIP and MSGRP sampling events.
GSIP
MSGRP
Early Action
SWMP

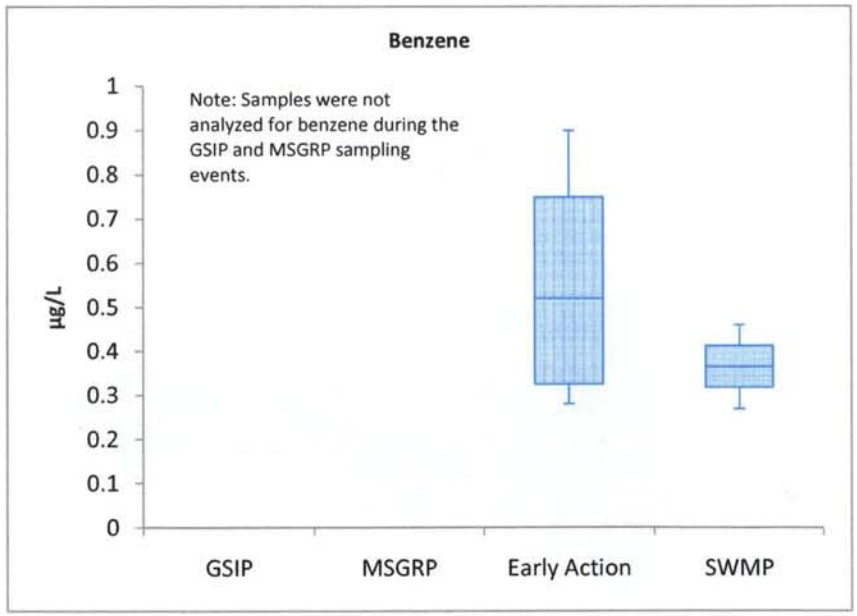

Benzene
µg/L
4
3.5
3
2.5
2
1.5
1
0.5
0
Note: Baseflow samples were not collected from this station during the GSIP and MSGRP sampling events. Benzene was detected at 1.3 µg/L in one SWMP baseflow sample from this station.
GSIP
MSGRP
Early Action
SWMP

SW-02-TT (GSIP SW-4)

