GZA
GeoEnvironmental, Inc.

Engineers and Scientists

January 27, 2012
File No. 04.0029307.00

Ms. Amy Daigneault
Pretreatment Coordinator
Lowell Regional Wastewater Utility
451 First St Blvd (Rte-110)
Lowell, Massachusetts 01850

380 Harvey Road
Manchester
New Hampshire
03103-3347
603-623-3600
FAX 603-624-9463
www.gza.com

Re: Monthly Self Monitoring Report
January 2012
Merrimack Station
Public Service of New Hampshire
Bow, New Hampshire

Dear Ms. Daigneault:

On behalf of Public Service of New Hampshire (PSNH), GZA GeoEnvironmental, Inc. (GZA) is pleased to submit the attached Self-Monitoring Report (SMR) for the period January 1, 2012 through January 31, 2012. This SMR is intended to satisfy Conditions 7 and 8 of the Interim Discharge Authorization (IDA) issued to PSNH by the Lowell Regional Wastewater Utility (Utility), dated September 28, 2011.

WASTEWATER ANALYTICAL RESULTS

A wastewater sampling program was conducted at Merrimack Station during the period from 10:00 am on January 4, 2012 through 10:00 am on January 5, 2012 by Eastern Analytical, Inc. under the direction of GZA. To satisfy the monthly sampling requirements in Conditions 7 and 8, found on Page 2 of the PSNH IDA, samples were collected at the end of the treatment process.

The wastewater samples were shipped under chain-of-custody protocol and analyzed by Eastern Analytical Inc. of Concord, New Hampshire and Frontier Global Sciences of Seattle, Washington.

The attached **SMR Summary Sheet** summarizes the analytical results for all required parameters as outlined in Condition 8 of the IDA including pH, chemical oxygen demand (COD), arsenic, cadmium, lead, mercury, and silver. The attached **Analytical Data Report**, however, contains a more comprehensive list of parameters. As referenced in the attached **SMR Summary Sheet**, both grab samples and a composite sample were collected. The results indicate that pollutant concentrations were within the Local Sewer Discharge Limits.

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Wastewater flow data for the 24-hour sampling period was estimated based on the actual number of tank trucks sent to the Utility and tanker capacity.

ANALYTICAL NOTATION

FGD wastewater requires specialized analytical techniques to overcome matrix interference on some trace metals analysis. Many analytical laboratories may be unaware of this. We offer an excerpt below from the Environmental Protection Agency's (EPA's) web site and a link to their draft procedure that contains further guidance.

LABORATORY ANALYSIS OF FGD WASTEWATER

Wastewater from FGD systems can contain constituents known to cause matrix interferences. EPA has observed that, during inductively coupled plasma – mass spectrometry (ICP-MS) analysis of FGD wastewater, certain elements commonly present in the wastewater may cause polyatomic interferences that bias the detection and/or quantization of certain elements of interest. These potential interferences may become significant when measuring trace elements at concentrations in the low parts-per-billion range.

As part of a recent sampling effort for the steam electric power generating effluent guidelines rulemaking, EPA developed a standard operating procedure (SOP) that was used in conjunction with EPA Method 200.8 to conduct ICP-MS analyses of FGD wastewater. The SOP describes critical technical and quality assurance procedures that were implemented to mitigate anticipated interferences and generate reliable data for FGD wastewater. EPA regulations at 40 CFR 136.6 already allow the analytical community flexibility to modify approved methods to lower the costs of measurements, overcome matrix interferences, or otherwise improve the analysis. The draft SOP developed for FGD wastewater takes a proactive approach toward looking for and taking steps to mitigate matrix interferences, including using specialized interference check solutions (i.e., a synthetic FGD wastewater matrix). EPA's draft SOP is being made available to laboratories contemplating ICP-MS analysis of FGD wastewater, either for adoption as currently written or to serve as a framework for developing their own laboratory-specific SOPs. Standard Operating Procedure: Inductively Coupled Plasma/Mass Spectrometry for Trace Element Analysis in Flue Gas Desulfurization Wastewaters (30 pp, 174K)

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Should you have any questions concerning this report, please do not hesitate to contact me at (603) 232-8744.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Ronald A. Breton

Ronald A. Breton, P.E.
Principal

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Attachments: SMR Summary Sheet
Analytical Data Report

SMR SUMMARY SHEET

LOWELL REGIONAL WASTEWATER UTILITY
Industrial Sewer User Self-Monitoring Report Summary Sheet

Facility Information: Company Name Public Service of New Hampshire

Facility Address 97 River Road Bow, New Hampshire Permit No. NA (Interim Discharge Authorization)

Facility Contact Harold Keyes Telephone (603) 224-4081

----------***Use A Separate Summary Sheet For Each Monitoring Point***----------

Monitoring Report: Monitoring Point End of pretreatment process Submittal Date January 27, 2012

Reporting Period (circle applicable): Baseline Annually Semi-Annually Quarterly (Monthly) Re-Sample

Reporting Period Start Date January 1, 2012 Reporting Period End Date January 31, 2012

Sample Analysis: Certified Analytical Lab Eastern Analytical, Inc. (EAI)

Authorized Rep. Lorraine Olashaw Certification No. 1012

Analytical Sub-Contractor Frontier Global Sciences Certification No. E87575

Sample Collection: Sampler (Lab/Self/Other) Jeff Gagne, EAI

Sample Type(s) (circle all that apply): (Grab) (Time Composite) Flow Composite

Grab Sampling: Sample Date 1/05/2012 Sample Time 08:00 am

pH (Standard Units) 7.3 Instantaneous Flow Rate (GPM) _____

Composite Sampling: Start Date/Time 1/04/2012, 10:00 am Stop Date/Time 1/05/2012, 10:00 am

No. Aliquots 48 Aliquot Volume 400 mL Sample Volume 19.2 Liters

Flow Data: Sampling Interval Volume (Gal) 48,000 Daily Flow Rate (GPD) 41,567 (average)

Monitoring Period Industrial Wastewater Flow (Gal) 1,247,000 [ ] Meter [X] Estimate

Monitoring Period Start Date January 1, 2012 Monitoring Period End Date January 31, 2012

Refer to Self-Monitoring Report Instructions for details on completing this SMR Summary Sheet

LOWELL REGIONAL WASTEWATER UTILITY
Industrial Sewer User Self-Monitoring Report Summary Sheet

Submit All Chains of Custody and Laboratory Result Sheets With SMR Summary Sheet

Analytical Results:

Parameter	Analysis Date	Result (mg/L)	Parameter	Analysis Date	Result (mg/L)
BOD			Copper		
COD	01/12/2012	130	Cyanide (Total)		
O & G 413.1 / 1664			Fluoride		
TSS			Lead	01/09/2012	< 0.0002
TOC *			Mercury	01/09/2012	0.0000105
TTO ** 624 / 8260B – 625 / 8270			Molybdenum		
Aluminum			Nickel		
Antimony			Nitrogen (Kjeldahl)		
Arsenic	01/10/2012	0.00498	Phenols (Total)		
Barium			Selenium		
Beryllium			Silver	01/09/2012	<0.0001
Cadmium	01/09/2012	0.000207	Thallium		
Chromium (Hexavalent)			Zinc		
Chromium (Total)			Other		

BOD = Biochemical Oxygen Demand COD = Chemical Oxygen Demand O & G = Oil & Grease TSS = Total Suspended Solids TTO = Total Toxic Organics
**TOC (Total Organic Carbon) = is the amount of carbon bound in an organic compound and is often used as a non-specific indicator of water quality. TOC measures both the total carbon present as well as the inorganic carbon (IC). Subtracting the inorganic carbon from the total carbon yields TOC.*
***TTO's = Summation of all quantifiable values greater than 0.01 mg/L for toxic organics listed in 40 CFR 413.02(i). TTO's include PCB's (Poly-Chlorinated Biphenyls), VOC's (Volatile Organic Compounds), SVOC's (Semi-Volatile Organic Compounds). PCB's, VOC's and SVOC's shall be analyzed using EPA Methods 608, 624, and 625, respectively.*

Zero Discharge / Self-Monitoring (initial if applicable):

_____ No industrial wastewater from permitted processes has been discharged to sewer during the monitoring period

_____ No sampling has been conducted on permitted sewer discharges during the monitoring period

Certification Statement:

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Harold Keyes
Printed Name of Authorized Representative

Station Manager
Title

Harold Keyes
Signature of Authorized Representative

1/26/2012
Date

ANALYTICAL DATA REPORT

eastern analytical

Arthur Auclair
Northeast Utilities
97 River Road
Bow, NH 03304

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 106677
Client Identification: Merrimack Station
Date Received: 1/5/2012

Dear Mr. Auclair:

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director

1.13.12
Date

44
# of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Temperature upon receipt (°C): 4.7 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
106677.01	Treat Tank Eff Composite	1/5/12	1/5/12	aqueous		Adheres to Sample Acceptance Policy
106677.02	Treat Tank Eff Grab	1/5/12	1/5/12	aqueous		Adheres to Sample Acceptance Policy
106677.03	Treat Tank Eff Grab	1/5/12	1/5/12	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitibility, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.