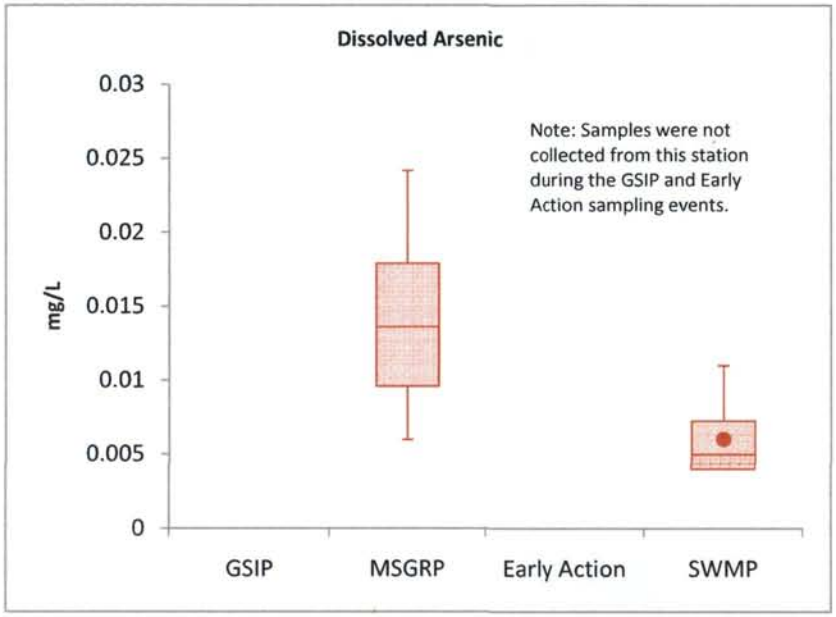


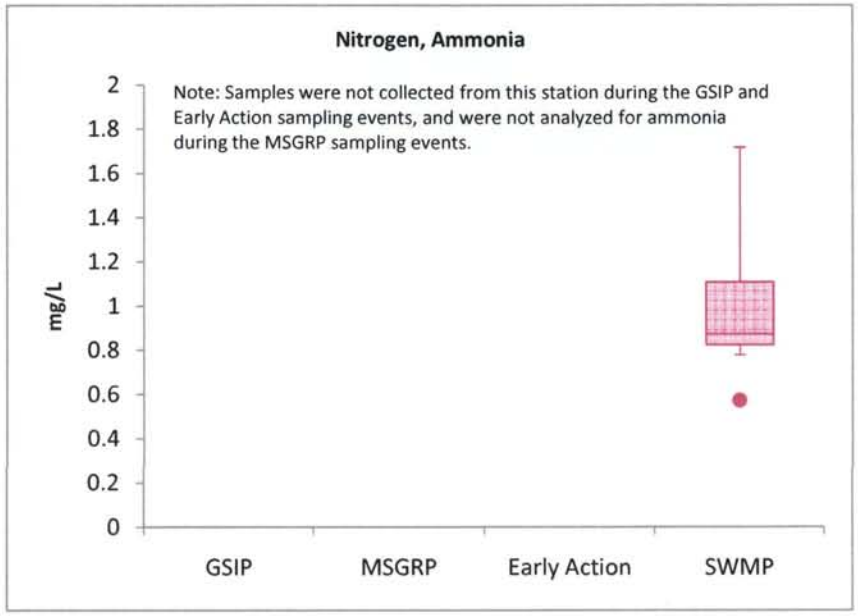


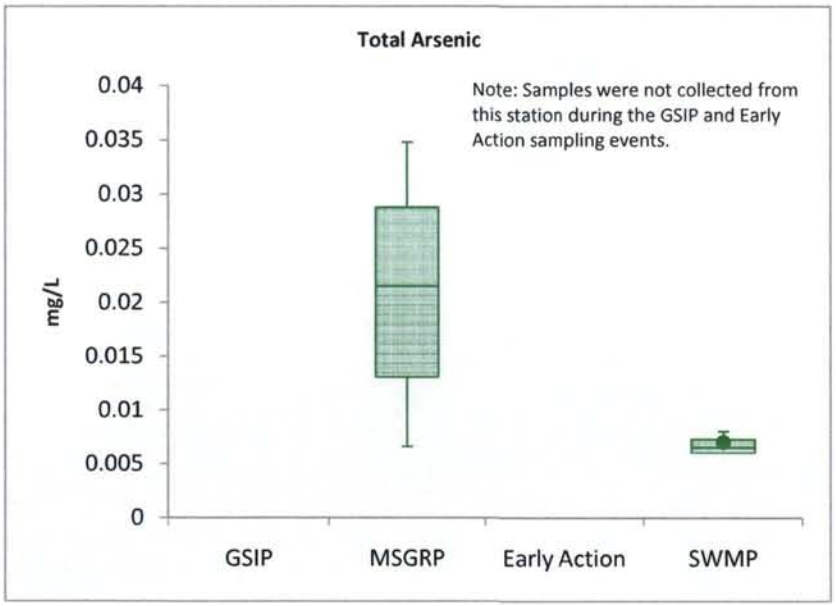




SW-03-TT

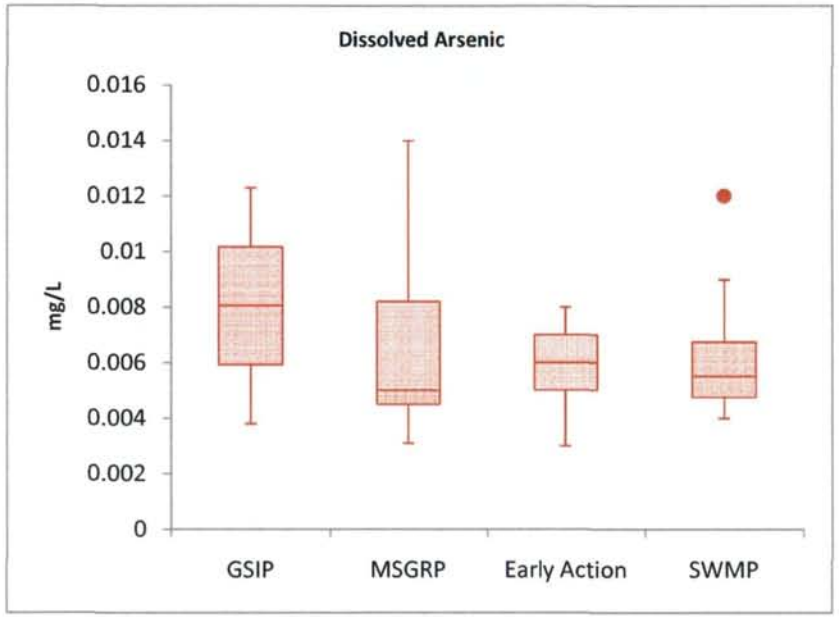


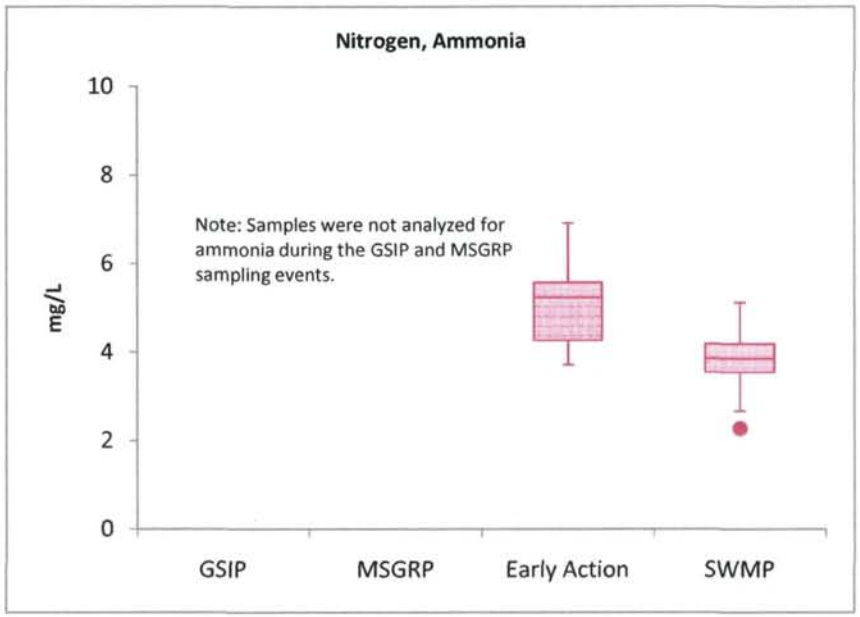


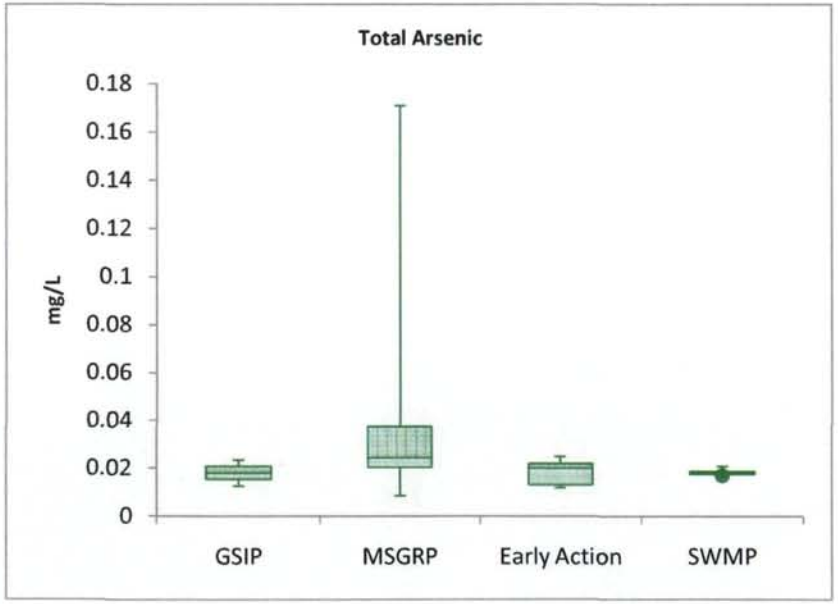


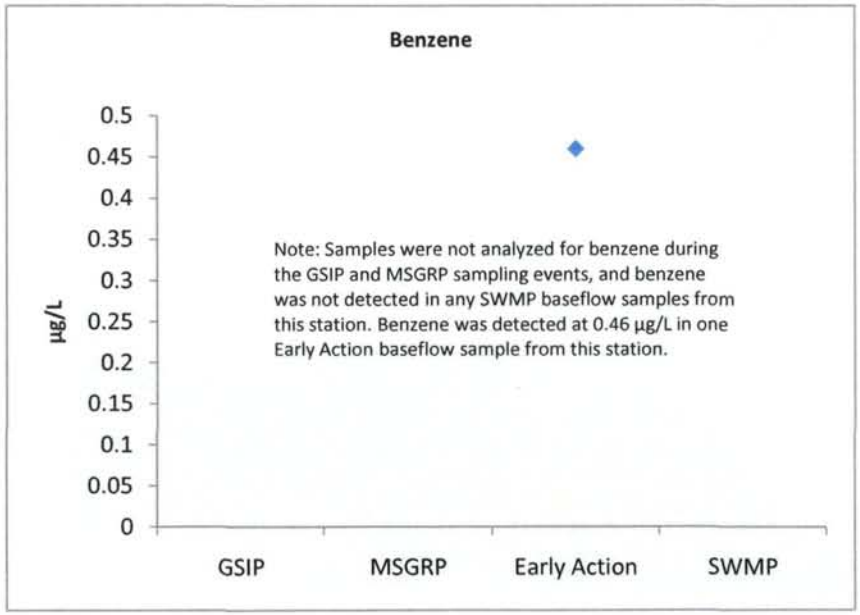
Note: Samples were not collected from this station during the GSIP and Early Action sampling events, and were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples collected from this station.

SW-04-TT (GSIP SW-9)

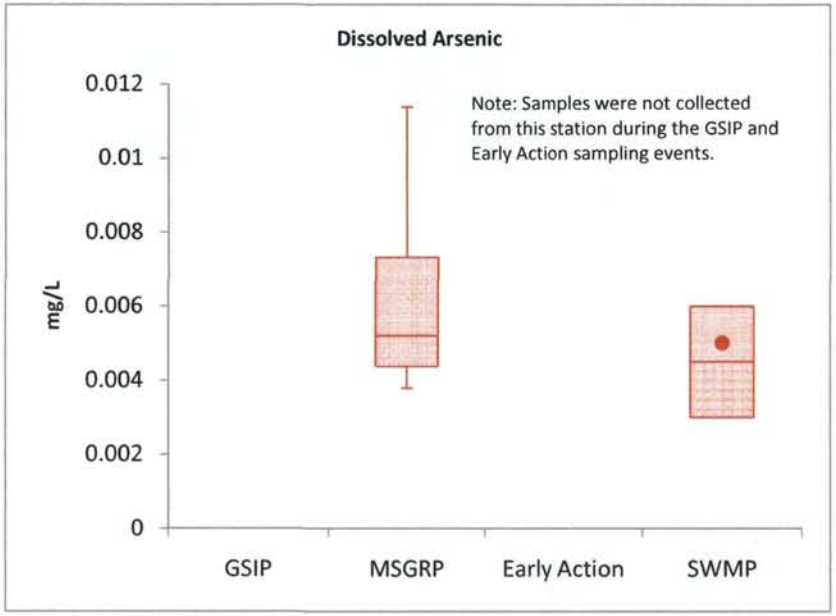


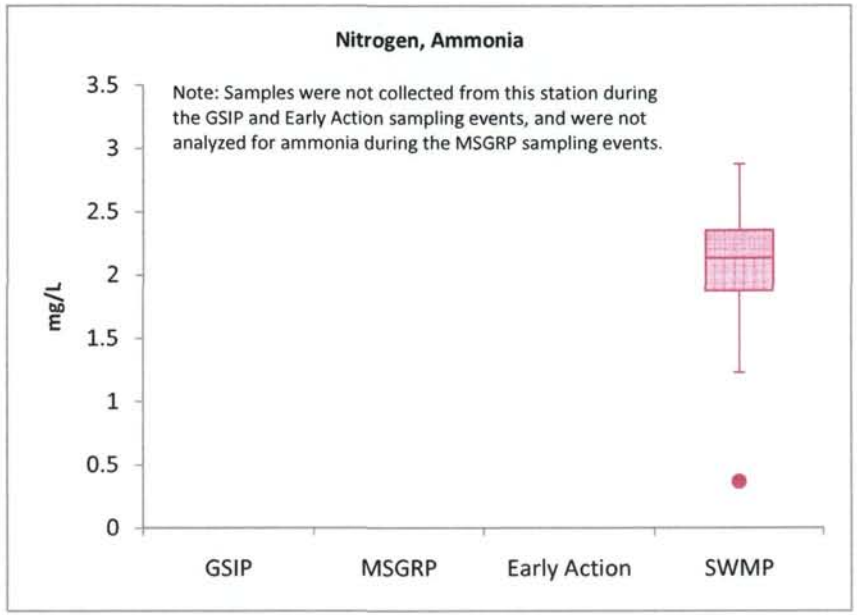


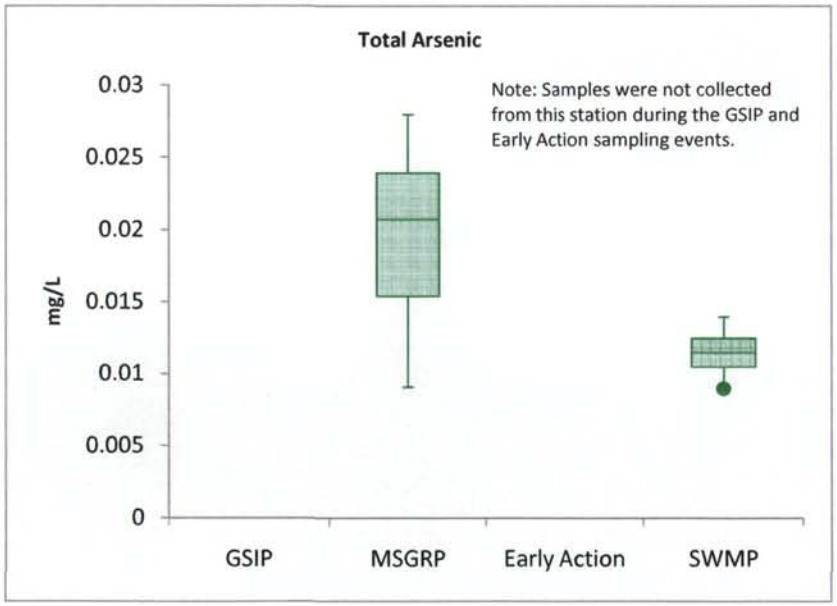




SW-05-TT

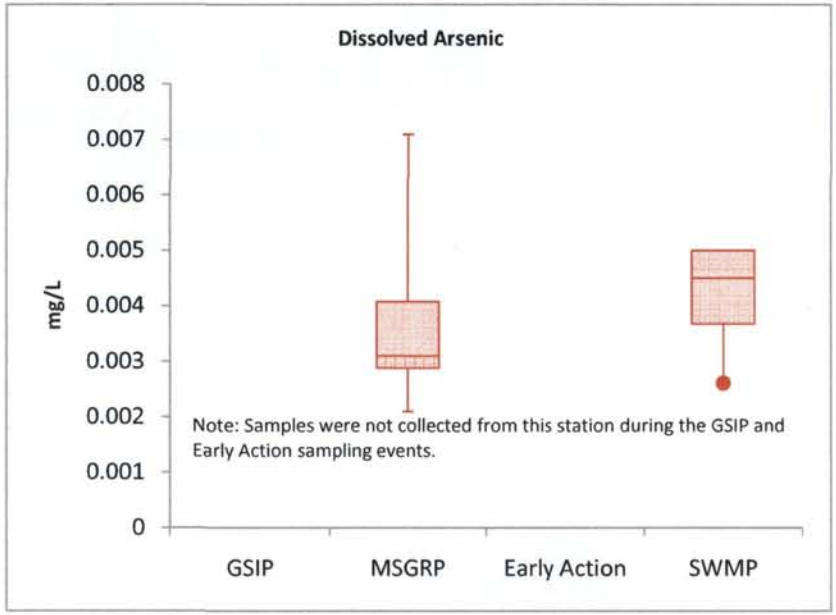


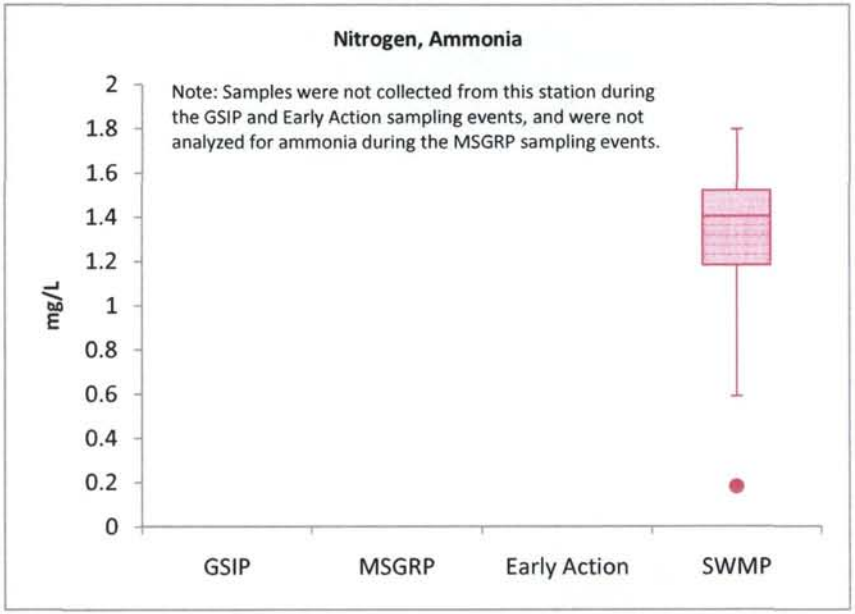


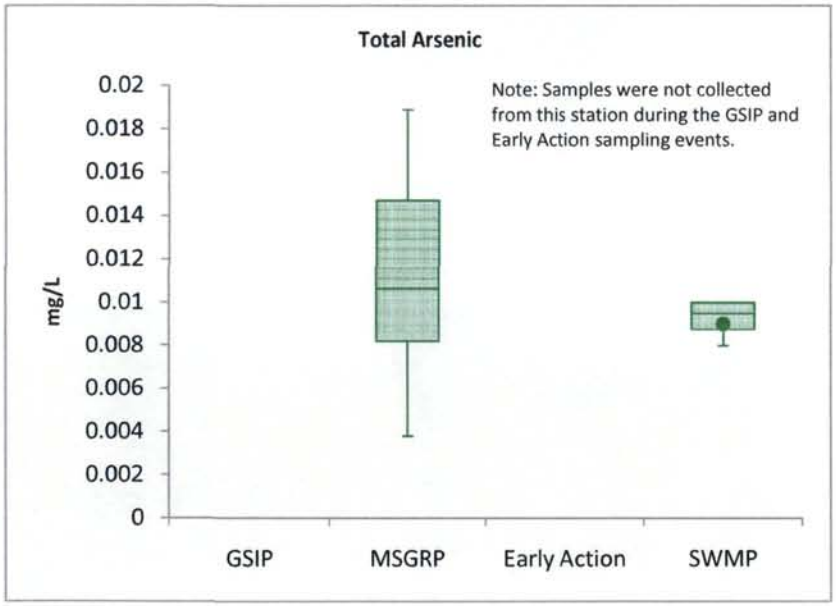


Note: Samples were not collected from this station during the GSIP and Early Action sampling events, and were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples from this station.

SW-06-TT

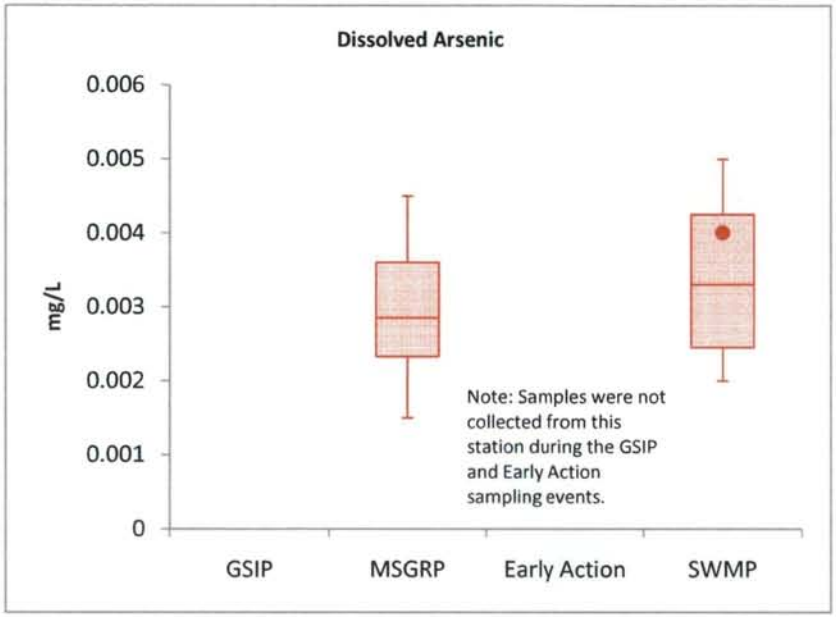


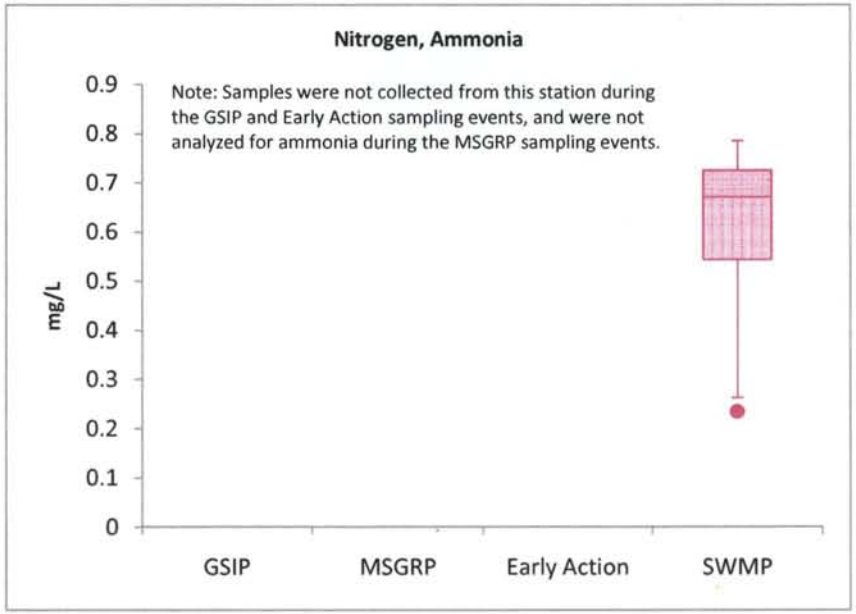


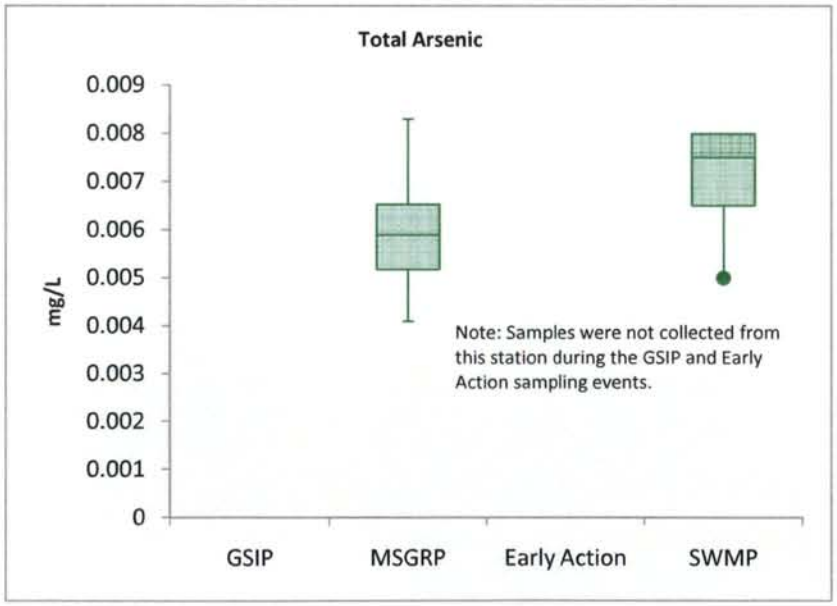


Note: Samples were not collected from this station during the GSIP and Early Action sampling events, and were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples from this station.