All results contained in this report relate only to the above listed samples.

References include:

1) EPA 600/4-79-020, 1983

2) Standard Methods for Examination of Water and Wastewater : Inorganics, 19th Edition, 1995; Microbiology, 20th Edition, 1998

3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB

4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Sample ID: Treat Tank Eff Grab

Lab Sample ID:	106677.02
Matrix:	aqueous
Date Sampled:	1/5/12
Date Received:	1/5/12
Units:	ug/l
Date of Analysis:	1/6/12
Analyst:	KJP
Method:	624
Dilution Factor:	1
Chloromethane	< 5
Vinyl chloride	< 2
Bromomethane	< 2
Chloroethane	< 5
Trichlorofluoromethane	< 5
Acrolein	< 50
Acetone	< 50
1,1-Dichloroethene	< 1
Methylene chloride	< 5
Carbon disulfide	< 5
Acrylonitrile	< 50
Methyl-t-butyl ether(MTBE)	< 10
trans-1,2-Dichloroethene	< 2
Vinyl acetate	< 10
1,1-Dichloroethane	< 2
cis-1,2-Dichloroethene	< 2
2-Butanone(MEK)	< 10
Chloroform	< 2
1,1,1-Trichloroethane	< 2
Carbon tetrachloride	< 2
Benzene	< 1
1,2-Dichloroethane	< 2
Trichloroethene	< 2
1,2-Dichloropropane	< 2
Bromodichloromethane	< 2
2-Chloroethylvinylether	< 2
4-Methyl-2-pentanone(MIBK)	< 10
cis-1,3-Dichloropropene	< 2
Toluene	2
trans-1,3-Dichloropropene	< 2
1,1,2-Trichloroethane	< 2
2-Hexanone	< 10
Tetrachloroethene	< 2
Dibromochloromethane	< 2
Chlorobenzene	< 2
Ethylbenzene	< 1
mp-Xylene	< 1
o-Xylene	< 1
Styrene	< 1
Bromoform	< 2
1,1,2,2-Tetrachloroethane	< 2
1,3-Dichlorobenzene	< 1
1,4-Dichlorobenzene	< 1
1,2-Dichlorobenzene	< 1
4-Bromofluorobenzene (surr)	**98 %R**
1,2-Dichlorobenzene-d4 (surr)	**90 %R**
Toluene-d8 (surr)	**100 %R**

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Chloromethane	< 5	19 (97 %R)	21 (105 %R) (8 RPD)	1/6/2012	ug/l	0 - 273	20	624
Vinyl chloride	< 2	18 (91 %R)	20 (101 %R) (10 RPD)	1/6/2012	ug/l	0 - 251	20	624
Bromomethane	< 2	21 (105 %R)	23 (113 %R) (7 RPD)	1/6/2012	ug/l	0 - 242	20	624
Chloroethane	< 5	19 (95 %R)	20 (101 %R) (6 RPD)	1/6/2012	ug/l	14 - 230	20	624
Trichlorofluoromethane	< 5	17 (84 %R)	18 (88 %R) (5 RPD)	1/6/2012	ug/l	17 - 181	20	624
Acrolein	< 50	< 50 (%R N/A)	< 50 (%R) (RPD)	1/6/2012	ug/l			624
Acetone	< 50	< 50 (78 %R)	< 50 (90 %R) (14 RPD)	1/6/2012	ug/l			624
1,1-Dichloroethene	< 1	17 (83 %R)	18 (89 %R) (7 RPD)	1/6/2012	ug/l	0 - 234	20	624
Methylene chloride	< 5	18 (88 %R)	19 (93 %R) (6 RPD)	1/6/2012	ug/l	0 - 221	20	624
Carbon disulfide	< 5	17 (%R)	19 (%R) (RPD)	1/6/2012	ug/l			624
Acrylonitrile	< 50	< 50 (%R)	< 50 (%R) (RPD)	1/6/2012	ug/l			624
Methyl-t-butyl ether(MTBE)	< 10	20 (%R)	20 (%R) (RPD)	1/6/2012	ug/l			624
trans-1,2-Dichloroethene	< 2	18 (89 %R)	18 (92 %R) (3 RPD)	1/6/2012	ug/l	54 - 156	20	624
Vinyl acetate	< 10	30 (%R)	30 (%R) (RPD)	1/6/2012	ug/l			624
1,1-Dichloroethane	< 2	19 (93 %R)	20 (98 %R) (5 RPD)	1/6/2012	ug/l	59 - 155	20	624
cis-1,2-Dichloroethene	< 2	19 (%R)	20 (%R) (RPD)	1/6/2012	ug/l			624
2-Butanone(MEK)	< 10	20 (%R)	20 (%R) (RPD)	1/6/2012	ug/l			624
Chloroform	< 2	19 (94 %R)	20 (99 %R) (5 RPD)	1/6/2012	ug/l	51 - 138	20	624
1,1,1-Trichloroethane	< 2	18 (91 %R)	19 (97 %R) (6 RPD)	1/6/2012	ug/l	52 - 162	20	624
Carbon tetrachloride	< 2	18 (91 %R)	19 (95 %R) (4 RPD)	1/6/2012	ug/l	70 - 140	20	624
Benzene	< 1	19 (97 %R)	20 (102 %R) (5 RPD)	1/6/2012	ug/l	37 - 151	20	624
1,2-Dichloroethane	< 2	18 (91 %R)	19 (94 %R) (3 RPD)	1/6/2012	ug/l	49 - 155	20	624
Trichloroethene	< 2	19 (93 %R)	20 (98 %R) (5 RPD)	1/6/2012	ug/l	71 - 157	20	624
1,2-Dichloropropane	< 2	19 (95 %R)	20 (98 %R) (3 RPD)	1/6/2012	ug/l	0 - 210	20	624
Bromodichloromethane	< 2	19 (96 %R)	20 (100 %R) (4 RPD)	1/6/2012	ug/l	35 - 155	20	624
2-Chloroethylvinylether	< 2	23 (115 %R)	24 (121 %R) (5 RPD)	1/6/2012	ug/l	0 - 305	20	624
4-Methyl-2-pentanone(MIBK)	< 10	20 (%R)	20 (%R) (RPD)	1/6/2012	ug/l			624
cis-1,3-Dichloropropene	< 2	22 (109 %R)	23 (113 %R) (4 RPD)	1/6/2012	ug/l	0 - 227	20	624
Toluene	< 1	20 (101 %R)	21 (103 %R) (2 RPD)	1/6/2012	ug/l	47 - 150	20	624
trans-1,3-Dichloropropene	< 2	18 (90 %R)	19 (93 %R) (3 RPD)	1/6/2012	ug/l	17 - 183	20	624
1,1,2-Trichloroethane	< 2	20 (100 %R)	21 (104 %R) (4 RPD)	1/6/2012	ug/l	52 - 150	20	624
2-Hexanone	< 10	20 (%R)	20 (%R) (RPD)	1/6/2012	ug/l			624
Tetrachloroethene	< 2	20 (100 %R)	21 (106 %R) (6 RPD)	1/6/2012	ug/l	64 - 148	20	624
Dibromochloromethane	< 2	20 (102 %R)	21 (104 %R) (2 RPD)	1/6/2012	ug/l	53 - 149	20	624
Chlorobenzene	< 2	20 (98 %R)	20 (100 %R) (2 RPD)	1/6/2012	ug/l	37 - 160	20	624
Ethylbenzene	< 1	20 (101 %R)	21 (105 %R) (4 RPD)	1/6/2012	ug/l	37 - 162	20	624
mp-Xylene	< 1	40 (101 %R)	43 (106 %R) (5 RPD)	1/6/2012	ug/l	70 - 130	20	624
o-Xylene	< 1	21 (104 %R)	22 (109 %R) (5 RPD)	1/6/2012	ug/l	70 - 130	20	624
Styrene	< 1	21 (%R)	22 (%R) (RPD)	1/6/2012	ug/l			624
Bromoform	< 2	18 (88 %R)	18 (90 %R) (2 RPD)	1/6/2012	ug/l	45 - 169	20	624
1,1,2,2-Tetrachloroethane	< 2	20 (99 %R)	20 (100 %R) (1 RPD)	1/6/2012	ug/l	46 - 157	20	624
1,3-Dichlorobenzene	< 1	20 (100 %R)	21 (104 %R) (4 RPD)	1/6/2012	ug/l	59 - 156	20	624
1,4-Dichlorobenzene	< 1	20 (98 %R)	20 (102 %R) (4 RPD)	1/6/2012	ug/l	18 - 190	20	624
1,2-Dichlorobenzene	< 1	20 (98 %R)	20 (102 %R) (4 RPD)	1/6/2012	ug/l	18 - 190	20	624
4-Bromofluorobenzene (surr)	100 %R	101 %R	102 %R	1/6/2012	% Rec	70 - 130		624

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
1,2-Dichlorobenzene-d4 (surr)	93 %R	90 %R	89 %R	1/6/2012	% Rec	70 - 130		624
Toluene-d8 (surr)	100 %R	102 %R	102 %R	1/6/2012	% Rec	70 - 130		624

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/! Flagged analyte recoveries deviated from the QA/QC limits. Any impact to data is addressed below.

LABORATORY REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Sample ID: Treat Tank Eff Grab

Lab Sample ID:	106677.02
Matrix:	aqueous
Date Sampled:	1/5/12
Date Received:	1/5/12
Units:	ug/l
Date of Extraction/Preparation	1/6/12
Date of Analysis:	1/6/12
Analyst:	JMR
Method:	625mod
Dilution Factor:	1
Phenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4,5-Trichlorophenol	< 1
2,4,6-Trichlorophenol	< 1
Pentachlorophenol	< 5
2-Nitrophenol	< 1
4-Nitrophenol	< 5
2,4-Dinitrophenol	< 5
2-Methylphenol	< 1
3/4-Methylphenol	< 1
2,4-Dimethylphenol	< 1
4-Chloro-3-methylphenol	< 1
4,6-Dinitro-2-methylphenol	< 5
Benzoic Acid	< 50
N-Nitrosodimethylamine	< 1
n-Nitroso-di-n-propylamine	< 1
n-Nitrosodiphenylamine	< 1
bis(2-Chloroethyl)ether	< 1
bis(2-chloroisopropyl)ether	< 1
bis(2-Chloroethoxy)methane	< 1
1,3-Dichlorobenzene	< 1
1,4-Dichlorobenzene	< 1
1,2-Dichlorobenzene	< 1
1,2,4-Trichlorobenzene	< 1
2-Chloronaphthalene	< 1
4-Chlorophenyl-phenylether	< 1
4-Bromophenyl-phenylether	< 1
Hexachloroethane	< 1
Hexachlorobutadiene	< 1
Hexachlorocyclopentadiene	< 5
Hexachlorobenzene	< 1
4-Chloroaniline	< 1
2-Nitroaniline	< 5
3-Nitroaniline	< 1
4-Nitroaniline	< 1
Benzyl alcohol	< 5
Nitrobenzene	< 1
Isophorone	< 1
2,4-Dinitrotoluene	< 1
2,6-Dinitrotoluene	< 1
Benzidine (estimated)	< 5
3,3'-Dichlorobenzidine	< 1
Pyridine	< 5
Azobenzene	< 1

LABORATORY REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Sample ID: Treat Tank Eff Grab

Lab Sample ID:	106677.02
Matrix:	aqueous
Date Sampled:	1/5/12
Date Received:	1/5/12
Units:	ug/l
Date of Extraction/Preparation	1/6/12
Date of Analysis:	1/6/12
Analyst:	JMR
Method:	625mod
Dilution Factor:	1
Carbazole	< 1
Dimethylphthalate	< 1
Diethylphthalate	< 1
Di-n-butylphthalate	< 5
Butylbenzylphthalate	< 1
bis(2-Ethylhexyl)phthalate	< 5
Di-n-octylphthalate	< 1
Dibenzofuran	< 1
Naphthalene	< 1
2-Methylnaphthalene	< 1
Acenaphthylene	< 1
Acenaphthene	< 1
Fluorene	< 1
Phenanthrene	< 1
Anthracene	< 1
Fluoranthene	< 1
Pyrene	< 1
Benzo[a]anthracene	< 1
Chrysene	< 1
Benzo[b]fluoranthene	< 1
Benzo[k]fluoranthene	< 1
Benzo[a]pyrene	< 1
Indeno[1,2,3-cd]pyrene	< 1
Dibenz[a,h]anthracene	< 1
Benzo[g,h,i]perylene	< 1
2-Fluorophenol (surr)	**33 %R**
Phenol-d6 (surr)	**24 %R**
2,4,6-Tribromophenol (surr)	**90 %R**
Nitrobenzene-D5 (surr)	**71 %R**
2-Fluorobiphenyl (surr)	**72 %R**
p-Terphenyl-D14 (surr)	**84 %R**

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Batch ID: 734507-32510/A010512E6251