SW-07-TT

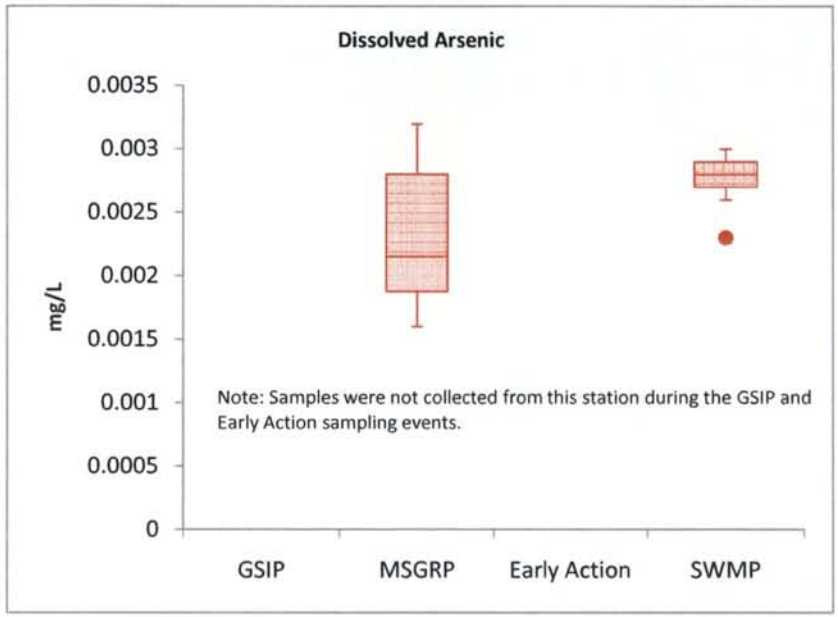


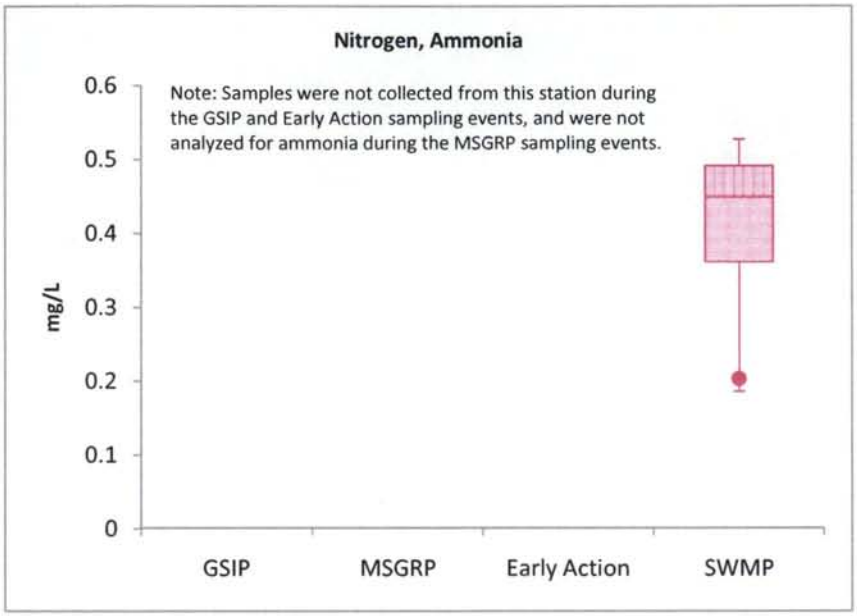


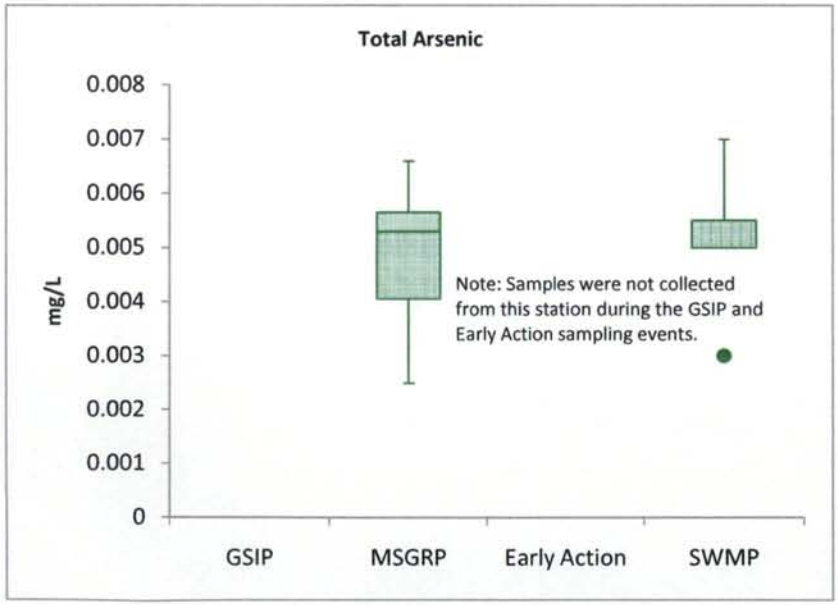


Note: Samples were not collected from this station during the GSIP and Early Action sampling events. Samples were not analyzed for benzene during the MSGRP sampling events. Benzene was not detected in any SWMP baseflow samples from this station.

SW-08-TT







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

Inspector: [redacted] GLENN / Emmons

Date: 8-6-09

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)
pH s.u.	7.04	7.17	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.945	8.88	+/- 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	-1.1	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1757	+/- 15%	P / F	Y / N

recal ~ 177.86 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							
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	1302	+/- 10%	P / F	0.215	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: 0.82 ft

Signal Strength: 5 %

Stage reading from staff gauge: 1.10 ft

Spectrum Strength: 87 %

Stage reading from ISCO: 0.761 ft

Voltage reading from solar panels: 13.33 V

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

Voltage reading from batteries: 13.22 / 13.22 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: 0.48 cf 5

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-2-IP
AAD

Inspector: Glen Bergeron + M. Emmons

Date: 08/06/09

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)
pH s.u.	7.04	7.14	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.820	9.150	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	199	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-1.4	+/- 2 NTU	P / F	~~Y / N~~ - 0.
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1013	+/- 15%	P / F	Y / N 246 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							
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	1304	+/- 10%	P / F	0.322	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: 0.50 ft

Signal Strength: 0 %

Stage reading from staff gauge: 0.54 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 0.44 ft

Voltage reading from solar panels: 12.64 V

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

Voltage reading from batteries: 12.60 / 12.60 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. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-3-IP
BECO

Inspector: Colin Bergeron + M. Emmons

Date: 08/06/09

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)*
pH s.u.	7.04	7.35	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.764	9.109	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	196	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-3.9	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1096	+/- 15%	P / F	Y / N

261. 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 -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	0.0	-0.1	+/- 2 NTU	P / F	1.0 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	1413	1329	+/- 10%	P / F	0.346	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: .18 ft

Signal Strength: _____ %

Stage reading from staff gauge: .22 ft

Spectrum Strength: _____ %

Stage reading from ISCO: 0.126 ft

Voltage reading from solar panels: 13.50 V

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

Voltage reading from batteries: 13.47 / 13.47 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:
CHANGED DESSICANT FOR IN SITU CABLE

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-TT Pond Outlet

Inspector: G. Bergman + M. Emmons

Date: 8/6/09

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.	7.04	7.05	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	7.368	7.914	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	178	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.6	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1431	+/- 15%	P / F	Y / N

197 mV

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	199	+/- 5 mV	P / F	-2.91	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			+/- 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: 0.98 ft

Signal Strength: 26 %

Stage reading from staff gauge: 1.02 ft

Spectrum Strength: 46 %

Stage reading from ISCO: 0.894 ft

Voltage reading from solar panels: 13.41 V

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

Voltage reading from batteries: 13.35 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:

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-TT
Abekjona

Inspector: G. Bergeron + M. Emmons

Date: 8/6/09

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)*
pH s.u.	7.04	7.29	+/- 0.5 pH unit	(P) / F	Y / (N)
DO mg/l	7.977	9.786	+/- 0.7 mg/l of sat value	P / (F)	(Y) / N
ORP mV	200	174	+/- 10 mV	P / (F)	(Y) / N
Turb. NTU	0.0	-2.9	+/- 2 NTU	P / (F)	(Y) / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1051	+/- 15%	P / (F)	(Y) / N

330 NA
188 mV

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	7.846	7.916	+/- 0.3 mg/l of sat value	(P) F	30.492	Slope 15 to 34 Off set 2	(P) F	Y / N
ORP mV	200	200	+/- 5 mV	(P) F	-11.31	Off set +/- 30 mV	(P) F	Y / N
Turb. NTU	0.0	-0.3	+/- 2 NTU	(P) F	-1.9	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	1490	+/- 10%	(P) F	0.316	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: 0.949 ft

Signal Strength: 6% %

Stage reading from staff gauge: 0.74 ft

Spectrum Strength: 47 %

Stage reading from ISCO: 0.957 ft

Voltage reading from solar panels: 13.10 V

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

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-04-TT Mishawum

Inspector: A. Bergeron + M. Emmons

Date: 8/6/09

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.	7.04	7.19	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.105	10.958	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	191	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.7	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1546	+/- 15%	P / F	Y / N

280 mA

9%

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	8.060	8.231	+/- 0.3 mg/l of sat value	P / F	33.3	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: 0.740 ft

Signal Strength: 6 %

Stage reading from staff gauge: 0.86 ft

Spectrum Strength: 75 %

Stage reading from ISCO: 0.739 ft

Voltage reading from solar panels: 13.54 V

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

Voltage reading from batteries: 13.42 / 13.42

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:

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-05-TT
Salem St.

Inspector: G Bergson + M. Emmons

Date: 8/6/09

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: 47339

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	7.04	7.13	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.142	7.424	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	196	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-1.3	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1272	+/- 15%	P / F	Y / N

240. nA → 23

6%

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	8.195	8.209	+/- 0.3 mg/l of sat value	P / F	27.82	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	-0.2	+/- 2 NTU	P / F	-0.35	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: 1.20 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.20 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 1.156 ft

Voltage reading from solar panels: 12.07 V

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

Voltage reading from batteries: 12.01 / 12.01 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:

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-06-TT Montvale

Inspector: G. Bergeron + M. Emmons

Date: 8-6-09

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 BIRD FC
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: 47482

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	7.04	7.24	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.754	8.087	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	197	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-1.0	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1905	+/- 15%	P / F	Y / N

346 mA

168 ohms → 174
167

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	8.732	8.334	+/- 0.3 mg/l of sat value	P / F	0.34	Slope 15 to 34 Off set 2	P / F	Y / N Need cleaning
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 1413	1419 1414	+/- 10%	P / F	0.245 0.236	K cell value 0.32 to 0.39	P / F	Y / N * aggressive cleaning

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

Signal Strength: 0 %

Spectrum Strength: error %

Voltage reading from solar panels: 12.38 V

Voltage reading from batteries: 12.36 / 12.30 V

Manual stage reading (with ruler) from bottom of A/V sensor: 1.10 ft

Stage reading from staff gauge: 1.72 ft

Stage reading from ISCO: 1.411 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: _____ 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: CHANGED DESSICANT. D.O. has drifted out need aggressive cleaning in microwave

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-07. TT
Swanton St

Inspector: G. Beaugeau + M. Emmon

Date: 8/6/09

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: 47341

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.	7.04	7.22	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	7.521	7.201	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	208	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-1.7	+/- 2 NTU	P / F	/ N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1673	+/- 15%	P / F	Y / N

18% aggressive cleaning 10.34 ohms 11.48

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	0.0	-0.1	+/- 2 NTU	P / F	-0.73	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	1370	+/- 10%	P / F	0.014	K cell value 0.32 to 0.39	P / F	Y / N *

1372 0.016

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: 99 %

Stage reading from staff gauge: 1.08 ft

Spectrum Strength: 94 %

Stage reading from ISCO: 1.373 ft

Voltage reading from solar panels: 13.38 V

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

Voltage reading from batteries: 13.18 / 13.18 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: * Specific conductivity probe needs to be replaced

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-08-TT
USGS

Inspector: G. Bingeront M. Emmons

Date: 8/6/09

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: 47340

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	7.04	7.19	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.497	8.624	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	196	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-1.5	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1258	+/- 15%	P / F	Y / N

11%

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	0.0	0.2	+/- 2 NTU	P / F	-0.52	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: 2.50 ft

Signal Strength: 0 %

Stage reading from staff gauge: 2.86 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: 2.497 ft

Voltage reading from solar panels: 12.23 V

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

Voltage reading from batteries: 12.20 / 12.20 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:

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW 01 TT
HALLS BROOK

Inspector: GLEN JAN MARK

Date: 8-13-09

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)*
pH s.u.	7.04	7.13	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.868	8.66	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	188	+/- 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	1509	+/- 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 -54 to -62 mV Off set 372 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	-7.78	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: .74 ft

Signal Strength: 12 %

Stage reading from staff gauge: 1.04 ft

Spectrum Strength: 85 %

Stage reading from ISCO: .676 ft

Voltage reading from solar panels: 12.63 V

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

Voltage reading from batteries: 12.37 12.37 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: SW02TP

Inspector: F/B/Kimmons

Date: 8/13/09

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)*
pH s.u.	7.04	7.11	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.89	8.54	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	191	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-1.6	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1559	+/- 15%	P / F	Y / N

10.3

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			+/- 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: .46 ft

Signal Strength: 50 %

Stage reading from staff gauge: .48 ft

Spectrum Strength: error %

Stage reading from ISCO: .36 ft

Voltage reading from solar panels: 12.57 V

Stage reading reset to (if +/- 0.1): .46 ft

Voltage reading from batteries: 13.55 12.56 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: 0 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 purple

SDI-12 Dessicant Replaced? Y / N

Notes:

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-IP
BECO

Inspector: Emmons / Fitzgerald + Bergeron

Date: 8/13/09

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: 48358

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.	7.04	7.36	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.849	8.92	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	226	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	0.1	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1434	+/- 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	240	240	+/- 5 mV	P / F	-19.90	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: 0.22 ft

Signal Strength: 0 %

Stage reading from staff gauge: 0.20 ft

Spectrum Strength: error %

Stage reading from ISCO: 0.13 ft

Voltage reading from solar panels: 12.69 V

Stage reading reset to (if +/- 0.1): 0.22 ft

Voltage reading from batteries: 12.70 / 12.71 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. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW02 TT

Inspector: F/B

Date: 8/13/09

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.	7.0	7.28	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.07	8.04	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	232	+/- 10 mV	P / F	Y / N
Turb. NTU	0	.1	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1460	+/- 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 -54 to -62 mV Off set 372 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 0.33 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: .86 ft

Signal Strength: 0 %

Stage reading from staff gauge: .92 ft

Spectrum Strength: error %

Stage reading from ISCO: .784 ft

Voltage reading from solar panels: 12.79 V

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

Voltage reading from batteries: 12.78 12.78 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: .910 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. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW03TT

Inspector: FB

Date: 3/13/09

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)*
pH s.u.	7	7.38	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.7	8.32	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	248	+/- 10 mV	P / F	Y / N
Turb. NTU	0	1	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1609	+/- 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			+/- 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	1413	+/- 10%	P / F	0.287	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: .62 ft

Signal Strength: 0 %

Stage reading from staff gauge: .50 ft

Spectrum Strength: 8660 ✓ %

Stage reading from ISCO: 1.194 ft

Voltage reading from solar panels: 12.73 V

Stage reading reset to (if +/- 0.1): .62 ft

Voltage reading from batteries: 12.73 / 12.71

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:	8.22 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:

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW04 TT

Inspector: F/13

Date: 8/13/09

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.	7.01	7.23	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.76	6.20	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	223	+/- 10 mV	P / F	Y / N
Turb. NTU	0	.4	+/- 2 NTU	P / F	Y / N
Temp. °C			~~+/- 0.5 °C~~	~~P / F~~	Annually Only
Sp. Cond. mS/cm	1413	1261	+/- 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 -54 to -62 mV Off set 372 to 450	P / F	Y / N
DO mg/l	8.76	8.509	+/- 0.3 mg/l of sat value	P / F	24.03	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	240	240	+/- 5 mV	P / F	-22.08	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	1413	+/- 10%	P / F	.323	K cell value 0.33 to 0.39	P / F	Y / N

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

Signal Strength: 7 % 31

Spectrum Strength: 26606 % 93

Voltage reading from solar panels: 12.83 V

Voltage reading from batteries: 12.81 / 12.81 V

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

Stage reading from staff gauge: .70 ft

Stage reading from ISCO: .64 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: _____ cf

ISCO stream velocity reading: 3.49 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 / purple

SDI-12 Dessicant Replaced? Y / N

Notes:

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-05-TT
Salem St

Inspector: Emmons Forgey Bergeron

Date: 8/13/09

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: 47339

Recal reading

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	7.04	7.10	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.891	8.93	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	226	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.2	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1527	+/- 15%	P / F	Y / N

210 mV

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	240	239	+/- 5 mV	P / F	-29.76	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: 1.10 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.08 ft

Spectrum Strength: error %

Stage reading from ISCO: 1.021 ft

Voltage reading from solar panels: 12.81 V

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

Voltage reading from batteries: 12.78 / 12.79 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: 2.499 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 purple

SDI-12 Dessicant Replaced? Y / N

Notes:

Rev. 07/27/09

IPOU2
WOBURN, MA

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-06-TT
Montvale Ave

Inspector: Emmanuel Bergeron + Forgiey
Date: 8/13/09

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: 47482

	mV
4	174
7	6.71
10	-151

cal reading 207 mV

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	9.21	9.67	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	225	+/- 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	1087	+/- 15%	P / F	Y / N

237 ohms

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	-55.99	Slope -66 to -50 mV	-52.30 P / F	Y / N
	4	NA		NA	398.60	Off set 363 to 450	372.80	
	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	240	240	+/- 5 mV	P / F	-33.43	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	1415	+/- 10%	P / F	0.301	K cell value 0.32 to 0.39	P / F	Y / N Δ

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: 1.54 ft

Spectrum Strength: 8/100 %

Stage reading from ISCO: 9.69 ft → 9.7

Voltage reading from solar panels: 12.58 V

Stage reading reset to (if +/- 0.1): 1.00 ft

Voltage reading from batteries: 13.57 12.57

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: 0 cf

6712 Humidy Indicator: blue / pink / white

10 / 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 electrode solution for ORP, Need to recalibrate pH