Client Designation: **Merrimack Station**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Phenol	< 1	14 (27 %R)	14 (29 %R) (7 RPD)	1/5/2012	ug/l	15 - 130	20	625mod
2-Chlorophenol	< 1	29 (59 %R)	30 (60 %R) (2 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
2,4-Dichlorophenol	< 1	35 (70 %R)	36 (72 %R) (3 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
2,4,5-Trichlorophenol	< 1	18 (72 %R)	19 (75 %R) (4 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
2,4,6-Trichlorophenol	< 1	34 (68 %R)	36 (71 %R) (4 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
Pentachlorophenol	< 5	34 (68 %R)	39 (78 %R) (14 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
2-Nitrophenol	< 1	35 (70 %R)	37 (73 %R) (4 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
4-Nitrophenol	< 5	16 (32 %R)	17 (35 %R) (9 RPD)	1/5/2012	ug/l	15 - 130	20	625mod
2,4-Dinitrophenol	< 5	38 (75 %R)	40 (81 %R) (8 RPD)	1/5/2012	ug/l	15 - 130	20	625mod
2-Methylphenol	< 1	15 (61 %R)	16 (64 %R) (5 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
3/4-Methylphenol	< 1	13 (53 %R)	14 (54 %R) (2 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
2,4-Dimethylphenol	< 1	33 (66 %R)	34 (67 %R) (2 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
4-Chloro-3-methylphenol	< 1	36 (73 %R)	36 (73 %R) (0 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
4,6-Dinitro-2-methylphenol	< 5	39 (77 %R)	41 (81 %R) (5 RPD)	1/5/2012	ug/l	30 - 130	20	625mod
Benzoic Acid	< 50	< 50 (31 %R)	< 50 (34 %R) (9 RPD)	1/5/2012	ug/l	15 - 140	20	625mod
N-Nitrosodimethylamine	< 1	12 (46 %R)	12 (47 %R) (2 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
n-Nitroso-di-n-propylamine	< 1	17 (67 %R)	17 (69 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
n-Nitrosodiphenylamine	< 1	22 (90 %R)	23 (90 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
bis(2-Chloroethyl)ether	< 1	16 (63 %R)	16 (64 %R) (2 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
bis(2-chloroisopropyl)ether	< 1	15 (61 %R)	15 (62 %R) (2 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
bis(2-Chloroethoxy)methane	< 1	17 (69 %R)	18 (70 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
1,3-Dichlorobenzene	< 1	13 (52 %R)	13 (52 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
1,4-Dichlorobenzene	< 1	13 (52 %R)	13 (52 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
1,2-Dichlorobenzene	< 1	14 (54 %R)	14 (55 %R) (2 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
1,2,4-Trichlorobenzene	< 1	14 (57 %R)	14 (58 %R) (2 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
2-Chloronaphthalene	< 1	16 (63 %R)	16 (65 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
4-Chlorophenyl-phenylether	< 1	18 (71 %R)	18 (72 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
4-Bromophenyl-phenylether	< 1	19 (75 %R)	19 (75 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Hexachloroethane	< 1	11 (43 %R)	11 (43 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Hexachlorobutadiene	< 1	10 (40 %R)	10 (42 %R) (5 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Hexachlorocyclopentadiene	< 5	* 9 (37 %R)	10 (41 %R) (10 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Hexachlorobenzene	< 1	18 (73 %R)	19 (78 %R) (7 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
4-Chloroaniline	< 1	20 (80 %R)	20 (80 %R) (0 RPD)	1/5/2012	ug/l	15 - 140	20	625mod
2-Nitroaniline	< 5	17 (67 %R)	18 (71 %R) (6 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
3-Nitroaniline	< 1	18 (73 %R)	19 (76 %R) (4 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
4-Nitroaniline	< 1	18 (73 %R)	19 (77 %R) (5 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Benzyl alcohol	< 5	16 (65 %R)	17 (67 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Nitrobenzene	< 1	16 (65 %R)	17 (68 %R) (5 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Isophorone	< 1	20 (79 %R)	20 (81 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
2,4-Dinitrotoluene	< 1	20 (81 %R)	21 (85 %R) (5 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
2,6-Dinitrotoluene	< 1	19 (75 %R)	20 (79 %R) (5 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Benzidine (estimated)	< 5	23 (92 %R)	20 (81 %R) (13 RPD)	1/5/2012	ug/l	15 - 168	20	625mod
3,3'-Dichlorobenzidine	< 1	19 (75 %R)	19 (76 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Pyridine	< 5	11 (45 %R)	11 (46 %R) (2 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Azobenzene	< 1	18 (71 %R)	18 (71 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Batch ID: 734507-32510/A010512E6251

Client Designation: **Merrimack Station**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Carbazole	< 1	20 (79 %R)	20 (81 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Dimethylphthalate	< 1	18 (73 %R)	18 (74 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Diethylphthalate	< 1	19 (76 %R)	19 (77 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Di-n-butylphthalate	< 5	19 (77 %R)	19 (76 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Butylbenzylphthalate	< 1	19 (76 %R)	19 (77 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
bis(2-Ethylhexyl)phthalate	< 5	19 (76 %R)	19 (76 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Di-n-octylphthalate	< 1	18 (73 %R)	19 (75 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Dibenzofuran	< 1	16 (66 %R)	17 (67 %R) (2 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Naphthalene	< 1	17 (67 %R)	17 (67 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
2-Methylnaphthalene	< 1	16 (62 %R)	16 (62 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Acenaphthylene	< 1	16 (63 %R)	16 (65 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Acenaphthene	< 1	17 (70 %R)	18 (71 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Fluorene	< 1	17 (70 %R)	18 (71 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Phenanthrene	< 1	19 (74 %R)	19 (76 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Anthracene	< 1	19 (77 %R)	19 (77 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Fluoranthene	< 1	19 (75 %R)	19 (76 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Pyrene	< 1	18 (73 %R)	18 (73 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Benzo[a]anthracene	< 1	19 (75 %R)	19 (76 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Chrysene	< 1	19 (77 %R)	19 (77 %R) (0 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Benzo[b]fluoranthene	< 1	19 (75 %R)	19 (77 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Benzo[k]fluoranthene	< 1	19 (77 %R)	20 (79 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Benzo[a]pyrene	< 1	19 (76 %R)	19 (77 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Indeno[1,2,3-cd]pyrene	< 1	19 (78 %R)	19 (77 %R) (1 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Dibenz[a,h]anthracene	< 1	20 (80 %R)	19 (77 %R) (4 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
Benzo[g,h,i]perylene	< 1	20 (79 %R)	19 (77 %R) (3 RPD)	1/5/2012	ug/l	40 - 140	20	625mod
2-Fluorophenol (surr)	39 %R	39 %R	39 %R	1/5/2012	% Rec	21 - 110	20	625mod
Phenol-d6 (surr)	28 %R	28 %R	29 %R	1/5/2012	% Rec	15 - 94	20	625mod
2,4,6-Tribromophenol (surr)	76 %R	92 %R	82 %R	1/5/2012	% Rec	15 - 110	20	625mod
Nitrobenzene-D5 (surr)	76 %R	75 %R	77 %R	1/5/2012	% Rec	35 - 114	20	625mod
2-Fluorobiphenyl (surr)	77 %R	73 %R	75 %R	1/5/2012	% Rec	43 - 116	20	625mod
p-Terphenyl-D14 (surr)	89 %R	95 %R	90 %R	1/5/2012	% Rec	33 - 130	20	625mod

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/!Flagged analyte recoveries deviated from the QA/QC limits.

Hexachlorocyclopentadiene exhibited recovery below acceptance limits in the LCS. Hexachlorocyclopentadiene was not detected in the sample.

LABORATORY REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Sample ID:	Treat Tank Eff Grab
Lab Sample ID:	106677.02
Matrix:	aqueous
Date Sampled:	1/5/12
Date Received:	1/5/12
Units:	mg/L
Date of Extraction/Prep:	1/9/12
Date of Analysis:	1/9/12
Analyst:	LAS
Method:	1664A
Dilution Factor:	1
Oil & Grease (HEM)	< 5

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Oil & Grease (HEM)	< 5	37 (93 %R)	33 (82 %R) (13 RPD)	1/9/2012	mg/L	78 - 114	18	1664A

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/! Flagged analyte recoveries deviated from the QA/QC limits. Any impact to data is addressed below.

LABORATORY REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Sample ID:	Treat Tank Eff Grab
Lab Sample ID:	106677.02
Matrix:	aqueous
Date Sampled:	1/5/12
Date Received:	1/5/12
Units:	ug/l
Date of Extraction/Prep:	1/6/12
Date of Analysis:	1/6/12
Analyst:	JW
Method:	608
Dilution Factor:	1
PCB-1016	< 0.3
PCB-1221	< 0.3
PCB-1232	< 0.3
PCB-1242	< 0.3
PCB-1248	< 0.3
PCB-1254	< 0.3
PCB-1260	< 0.3
TMX (surr)	**81 %R**
DCB (surr)	**96 %R**

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Batch ID: 734508-43146/A010612E608P1

Client Designation: **Merrimack Station**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
PCB-1016	< 0.3	2.0 (101 %R)	2.1 (106 %R) (5 RPD)	1/6/2012	ug/l	40 - 140	20	608
PCB-1221	< 0.3	< 0.3 (%R N/A)	< 0.3 (%R N/A) (RPD N/A)	1/6/2012	ug/l			608
PCB-1232	< 0.3	< 0.3 (%R N/A)	< 0.3 (%R N/A) (RPD N/A)	1/6/2012	ug/l			608
PCB-1242	< 0.3	< 0.3 (%R N/A)	< 0.3 (%R N/A) (RPD N/A)	1/6/2012	ug/l			608
PCB-1248	< 0.3	< 0.3 (%R N/A)	< 0.3 (%R N/A) (RPD N/A)	1/6/2012	ug/l			608
PCB-1254	< 0.3	< 0.3 (%R N/A)	< 0.3 (%R N/A) (RPD N/A)	1/6/2012	ug/l			608
PCB-1260	< 0.3	2.0 (102 %R)	2.1 (105 %R) (3 RPD)	1/6/2012	ug/l	40 - 140	20	608
TMX (surr)	84 %R	88 %R	90 %R	1/6/2012	% Rec	30 - 150		608
DCB (surr)	95 %R	101 %R	100 %R	1/6/2012	% Rec	30 - 150		608