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Δ consider replacing

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-07-TT
Swanton St

Inspector: Emmons Bergman Energy

Date: 8/13/09

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: 47341

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.	7.04	7.10	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.03	8.33	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	237	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.2	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1.413	1.491	+/- 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: 1.26 ft

Signal Strength: 27 %

Stage reading from staff gauge: 1.0 ft

Spectrum Strength: 88 %

Stage reading from ISCO: 1.264 ft

Voltage reading from solar panels: 12.83 V

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

Voltage reading from batteries: 12.80 / 12.81

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: 20.06 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 pink/o

SDI-12 Dessicant Replaced? Y / N

Notes:

Rev. 07/27/09

IPOU2
WOBURN, MA

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-08-TT
" USGS

Inspector: Eurgen Bengaan + Eminions

Date: 8/13/09

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: 47340

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	7.04	7.19	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.70	8.98	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	229	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.2	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1310	+/- 15%	P / F	Y / N
*	240	292			

* 4 7 10

mV
~~169~~ 175

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.	7.04	7.12	+/- 0.1 pH unit (for pH 7)	P / F	-55.93	Slope -66 to -50 mV Off set 363 to 450	51.40 P / F 368.43	Y / N
	4	NA		NA	400			
	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	240	240	+/- 5 mV	P / F	-48.94	Off set +/- 30 mV	P / F	Y / N *
ORP ~~Turb. NTU~~	240	240	+/- 2 NTU	P / F	2.55	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: 2.3 ft

Signal Strength: 0 %

Stage reading from staff gauge: 1.70 ft

Spectrum Strength: error %

Stage reading from ISCO: 2.253 ft

Voltage reading from solar panels: 12.34 V

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

Voltage reading from batteries: 12.34 12.34 V

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: 113.4 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 electrode solution in ORP probe. Then recalibrated. Obtain acceptable offset value

Rev. 07/27/09

* pH needs to be recalibrated now!

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW 01 TT
H.B.

Inspector: GLENN IAN + EMMONS

Date: 8-20-09

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: 47485

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.	7.09	7.26	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.934	3.41	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	238	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.1	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1202	+/- 15%	P / F	Y / N

14.9 %

92.50 nA too low

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	8.594	8.29	+/- 0.3 mg/l of sat value	P / F	31	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: .64 ft

Signal Strength: 40 %

Stage reading from staff gauge: .95 ft

Spectrum Strength: 67 %

Stage reading from ISCO: .641 ft

Voltage reading from solar panels: 12.73 V

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

Voltage reading from batteries: 12.69 / 12.62 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:

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW02 IP
Atlantic Ave

Inspector: F/13/E

Date: 8/20/09

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)
pH s.u.	7.04	7.13	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.198	8.53	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	235	+/- 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	1523	+/- 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 dry

Spectrum Strength: error %

Stage reading from ISCO: 0 ft

Voltage reading from solar panels: 12.80 V

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

Voltage reading from batteries: 12.77/12.78

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: 0 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: station dry : Checked calibration of probes. All pass
Left Troll in shed placed in a Calibration cup full of D.I H_2O

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OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-3-IP
BECO

Inspector: GLENN B/Ian Fragey + M. Emmons

Date: 8-20-09

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: 48359

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.	7.04	7.25	+/- 0.5 pH unit	(P) / F	Y / (N)
DO mg/l	8.374	9.92	+/- 0.7 mg/l of sat value	P / (F)	(Y) / N
ORP mV	240	242	+/- 10 mV	(P) / F	Y / (N)
Turb. NTU	0.0	-0.2	+/- 2 NTU	(P) / F	Y / (N)
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1460	+/- 15%	(P) / F	Y / (N)

557 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 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	8.42		+/- 0.3 mg/l of sat value	P / F	65.3 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

* wont stabilize or calibrate w/in spec.

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: DRY ft 0

Spectrum Strength: ERROR %

Stage reading from ISCO: .088 ft

Voltage reading from solar panels: 12.56 V

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

Voltage reading from batteries: 12.50 / 12.50 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)

Stream Bed has dried up.

Notes: Probe was exposed to Air since last weeks O+M.

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Placed inside of shed w/ calibration cup full of water

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: ~~SW 07 TT~~ SW-02-TT (KS)

Inspector: CLEAN IAN MARK

Date: 8-20-09

MASTER 208C00099

SLAVE 209A00048

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.	7.0	7.29	+/- 0.5 pH unit	(P) / F	Y / (N)
DO mg/l	~~8.48~~	7.096	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	226	+/- 10 mV	P / (F)	(Y) / N
Turb. NTU	0	.1	+/- 2 NTU	(P) / F	Y / (N)
Temp. °C	—	—	+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1482	+/- 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	40.69	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	240	240	+/- 5 mV	P / F	-19.09	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		~~1482~~	+/- 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: .75 ft

Signal Strength: 0 %

Stage reading from staff gauge: .82 ft

Spectrum Strength: 97 %

Stage reading from ISCO: .691 ft

Voltage reading from solar panels: 13.40 V

Stage reading reset to (if +/- 0.1): ~~.691~~ .00 ft

Voltage reading from batteries: 13.26 / 13.26 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:

Rev. 07/27/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-FT
Abeajon 9

Inspector: Benjamin Forgey + Emmano

Date: 8/20/09

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)*
pH s.u.	7.04	7.31	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	7.53	5.43	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	221	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-10.4	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1263	+/- 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 -54 to -62 mV Off set 372 to 450	P / F	Y / N
DO mg/l	7.427	7.61	+/- 0.3 mg/l of sat value	P / F	34.26 2.0	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	240	240	+/- 5 mV	P / F	-27.3	Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0	-0.3	+/- 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: 0.50 ft

Signal Strength: 0 %

Stage reading from staff gauge: 0.38 ft

Spectrum Strength: error %

Stage reading from ISCO: 0.202 ft

Voltage reading from solar panels: 12.59 V

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

Voltage reading from batteries: 12.21 / 12.21 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

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: SW04TT

Inspector: CLEAN JAN MARK

Date: 8-20-09

MASTER 207E000974

SLAVE 208A00588

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	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: .52 ft

Signal Strength: 23 %

Stage reading from staff gauge: .60 ft

Spectrum Strength: 69 %

Stage reading from ISCO: .516 ft

Voltage reading from solar panels: 13.47 V

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

Voltage reading from batteries: 13.31 / 13.31 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 05 TT

Inspector: GLEAW IAN MARK

Date: 8-20-09

MASTER 209C01710

SLAVE 209A00611

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: 47339

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.	7.04	7.17	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	7.979	7.56	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	235	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	0.2	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1451	+/- 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 -54 to -62 mV Off set 372 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 0.33 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: 1.08 ft

Signal Strength: 13 %

Stage reading from staff gauge: .92 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .95 ft

Voltage reading from solar panels: 12.10 V

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

Voltage reading from batteries: 12.08 / 12.08 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-06-TT Montvale

Inspector: GLENN IAN MARK

Date: 8-20-09

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: 47482

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	7.04		+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.472	8.57	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	225	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-0.8	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1473	+/- 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 -54 to -62 mV Off set 372 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 0.33 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: 1.05 ft

Signal Strength: 98 %

Stage reading from staff gauge: 1.40 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .903 ft

Voltage reading from solar panels: 12.20 V

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

Voltage reading from batteries: 12.15 / 12.15 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: Troll Quick connect is getting difficult to release and seal.

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-07-TT
Swanton St

Inspector: GLENN IAN

Date: 8-20-09

~~09004330~~ S/N 209A00587

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: 47341

Reading check of In-Situ Troll sensors:

	Standard	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.	7.09	7.18	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	7.263	7.42	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	224	+/- 10 mV	P / F	Y / N
Turb. NTU	5.6	-0.2	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413 ~~1442~~ 1445		+/- 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 -54 to -62 mV Off set 372 to 450	P / F	Y / N
DO mg/l	240	240	+/- 0.3 mg/l of sat value	P / F	-25.14	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: 20 %

Stage reading from staff gauge: 1.0 ft

Spectrum Strength: 75 %

Stage reading from ISCO: 1.20 ft

Voltage reading from solar panels: 13.26 V

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

Voltage reading from batteries: 13.01 / 13.01 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-08-TT
USGS

Inspector: Bergeron, Forgey + Emmons

Date: 8-20-09

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: 47340

Reading check of In-Situ Troll sensors:	*Standard*	*Reading Check*	*Acceptance Criteria*	*Pass / Fail*	*Recalibrated? (see below)*
pH s.u.	7.04	7.14	+/- 0.5 pH unit	P / F	Y / N
DO mg/l			+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	240	225	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	1.0	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1507	+/- 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	240	240	+/- 5 mV	P / F	-15.27	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: .80 ft

Signal Strength: 0 %

Stage reading from staff gauge: 2.40 ft

Spectrum Strength: ERROR %

Stage reading from ISCO: .77 ft

Voltage reading from solar panels: 12.50 V

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

Voltage reading from batteries: 12.43 12.43 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:

Rev. 07/27/09

IPOU2
WOBURN, MA

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-01-TT
Halls Brook

Inspector: Eriksen, Forgey

Date: 8/27/09

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 pp11294 — pH s.u.	4.01	4.11	+/- 0.5 pH unit	(P) / F	(Y) / N
DX05844 — DO mg/l		7.18	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11294 — ORP mV	240	245	+/- 10 mV	(P) / F	(Y) / N
T503991 — 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	1038	+/- 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	7.08	+/- 0.1 pH unit (for pH 7)	(P) / F	-57.16	Slope -54 to -62 mV Off set 372 to 450	-58.16 P / F	(Y) / N
	4	NA		NA	406		378	
	10							
DO mg/l	7.665	7.66	+/- 0.3 mg/l of sat value	(P) / F	~~39.94~~ 2.3	Slope 15 to 34 Off set 2	(P) / (F)	(Y) / N
ORP mV	240	240	+/- 5 mV	(P) / F	-2.90	Off set +/- 30 mV	(P) / F	Y / (N)
Turb. NTU	0.0	~~0.85~~ 0.1	+/- 2 NTU	(P) / F	0.85	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	1416	+/- 10%	(P) / F	0.303	K cell value 0.33 to 0.39	P / (F)	Y / N

swapped out D.O.

maybe

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

Manual stage reading (with ruler) from bottom of A/V sensor: 0.67 ft

But passes 0.30 criteria

Signal Strength: 0 %

Stage reading from staff gauge: 0.87 ft

Spectrum Strength: error %

Stage reading from ISCO: 0.57 ft

Voltage reading from solar panels: 12.83 V

Stage reading reset to (if +/- 0.1): 0.67 ft

Voltage reading from batteries: 12.81 / 12.80 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: change ~~out~~ pH filling solution for ORP/pH sensor as part of monthly O&M to verify stability

Rev. 06/22/09

Change D.O. sensor DX05440 with DX05844
slope 46

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-IP
Atlantic Ave

Inspector: Emmons, Forgey

Date: 8/27/09

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:

SN		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11670	pH s.u.	4.01	4.10	+/- 0.5 pH unit	P / F	Y / N
DK05483	DO mg/l	8.369	8.48	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11670	ORP mV	240	232	+/- 10 mV	P / F	Y / N
TB03937	Turb. NTU	0.0	-1.4	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05252	Sp. Cond. mS/cm	1413	1358	+/- 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, 7→12)	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u.	7	7.03	+/- 0.1 pH unit (for pH 7)	P / F	-56.85	Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4	NA		NA	391.07			
	10						361.55	
DO mg/l	8.3	8.29	+/- 0.3 mg/l of sat value	P / F	30.79	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	240	235	+/- 5 mV	P / F	6.86	Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0	-0.3	+/- 2 NTU	P / F	-0.1	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	0.335	K cell value 0.33 to 0.39	P / F	Y / N

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

Signal Strength: 0 %

Spectrum Strength: error %

Voltage reading from solar panels: _____ V

Voltage reading from batteries: / V

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

Stage reading from staff gauge: _____ ft

Stage reading from ISCO: 0.348 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: _____ 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-03-ID
BECO

Inspector: GLENN MARK

Date: 8-28-09

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.	4.01	4.13	+/- 0.5 pH unit	P / F	Y / N
	DO mg/l	9.295	9.347	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10925	ORP mV	200	239	+/- 10 mV	P / F	Y / N *
TB04476	Turb. NTU	0.0	1.2	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05266	Sp. Cond. mS/cm	1413	1312	+/- 15%	P / F	Y / N

* pH filling solution changed

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	9.322	9.38	+/- 0.3 mg/l of sat value	P / F	42.762	Slope 15 to 34 Off set 2	P / F	Y / N ▲
ORP mV	200	200	+/- 5 mV	P / F	18.92	Off set +/- 30 mV	P / F	Y / N *
Turb. NTU	0.0	-0.4	+/- 2 NTU	P / F	1.93 1	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	1308	+/- 10%	P / F	0.341	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: .110 ft

Voltage reading from solar panels: 12.57 V

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

Voltage reading from batteries: 12.54 / 12.54 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: ▲ D.O. sensor needs to be refurbished / cleaned w/ NH_3 10% solution with pending storm leave for next weeks O&M.

Rev. 06/22/09

change Bottles + Tubing and distributor arm tubing.

IPOU2
WOBURN, MA

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-TT
Pond outlet

Inspector: Klan

Date: 8/27/09

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: 47 353

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP 10928 pH s.u.	4.01	4.16	+/- 0.5 pH unit	(P) / F	(Y) / N
DX 05461 DO mg/l	6.782	6.50	+/- 0.7 mg/l of sat value	(P) / F	Y / N
PP 10928 ORP mV	200	209	+/- 10 mV	(P) / F	(Y) / N
93 03968 Turb. NTU	0.0	0.0	+/- 2 NTU	(P) / F	(Y) / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC 05261 Sp. Cond. mS/cm	1413	1597	+/- 15%	(P) / F	(Y) / N
DX05743	7.14	8.12	0.7	F	(Y)

290 uAmp

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. +1	7	7.10	+/- 0.1 pH unit (for pH 7)	(P) F	-59.87	Slope -54 to -62 mV Off set 372 to 450	(P) F	Y (N)
177 -160	4 / 10	NA		NA	417.41			
316 uA DO mg/l			+/- 0.3 mg/l of sat value	P / F	43.77 200	Slope 15 to 34 Off set 2	P / (F)	Y / N
190 ORP mV	200	200	+/- 5 mV	(P) / F	-5.87	Off set +/- 30 mV	(P) F	Y (N)
+4 0 Turb. NTU	0.0	0.0	+/- 2 NTU	(P) / F	0.45	Off set +/- 2 NTU (screen in dark cap)	(P) / F	Y / (N)
Temp. °C			NA	P / F		NA	NA	Y / N
187 Sp. Cond. mS/cm	1413	1467	+/- 10%	(P) / F	0.212	K cell value 0.33 to 0.39	P / (F)	(Y) / N
DX05943	7.154	7.32	P		3836			

switched sensor

D.O sensor need to be replace

D.O Calibrated 8/28/09

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

Signal Strength: 27 %

Spectrum Strength: 46 %

Voltage reading from solar panels: 13.43 V

Voltage reading from batteries: 13.51 / 13.53 V

Manual stage reading (with ruler) from bottom of A/V sensor: .75 ft

Stage reading from staff gauge: .82 ft

Stage reading from ISCO: 0.683 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: _____ cf

ISCO stream velocity reading: .85 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: Sp. cond. sensor changed to LC 05261

Rev. 06/22/09

move kellem strap in place

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-02-TT
Pond outlet

Inspector: Emmons

Date: 8/28

D.O. only from cleaned sensor stabilization 8/27/09

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.			+/- 0.5 pH unit	P / F	Y / N
DO mg/l	7.86	8.007	+/- 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 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	8.02	8.22	+/- 0.3 mg/l of sat value	(P) F	26.94 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: _____ 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: _____ 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-03-TT
Abenjona

Inspector: Emmanuel Tan, Forgey

Date: 8/27/09

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)
PP1106 I	pH s.u.	4.01	4.17	+/- 0.5 pH unit	P / F	Y / N
DX05581	DO mg/l	7.68	13.42	+/- 0.7 mg/l of sat value	P / F	Y / N
PP1106 I	ORP mV	240	243	+/- 10 mV	P / F	Y / N
TB03993	Turb. NTU	0.0	0.4	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
LC05760	Sp. Cond. mS/cm	1413	1407	+/- 15%	P / F	Y / N

Kcell 0.3395 8/27/09 am

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	7.07	+/- 0.1 pH unit (for pH 7)	P / F	-55.59	Slope -54 to -62 mV Off set 372 to 450	-52.94 P / F	Y / N
	4	NA		NA	392.50		395.3	
	10							
DO mg/l	7.28	7.275	+/- 0.3 mg/l of sat value	P / F	34.55	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	240	240	+/- 5 mV	P / F	-23.52	Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0		+/- 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	1412	+/- 10%	P / F	~~0.271~~	K cell value 0.33 to 0.39	P / F	Y / N

Yes

Y

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

Manual stage reading (with ruler) from bottom of A/V sensor: 0.63 ft

Signal Strength: 0 %

Stage reading from staff gauge: 0.48 ft

Spectrum Strength: error %

Stage reading from ISCO: 0.306 ft

Voltage reading from solar panels: 12.89 V

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

Voltage reading from batteries: 12.93 / 12.97 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: 0.131 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: Change pH filling solutions for pH + ORP recalibrated

Rev. 06/22/09

Replaced Spec. cond sensor w/ LC05760

Replaced D.O. sensor DX05581 w/ DX05581

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-03-TT
Abbajona

Inspector: Emmons
Date: 8/28/09

D.O. calibration only after cleaning sensor

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)*
pH s.u.			+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.84	9.57	+/- 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 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	8.857	8.99	+/- 0.3 mg/l of sat value	(P) / F	20.45 ~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 cup)	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: _____ 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: _____ 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-TT
Mishawum

Inspector: L. Low, J. Forgey

Date: 8/27/09

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)
SN PR11735 pH s.u.	4.01	3.88	+/- 0.5 pH unit	P / F	Y / N
SN DX05739 DO mg/l	7.50	6.70	+/- 0.7 mg/l of sat value	P / F	Y / N
SN PR11735 ORP mV	240	249	+/- 10 mV	P / F	Y / N
TB04505 Turb. NTU	0.0	-0.4	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
L COS769 Sp. Cond. mS/cm	1413	1414	+/- 15%	P / F	Y / N

DX05860

D.O.