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

LABORATORY REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Sample ID:	Treat Tank Eff Composite
Lab Sample ID:	106677.01
Matrix:	aqueous
Date Sampled:	1/5/12
Date Received:	1/5/12

		Units	Analysis Date	Time	Method	Analyst
Solids Suspended	**14**	mg/L	01/10/12	15:40	2540D	DLS
Solids Dissolved	**21000**	mg/L	01/11/12	13:15	2540C	DLS
Fluoride	**10**	mg/L	01/11/12	11:23	300.0	KL
Sulfate	**1200**	mg/L	01/11/12	11:23	300.0	KL
Chloride	**11000**	mg/L	01/10/12	12:17	4500CIE	DLS
Nitrate-N	**100**	mg/L	01/06/12	12:57	353.2	DLS
Alkalinity Total (CaCO3)	**180**	mg/L	01/11/12	9:40	2320B	SEL
Ammonia-N	**0.92**	mg/L	01/10/12	8:30	4500NH3D	SEL
BOD	< 6	mg/L	01/06/12	14:05	5210B	SKC
COD	**130**	mg/L	01/12/12	10:20	H8000	SKC
pH	**7.3**	SU	01/05/12	15:10	4500H+B	NZ

Sample ID:	Treat Tank Eff Grab
Lab Sample ID:	106677.02
Matrix:	aqueous
Date Sampled:	1/5/12
Date Received:	1/5/12

		Units	Analysis Date	Time	Method	Analyst
Cyanide Total	**0.02**	mg/L	01/11/12	8:45	4500CNE	KJR
Sulfide	< 0.1	mg/L	01/11/12	13:20	8131HACH	KJR
Sulfite	< 2	mg/L	01/05/12	17:30	377.1	JL
Total Residual Chlorine	< 0.05	mg/L	01/05/12	16:50	4500CIG	NZ
Total Phenols	< 0.3	mg/L	01/09/12	9:00	420.1	JCC

Total Phenols: The reporting limit for Total Phenols has been elevated due to matrix interferences.

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Solids Suspended	< 5	90 (90 %R)	93 (93 %R) (3 RPD)	mg/L	1/10/12	90 - 110	20	2540D
Solids Dissolved	< 5	970 (97 %R)	NA	mg/L	1/11/12	85 - 115		2540C
Fluoride	< 0.1	2.0 (101 %R)	2.0 (101 %R) (0 RPD)	mg/L	1/11/12	90 - 110	20	300.0
Sulfate	< 1	21 (106 %R)	21 (103 %R) (3 RPD)	mg/L	1/11/12	90 - 110	20	300.0
Chloride	< 1	26 (103 %R)	26 (103 %R) (0 RPD)	mg/L	1/10/12	90 - 110	20	4500CIE
Nitrate-N	< 0.05	5.3 (106 %R)	5.3 (106 %R) (0 RPD)	mg/L	1/6/12	90 - 110	20	353.2
Alkalinity Total (CaCO3)	< 1	10 (99 %R)	10 (100 %R) (1 RPD)	mg/L	1/11/12	85 - 115	20	2320B
Cyanide Total	< 0.02	0.27 (106 %R)	0.23 (91 %R) (15 RPD)	mg/L	1/11/12	85 - 115	20	4500CNE
Ammonia-N	< 0.05	2.0 (100 %R)	2.1 (105 %R) (5 RPD)	mg/L	1/10/12	90 - 110	20	4500NH3DN
Sulfide	< 0.1	0.4 (98 %R)	0.4 (90 %R) (9 RPD)	mg/L	1/11/12	80 - 120	20	8131HACH
Sulfite	< 2	NA	NA	mg/L	1/5/12			377.1
Total Residual Chlorine	< 0.05	0.88 (101 %R)	0.87 (100 %R) (1 RPD)	mg/L	1/5/12	80 - 120	20	4500CIG
BOD	< 6	430 (109 %R)	390 (97 %R) (12 RPD)	mg/L	1/6/12	84 - 115	20	5210B
COD	< 10	100 (101 %R)	100 (98 %R) (3 RPD)	mg/L	1/12/12	85 - 115	20	H8000
Total Phenols	< 0.05	0.28 (112 %R)	0.27 (106 %R) (6 RPD)	mg/L	1/9/12	85 - 115	20	420.1
pH		6.0 (101 %R)	6.05 (101 %R) (0 RPD)	SU	1/5/12	5.95 - 6.07	10	4500H+B

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Parameter Name	Duplicate Parent ID	Duplicate Parent	Duplicate	Units	Date of Analysis	RPD	Method
Solids Suspended	106692.03	180	160 (13 RPD)	mg/L	1/10/12	20	2540D
Solids Dissolved		NA	NA	mg/L	1/11/12		2540C
Fluoride		NA	NA	mg/L	1/11/12	20	300.0
Sulfate		NA	NA	mg/L	1/11/12	20	300.0
Chloride		NA	NA	mg/L	1/10/12	20	4500CIE
Nitrate-N		NA	NA	mg/L	1/6/12	20	353.2
Alkalinity Total (CaCO3)		NA	NA	mg/L	1/11/12	20	2320B
Cyanide Total		NA	NA	mg/L	1/11/12	20	4500CNE
Ammonia-N	106627.02	13	13 (2 RPD)	mg/L	1/10/12	20	4500NH3D
Sulfide		NA	NA	mg/L	1/11/12	20	8131HACH
Sulfite	106677.02	< 2	< 2 (RPD N/A)	mg/L	1/5/12	20	377.1
Total Residual Chlorine		NA	NA	mg/L	1/5/12	20	4500CIG
BOD	106657.02	410	400 (3 RPD)	mg/L	1/6/12	20	5210B
COD		NA	NA	mg/L	1/12/12	20	H8000
Total Phenols		NA	NA	mg/L	1/9/12	20	420.1
pH	106649.01	6.3	6.3 (0 RPD)	SU	1/5/12	10	4500H+B

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

QC REPORT

EAI ID#: 106677

Client: **Northeast Utilities**

Client Designation: **Merrimack Station**

Parameter Name	MS/MSD Parent ID	MS/MSD Parent	Matrix Spike	MSD	Units	Date of Analysis	Limits	RPD	Method
Solids Suspended		NA	NA	NA	mg/L	1/10/12		20	2540D
Solids Dissolved		NA	NA	NA	mg/L	1/11/12			2540C
Fluoride		NA	NA	NA	mg/L	1/11/12		20	300.0
Sulfate		NA	NA	NA	mg/L	1/11/12		20	300.0
Chloride	106632.02	11	22 (110 %R)	22 (109 %R) (1 RPD)	mg/L	1/10/12	80-120	20	4500CIE
Nitrate-N	106678.01	1.2	12 (110 %R)	12 (109 %R) (1 RPD)	mg/L	1/6/12	80-120	20	353.2
Alkalinity Total (CaCO3)	106607.01	29	48 (98 %R)	NA	mg/L	1/11/12	80-120	20	2320B
Cyanide Total	106677.02	0.02	0.25 (93 %R)	0.23 (86 %R) (8 RPD)	mg/L	1/11/12	75-125	20	4500CNE
Ammonia-N	106627.02	13	16 (115 %R)	15 (85 %R) (30 RPD)	mg/L	1/10/12	80-120	20	4500NH3
Sulfide		NA	NA	NA	mg/L	1/11/12		20	8131HAC
Sulfite		NA	NA	NA	mg/L	1/5/12			377.1
Total Residual Chlorine		NA	NA	NA	mg/L	1/5/12		20	4500CIG
BOD	106657.02	410	760 (82 %R)	NA	mg/L	1/6/12	75-125	20	5210B
COD	106677.01	130	220 (92 %R)	230 (99 %R) (7 RPD)	mg/L	1/12/12	80-120	20	H8000
Total Phenols	106677.02	< 0.3	0.4 (42 %R)	0.4 (42 %R) (133 RPD)	mg/L	1/9/12	80-120	20	420.1
pH		NA	NA	NA	SU	1/5/12		10	4500H+B

Total Phenols: The MS and MSD recoveries were below acceptance criteria even when the parent sample was diltuted indicating a matrix interference.