Standard	Calibration Confirmation	Calibration Acceptance Criteria	Calibration Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
7.293	7.052	0.7	P	Y	slope 40.81 2.0		Replace w/ sensor

Calibration confirmation of In-Situ Troll:

	Standard	Calibration Confirmation	Acceptance Criteria	Pass / Fail	Sensor Range Value	Sensor Acceptance Criteria	Sensor Pass / Fail	Sensor Replaced or Solution Changed?
pH s.u. 5.0	7	7.09	+/- 0.1 pH unit (for pH 7)	P / F	-55.01	Slope -54 to -62 mV Off set 372 to 450	P / F	Y / N
189 mV -1555	4 / 10	NA		NA	413.69			
250mA DO mg/l	7.50	7.62	+/- 0.3 mg/l of sat value	P / F	34.66 2.0	Slope 15 to 34 Off set 2	P / F	Y / N
223 mV ORP mV	240	240	+/- 5 mV	P / F	-17.17	Off set +/- 30 mV	P / F	Y / N
0.49 NTU Turb. NTU	0	0	+/- 2 NTU	P / F	0.64	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	1413	+/- 10%	P / F	0.32	K cell value 0.33 to 0.39	P / F	Y / N

passed Low 0.50

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

7.27 6.95 0.3 F slope 40.81

Manual stage reading (with ruler) from bottom of A/V sensor: 0.52 ft

Signal Strength: 19 %

Spectrum Strength: 43 %

Voltage reading from solar panels: 13.31 V

Voltage reading from batteries: 13.10 13.21 V

Stage reading from staff gauge: 0.64 ft

Stage reading from ISCO: 0.56 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: ____ cf

ISCO stream velocity reading: 2.37 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: DX sensor switched - DX05527 cleaned 8/27/09

Rev. 06/22/09

Needs to be calibrated 8/28/09 ✓

see 8/28/09 calibration report

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW-04-TT
Mishawum

Inspector: Emmons

Date: 8/28/09

D.O. calibration only

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.			+/- 0.5 pH unit	P / F	Y / N
DO mg/l	~~8.74~~	6.37	+/- 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 -54 to -62 mV Off set 372 to 450	P / F	Y / N
	4	NA		NA				
	10							
DO mg/l	8.74	8.96	+/- 0.3 mg/l of sat value	(P) F	~~27.37~~ 2.0	Slope 15 to 34 Off set 2	(P) F	Y / N
ORP mV	~~8.74~~	~~8.96~~	+/- 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: _____ 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: _____ 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: SW05TT

Inspector: Forgey / Emmons / Bergeron

Date: 8/12/7

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

Swap out Trolls In-Situ S/N: 47339 → 47351

Reading check of In-Situ Troll sensors:

PP10929
DX05860
TB03966

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u.	4.01	3.99	+/- 0.5 pH unit	P / F	Y / N
DO mg/l	8.79	10.42	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV	200	218	+/- 10 mV	P / F	Y / N
Turb. NTU	0.0	-2.1	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm	1413	1185	+/- 15% 16%	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	7.04	+/- 0.1 pH unit (for pH 7)	P / F	-57.34 407	Slope -54 to -62 mV Off set 372 to 450	P / F -58.81 380	Y / N
	4 / 10	NA		NA				
DO mg/l	8.624	8.55	+/- 0.3 mg/l of sat value	P / F	29.55	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	11.54	Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0	-0.5	+/- 2 NTU	P / F	0.34	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	1457	+/- 10%	P / F	0.31	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: 1.11 ft (Instl 0.30)

Signal Strength: 0 %

Stage reading from staff gauge: 1.06 ft

Spectrum Strength: 61101 %

Stage reading from ISCO: 1.06 ft

Voltage reading from solar panels: 12.10 V

Stage reading reset to (if +/- 0.1): 1.11 ft

Voltage reading from batteries: 12.31/12.30 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:	cf	Color of 750 Dessicant:	blue / pink / yellow / green
ISCO stream velocity reading:	7.68 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: Difference between old staff = 1.54 new

Rev. 06/22/09

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW06 TT
Montvale

Inspector: FORGEX / Emmons

Date: 8/27

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: 47482

Reading check of In-Situ Troll sensors:

		Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP11065	pH s.u.	4.01	4.17	+/- 0.5 pH unit	P / F	Y / N
DX05565	DO mg/l	8.91	9.54	+/- 0.7 mg/l of sat value	P / F	Y / N
PP11065	ORP mV	200	217	+/- 10 mV	P / F	Y / N
TB04003	Turb. NTU	0.0	-0.7	+/- 2 NTU	P / F	Y / N
	Temp. °C			+/- 0.5 °C	P / F	Annually Only
CC05347	Sp. Cond. mS/cm	1413	1451	+/- 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	7.04	+/- 0.1 pH unit (for pH 7)	P / F	~~-56.61~~	Slope -54 to -62 mV Off set 372 to 450	~~-52.85~~ P / F	Y / N
	4	NA		NA	~~395~~		~~366.61~~	
	10							
DO mg/l	8.81	8.98	+/- 0.3 mg/l of sat value	P / F	~~36.11~~ 2	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0		+/- 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	1412	+/- 10%	P / F	0.296 0.30	K cell value 0.33 to 0.39	P / F 1 insitu 0.3 P	Y / N

Save Calibrat.

* Auxit, new sensor

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

Signal Strength: 19 %

Spectrum Strength: 0 %

Voltage reading from solar panels: 12.28 V

Voltage reading from batteries: 12.31 / 12.34

Manual stage reading (with ruler) from bottom of A/V sensor: 1.20 ft

Stage reading from staff gauge: 1.54 ft

Stage reading from ISCO: 1.176 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: ____ cf

ISCO stream velocity reading: 0 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 sensor needs to be refurbished w/ extensive cleaning due to storm will post pone till next week.

Rev. 06/22/09

IPOU2
WOBURN, MA

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW07TT
Swanton

Inspector: Fargy Emmons
Date: 8/27

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

Swap out Troll

In-Situ S/N: 47341 to 48344

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
PP10921 pH s.u.	4.01	3.97	+/- 0.5 pH unit	P / F	Y / N
DX05445 DO mg/l	8.432	9.03	+/- 0.7 mg/l of sat value	P / F	Y / N
PP10921 ORP mV	200	182	+/- 10 mV	P / F	Y / N
TB04434 Turb. NTU	0.0	0.0	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
CC05250 Sp. Cond. mS/cm	1413	1325	+/- 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	7.04	+/- 0.1 pH unit (for pH 7)	P / F	-57.71	Slope -54 to -62 mV Off set 372 to 450	-53 P / F	Y / N
	4	NA		NA	398		369	
	10							
DO mg/l	8.269	8.43	+/- 0.3 mg/l of sat value	P / F	25.35	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F		Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0	0.1	+/- 2 NTU	P / F	0.03	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	1414	+/- 10%	P / F	0.311 In situ	K cell value 0.33 to 0.39	P / F	Y / N

waiting for parts

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

Manual stage reading (with ruler) from bottom of A/V sensor: .81 ft

Signal Strength: 26 %

Stage reading from staff gauge: .56 ft

Spectrum Strength: 94 %

Stage reading from ISCO: .62 ft

Voltage reading from solar panels: 12.88 V

Stage reading reset to (if +/- 0.1): .81 ft

Voltage reading from batteries: 12.87 / 12.85

Monthly O&M

Solar panels cleaned and inspected? Y / N

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

ISCO stream velocity reading: 3.87 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: Troll 47341: Error in Troll on spec. cond K cell 0.015

Rev. 06/22/09

swap out w/ spare troll 47344

IPOU2
WOBURN, MA

OPERATION MAINTENANCE INSPECTION SHEET

SITE ID: SW08TT
USGS

Inspector: Forgy / Emmons
Date: 8/27

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

* swapped In-Situ S/N: 47340 → 47352

Reading check of In-Situ Troll sensors:

	Standard	Reading Check	Acceptance Criteria	Pass / Fail	Recalibrated? (see below)
pH s.u. (PP10927)	4.01	4.14	+/- 0.5 pH unit	P / F	Y / N
DO mg/l (DX05433)	8.624	8.96	+/- 0.7 mg/l of sat value	P / F	Y / N
ORP mV (PP10927)	200	217	+/- 10 mV	P / F	Y / N
Turb. NTU (TB03970)	0.0	-1.2	+/- 2 NTU	P / F	Y / N
Temp. °C			+/- 0.5 °C	P / F	Annually Only
Sp. Cond. mS/cm (LC05301)	1413	1325	+/- 15%	P / F	Y / N

Jay Eric 781-721-7100

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	7.05	+/- 0.1 pH unit (for pH 7)	P / F	4→7 -56	Slope -54 to -62 mV	7→10 -52	Y / N
	4	NA		NA	390	Off set 372 to 450	P / F 362	
	10							
DO mg/l	8.52	8.76	+/- 0.3 mg/l of sat value	P / F	25.31	Slope 15 to 34 Off set 2	P / F	Y / N
ORP mV	200	200	+/- 5 mV	P / F	0.67	Off set +/- 30 mV	P / F	Y / N
Turb. NTU	0.0	0.0	+/- 2 NTU	P / F	-0.31	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	1415	+/- 10%	P / F	0.333	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: .80 ft

Signal Strength: 0 %

Stage reading from staff gauge: 2.60 ft

Spectrum Strength: 2.106 %

Stage reading from ISCO: .61 ft

need 3.08 3.70 to be 3.04 ~~Height~~ resenyed

Voltage reading from solar panels: 12.32 V

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

Voltage reading from batteries: 12.55 12.54

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:	.428 cf	750 Dessicant replaced?	Y / N
6712 Humidy Indicator:	blue / pink / white	SDI-12 Dessicant Color:	blue / pink need
	20 / 30 / 40	SDI-12 Dessicant Replaced?	Y / N
6712 Dessicant Replaced?	Y / N		

Notes:
SDI-12 Desicant need replacement next week.
Water Rose 1 ft since I arrived and was installing AV sensor.
* Cond. reads low (low 1000s) when reading the troll value and is within range

Troll is fine

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ROUX ASSOCIATES, INC.

T:\Projects\Industri-Plex 1194 (see also Solutia)\OU2\SW Monitoring\Field Forms\O&M Forms\SW Station O&M Form_06.22.09.xlsx