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

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414 Pontius Ave North
Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

11 January 2012

Jeff Gagne
Eastern Analytical, Inc
25 Chenell Drive
Concord, NH 03301
RE: Merrimack Station

Enclosed are the analytical results for samples received by Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Liz Siska

Liz Siska
Project Manager

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414 Pontius Ave North
Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

ANALYTICAL REPORT FOR SAMPLES

Laboratory: Frontier Global Sciences, Inc.

SDG:

Client: Eastern Analytical, Inc

Project: Merrimack Station

Sample ID	Lab ID	Matrix	Date Sampled	Date Received
Treat Tank Eff Composite	1201073-01	Water	05-Jan-12 10:00	06-Jan-12 09:50
Treat Tank Eff Grab	1201073-02	Water	05-Jan-12 08:00	06-Jan-12 09:50

Frontier Global Sciences, Inc.

Liz Siska

Liz Siska, Project Manager

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Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

CASE NARRATIVE

SAMPLE RECEIPT

Samples were received at Frontier Global Sciences (FGS) on January 6th, 2012. The samples were received intact, on-ice with temperatures measured at 3.4 degrees Celsius.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total metals in accordance with FGS-054/EPA 1638.

Samples were prepared and analyzed for total mercury in accordance with EPA Method 1631E.

ANALYTICAL AND QUALITY CONTROL ISSUES

There were no analytical difficulties experienced with analysis of these samples with the exceptions flagged in the report.

Frontier Global Sciences, Inc.

Liz Siska

Liz Siska, Project Manager

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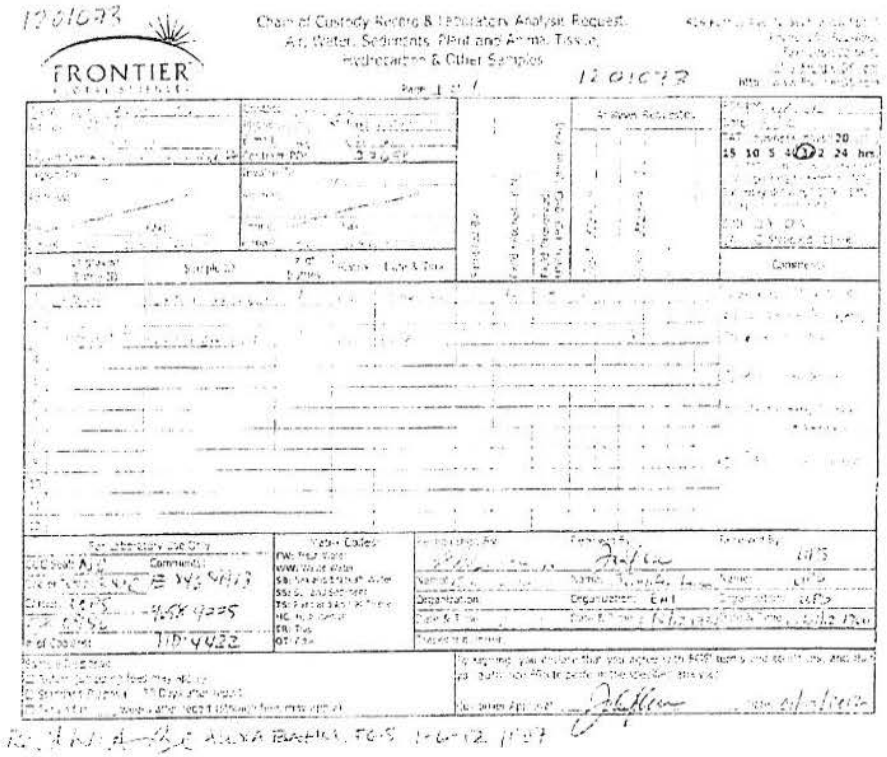
Fx: 206-622-6870

CHAIN OF CUSTODY FORMS



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Fx: 206-622-6870

ANALYTICAL RESULTS

Treat Tank Eff Composite

Matrix: Water **Laboratory ID:** 1201073-01

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Aluminum	**41.1**	2.2	20.0	µg/L	5	F201062	2A10002	01/09/12	FGS-054	
Antimony	**0.520**	0.023	0.100	µg/L	5	F201062	2A10002	01/09/12	FGS-054	
Barium	**300**	0.14	1.00	µg/L	5	F201062	2A10002	01/09/12	FGS-054	
Beryllium	**0.522**	0.114	0.300	µg/L	5	F201062	2A10002	01/09/12	FGS-054	
Cadmium	**0.207**	0.021	0.100	µg/L	5	F201062	2A10002	01/09/12	FGS-054	
Calcium	**5050000**	16200	200000	µg/L	5000	F201077	2A10015	01/10/12	FGS-054	
Chromium	ND	0.04	0.50	µg/L	5	F201062	2A10002	01/09/12	FGS-054	U
Copper	ND	0.05	0.50	µg/L	5	F201062	2A10002	01/09/12	FGS-054	U
Iron	ND	6.5	50.0	µg/L	5	F201062	2A10002	01/09/12	FGS-054	U
Lead	ND	0.020	0.200	µg/L	5	F201062	2A10002	01/09/12	FGS-054	U
Manganese	**293**	0.74	10.0	µg/L	100	F201062	2A10002	01/09/12	FGS-054	
Molybdenum	**140**	0.03	0.30	µg/L	5	F201062	2A10002	01/09/12	FGS-054	
Nickel	**8.03**	0.04	0.50	µg/L	5	F201062	2A10002	01/09/12	FGS-054	
Silver	ND	0.030	0.100	µg/L	5	F201062	2A10002	01/09/12	FGS-054	U
Sodium	**277000**	115	2000	µg/L	100	F201062	2A10002	01/09/12	FGS-054	
Thallium	**6.64**	0.006	0.025	µg/L	5	F201062	2A10002	01/09/12	FGS-054	QB-01
Zinc	ND	0.08	1.00	µg/L	5	F201062	2A10002	01/09/12	FGS-054	U

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Fx: 206-622-6870

ANALYTICAL RESULTS

Treat Tank Eff Grab

Matrix: Water **Laboratory ID:** 1201073-02

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Arsenic	**4.98**	1.02	3.00	µg/L	20	F201062	2A10015	01/10/12	FGS-054	
Mercury	**10.5**	0.34	2.02	ng/L	4	F201063	2A09010	01/09/12	EPA 1631E	FB-1631
Selenium	**74.0**	3.88	12.0	µg/L	20	F201062	2A10015	01/10/12	FGS-054	

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MATRIX DUPLICATES/TRIPLICATES

SOURCE: 1201073-02

Batch: F201063 **Sequence:** 2A09010

Preparation: BrCl Oxidation **Lab Number:** F201063-DUP1

Analyte	Sample Concentration ng/L	Duplicate Concentration ng/L	MRL	% RPD	RPD Limit	Method	Notes
Mercury	10.48	10.54	2.02	0.617	24	EPA 1631E	

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Seattle, WA 98109
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Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-01

Batch: F201062 **Sequence:** 2A10002

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201062-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	0.522	2.0200	2.676	107	75 - 135	FGS-054	
Aluminum	41.1	151.50	210.7	112	80 - 115	FGS-054	
Chromium	0.47	7.0700	8.59	115	85 - 115	FGS-054	
Iron	ND	505.00	563.6	112	75 - 125	FGS-054	
Nickel	8.03	4.0400	11.98	97.7	68 - 134	FGS-054	
Copper	0.29	4.0400	4.00	91.8	51 - 145	FGS-054	
Zinc	0.27	10.100	9.10	87.4	46 - 146	FGS-054	
Arsenic	5.32	15.150	22.17	111	85 - 115	FGS-054	
Selenium	71.73	30.300	100.6	95.3	59 - 149	FGS-054	
Molybdenum	140.3	2.0200	142.1	88.8	80 - 115	FGS-054	
Silver	ND	1.5150	1.216	80.3	74 - 119	FGS-054	
Cadmium	0.207	0.80800	1.076	108	84 - 113	FGS-054	
Antimony	0.520	0.80800	1.360	104	79 - 122	FGS-054	
Barium	300.0	10.100	305.0	49.8	80 - 120	FGS-054	QM-02
Thallium	6.645	0.40400	6.882	58.7	64 - 137	FGS-054	QB-01, QM-02
Lead	ND	1.5150	1.635	108	72 - 143	FGS-054	

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	2.0200	2.639	105	1.39	75 - 135	20	FGS-054	
Aluminum	151.50	213.8	114	1.50	80 - 115	20	FGS-054	
Chromium	7.0700	8.59	115	0.0611	85 - 115	20	FGS-054	
Iron	505.00	553.8	110	1.76	75 - 125	20	FGS-054	
Nickel	4.0400	12.20	103	1.83	68 - 134	20	FGS-054	
Copper	4.0400	3.95	90.7	1.15	51 - 145	20	FGS-054	
Zinc	10.100	8.87	85.2	2.51	46 - 146	20	FGS-054	
Arsenic	15.150	22.81	115	2.84	85 - 115	20	FGS-054	
Selenium	30.300	110.8	129	9.65	59 - 149	20	FGS-054	
Molybdenum	2.0200	143.5	159	0.993	80 - 115	20	FGS-054	QM-02
Silver	1.5150	1.226	81.0	0.852	74 - 119	20	FGS-054	
Cadmium	0.80800	0.956	92.7	11.8	84 - 113	20	FGS-054	

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Liz Siska

Liz Siska, Project Manager

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Ph: 206-622-6960
Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-01

Batch: F201062 **Sequence:** 2A10002

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201062-MS/MSD1

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Antimony	0.80800	1.373	106	0.924	79 - 122	20	FGS-054	
Barium	10.100	307.1	71.1	0.703	80 - 120	20	FGS-054	QM-02
Thallium	0.40400	6.918	67.6	0.520	64 - 137	20	FGS-054	QB-01
Lead	1.5150	1.580	104	3.44	72 - 143	20	FGS-054	

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Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-01RE1

Batch: F201062 **Sequence:** 2A10002

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201062-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Sodium	277400	505.00	264500	-2560	75 - 125	FGS-054	QM-02
Manganese	293.1	6.0600	287.1	-98.7	80 - 120	FGS-054	QM-02

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	505.00	270000	-1460	2.06	75 - 125	20	FGS-054	QM-02
Manganese	6.0600	289.7	-55.3	0.912	80 - 120	20	FGS-054	QM-02

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Liz Siska

Liz Siska, Project Manager

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414 Pontius Ave North
Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-01

Batch: F201062 **Sequence:** 2A10002

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201062-MS/MSD3

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	0.522	10.100	10.96	103	75 - 135	FGS-054	AS
Aluminum	41.1	2020.0	2166	105	80 - 115	FGS-054	AS
Chromium	0.47	202.00	230.0	114	85 - 115	FGS-054	AS
Iron	ND	1010.0	1103	109	75 - 125	FGS-054	AS
Nickel	8.03	252.50	255.1	97.8	68 - 134	FGS-054	AS
Copper	0.29	252.50	224.5	88.8	51 - 145	FGS-054	AS
Zinc	0.27	505.00	422.7	83.7	46 - 146	FGS-054	AS
Arsenic	5.32	202.00	235.0	114	85 - 115	FGS-054	AS
Selenium	71.73	202.00	287.2	107	59 - 149	FGS-054	AS
Molybdenum	140.3	101.00	244.7	103	80 - 115	FGS-054	AS
Silver	ND	10.100	8.224	81.4	74 - 119	FGS-054	AS
Cadmium	0.207	20.200	19.18	93.9	84 - 113	FGS-054	AS
Antimony	0.520	10.100	11.16	105	79 - 122	FGS-054	AS
Barium	300.0	404.00	775.3	118	80 - 120	FGS-054	AS
Thallium	6.645	10.100	17.46	107	64 - 137	FGS-054	AS, QB-01
Lead	ND	50.500	51.95	103	72 - 143	FGS-054	AS

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	10.100	11.25	106	2.66	75 - 135	20	FGS-054	AS
Aluminum	2020.0	2171	105	0.234	80 - 115	20	FGS-054	AS
Chromium	202.00	231.3	114	0.528	85 - 115	20	FGS-054	AS
Iron	1010.0	1112	110	0.802	75 - 125	20	FGS-054	AS
Nickel	252.50	255.9	98.2	0.346	68 - 134	20	FGS-054	AS
Copper	252.50	225.5	89.2	0.424	51 - 145	20	FGS-054	AS
Zinc	505.00	425.5	84.2	0.647	46 - 146	20	FGS-054	AS
Arsenic	202.00	236.5	114	0.629	85 - 115	20	FGS-054	AS
Selenium	202.00	287.0	107	0.0540	59 - 149	20	FGS-054	AS
Molybdenum	101.00	246.7	105	0.806	80 - 115	20	FGS-054	AS
Silver	10.100	8.290	82.1	0.798	74 - 119	20	FGS-054	AS
Cadmium	20.200	19.31	94.6	0.670	84 - 113	20	FGS-054	AS
Antimony	10.100	11.31	107	1.29	79 - 122	20	FGS-054	AS

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Liz Siska

Liz Siska, Project Manager

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Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-01

Batch: F201062 **Sequence:** 2A10002

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201062-MS/MSD3

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Barium	404.00	779.8	119	0.575	80 - 120	20	FGS-054	AS
Thallium	10.100	17.56	108	0.595	64 - 137	20	FGS-054	AS, QB-01
Lead	50.500	52.16	103	0.399	72 - 143	20	FGS-054	AS

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Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-01RE1

Batch: F201062 **Sequence:** 2A10002

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201062-MS/MSD4

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Sodium	277400	202000	474400	97.5	75 - 125	FGS-054	AS
Manganese	293.1	2020.0	2396	104	80 - 120	FGS-054	AS

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Sodium	202000	480300	100	1.25	75 - 125	20	FGS-054	AS
Manganese	2020.0	2405	105	0.346	80 - 120	20	FGS-054	AS

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Ph: 206-622-6960
Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-02

Batch: F201063 **Sequence:** 2A09010

Preparation: BrCl Oxidation **Lab Number:** F201063-MS/MSD1

Analyte	Sample Concentration (ng/L)	Spike Added (ng/L)	MS Concentration (ng/L)	MS % Recovery	Recovery Limits	Method	Notes
Mercury	10.48	20.400	31.36	102	71 - 125	EPA 1631E	

Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	20.400	27.08	81.4	14.7	71 - 125	24	EPA 1631E	

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Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1112278-02

Batch: F201063 **Sequence:** 2A09010

Preparation: BrCl Oxidation **Lab Number:** F201063-MS/MSD2

Analyte	Sample Concentration (ng/L)	Spike Added (ng/L)	MS Concentration (ng/L)	MS % Recovery	Recovery Limits	Method	Notes
Mercury	7.61	20.400	27.86	99.2	71 - 125	EPA 1631E	

Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	20.400	28.37	102	1.82	71 - 125	24	EPA 1631E	

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Liz Siska, Project Manager

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Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201029-01

Batch: F201063 **Sequence:** 2A09010

Preparation: BrCl Oxidation **Lab Number:** F201063-MS/MSD3

Analyte	Sample Concentration (ng/L)	Spike Added (ng/L)	MS Concentration (ng/L)	MS % Recovery	Recovery Limits	Method	Notes
Mercury	5.34	10.200	15.58	100	71 - 125	EPA 1631E	

Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	10.200	14.07	85.6	10.2	71 - 125	24	EPA 1631E	

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Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201030-02

Batch: F201063 **Sequence:** 2A09010

Preparation: BrCl Oxidation **Lab Number:** F201063-MS/MSD4

Analyte	Sample Concentration (ng/L)	Spike Added (ng/L)	MS Concentration (ng/L)	MS % Recovery	Recovery Limits	Method	Notes
Mercury	5.54	10.200	14.82	91.0	71 - 125	EPA 1631E	

Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	10.200	14.61	89.0	1.40	71 - 125	24	EPA 1631E	

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Liz Siska

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Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-01RE2

Batch: F201077 **Sequence:** 2A10015

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201077-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Calcium	5052000	1515.0	5067000	1010	70 - 130	FGS-054	QM-02

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Calcium	1515.0	5034000	-1190	0.660	70 - 130	20	FGS-054	QM-02

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Liz Siska, Project Manager

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Seattle, WA 98109
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Fx: 206-622-6870

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201073-01RE2

Batch: F201077 **Sequence:** 2A10015

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201077-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Calcium	5052000	10100000	15570000	104	70 - 130	FGS-054	

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Calcium	10100000	15550000	104	0.125	70 - 130	20	FGS-054	

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Seattle, WA 98109
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Fx: 206-622-6870

LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F201062

Sequence: 2A10002

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F201062-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Beryllium	2.0000	2.039	102	75 - 135	FGS-054	
Sodium	500.00	487	97.4	80 - 120	FGS-054	
Aluminum	150.00	152.4	102	85 - 115	FGS-054	
Calcium	1500.0	1550	103	80 - 120	FGS-054	
Chromium	7.0000	6.82	97.4	85 - 115	FGS-054	
Manganese	6.0000	6.03	101	85 - 115	FGS-054	
Iron	500.00	481.5	96.3	80 - 120	FGS-054	
Nickel	4.0000	4.06	102	68 - 134	FGS-054	
Copper	4.0000	4.15	104	51 - 145	FGS-054	
Zinc	10.000	10.16	102	46 - 146	FGS-054	
Arsenic	15.000	15.38	103	85 - 115	FGS-054	
Selenium	30.000	31.50	105	59 - 149	FGS-054	
Molybdenum	2.0000	1.97	98.3	85 - 115	FGS-054	
Silver	1.5000	1.569	105	74 - 119	FGS-054	
Cadmium	0.80000	0.850	106	84 - 113	FGS-054	
Antimony	0.80000	0.866	108	79 - 122	FGS-054	
Barium	10.000	10.41	104	85 - 115	FGS-054	
Thallium	0.40000	0.433	108	64 - 134	FGS-054	
Lead	1.5000	1.611	107	72 - 143	FGS-054	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	2.0000	2.078	104	1.91	75 - 135	20	FGS-054	
Sodium	500.00	496	99.2	1.88	80 - 120	20	FGS-054	
Aluminum	150.00	154.4	103	1.28	85 - 115	20	FGS-054	
Calcium	1500.0	1583	106	2.10	80 - 120	20	FGS-054	
Chromium	7.0000	6.95	99.3	1.90	85 - 115	20	FGS-054	
Manganese	6.0000	6.15	103	1.97	85 - 115	20	FGS-054	
Iron	500.00	494.6	98.9	2.69	80 - 120	20	FGS-054	

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Liz Siska

Liz Siska, Project Manager

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414 Pontius Ave North
Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F201062

Sequence: 2A10002

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F201062-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Nickel	4.0000	4.15	104	2.20	68 - 134	20	FGS-054	
Copper	4.0000	4.28	107	3.01	51 - 145	20	FGS-054	
Zinc	10.000	10.52	105	3.48	46 - 146	20	FGS-054	
Arsenic	15.000	15.69	105	2.00	85 - 115	20	FGS-054	
Selenium	30.000	32.57	109	3.35	59 - 149	20	FGS-054	
Molybdenum	2.0000	1.93	96.6	1.72	85 - 115	20	FGS-054	
Silver	1.5000	1.557	104	0.768	74 - 119	20	FGS-054	
Cadmium	0.80000	0.868	108	2.04	84 - 113	20	FGS-054	
Antimony	0.80000	0.872	109	0.661	79 - 122	20	FGS-054	
Barium	10.000	10.54	105	1.25	85 - 115	20	FGS-054	
Thallium	0.40000	0.443	111	2.27	64 - 134	20	FGS-054	
Lead	1.5000	1.641	109	1.85	72 - 143	20	FGS-054	

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414 Pontius Ave North
Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F201063

Preparation: BrCl Oxidation

Sequence: 2A09010

Lab Number: F201063-BS/BSD1

LCS Source: Nist 1641d

Analyte	Spike Added (ng/L)	LCS Concentration (ng/L)	LCS % Recovery	Recovery Limits	Method	Notes
Mercury	15.679	15.50	98.8	80 - 120	EPA 1631E	

Analyte	Spike Added (ng/L)	LCSD Concentration (ng/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	15.679	15.95	102	2.89	80 - 120	24	EPA 1631E	

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Fx: 206-622-6870

LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F201077 **Sequence:** 2A10015

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F201077-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Calcium	1500.0	1517	101	80 - 120	FGS-054	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Calcium	1500.0	1571	105	3.47	80 - 120	20	FGS-054	

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Fx: 206-622-6870

PREPARATION BLANKS

Instrument: Hg-17

Sequence: 2A09010

Preparation: BrCl Oxidation

Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F201063-BLK1	Mercury	-0.009	0.50	ng/L	F201063	EPA 1631E	U
F201063-BLK2	Mercury	-0.006	0.50	ng/L	F201063	EPA 1631E	U
F201063-BLK3	Mercury	-0.02	0.50	ng/L	F201063	EPA 1631E	U
F201063-BLK4	Mercury	0.03	0.50	ng/L	F201063	EPA 1631E	U, QB-04
F201063-BLK5	Mercury	0.11	0.52	ng/L	F201063	EPA 1631E	U, QB-06

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414 Pontius Ave North
Seattle, WA 98109
Ph: 206-622-6960
Fx: 206-622-6870

PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2A10002

Preparation: Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F201062-BLK1	Beryllium	0.0002	0.060	µg/L	F201062	FGS-054	U
F201062-BLK1	Sodium	0.09	20	µg/L	F201062	FGS-054	U
F201062-BLK1	Aluminum	0.09	4.0	µg/L	F201062	FGS-054	U
F201062-BLK1	Calcium	0.5	40	µg/L	F201062	FGS-054	U
F201062-BLK1	Chromium	0.03	0.10	µg/L	F201062	FGS-054	U
F201062-BLK1	Manganese	-0.002	0.10	µg/L	F201062	FGS-054	U
F201062-BLK1	Iron	-0.06	10.0	µg/L	F201062	FGS-054	U
F201062-BLK1	Nickel	0.004	0.10	µg/L	F201062	FGS-054	U
F201062-BLK1	Copper	-0.0003	0.10	µg/L	F201062	FGS-054	U
F201062-BLK1	Zinc	0.04	0.20	µg/L	F201062	FGS-054	U
F201062-BLK1	Arsenic	-0.07	0.15	µg/L	F201062	FGS-054	U
F201062-BLK1	Selenium	0.003	0.60	µg/L	F201062	FGS-054	U
F201062-BLK1	Molybdenum	0.005	0.06	µg/L	F201062	FGS-054	U
F201062-BLK1	Silver	0.0002	0.020	µg/L	F201062	FGS-054	U
F201062-BLK1	Cadmium	-0.00002	0.020	µg/L	F201062	FGS-054	U
F201062-BLK1	Antimony	-0.0003	0.020	µg/L	F201062	FGS-054	U
F201062-BLK1	Barium	-0.04	0.20	µg/L	F201062	FGS-054	U
F201062-BLK1	Thallium	0.007	0.005	µg/L	F201062	FGS-054	QB-10
F201062-BLK1	Lead	0.003	0.040	µg/L	F201062	FGS-054	U

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2A10015

Preparation: Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MRL	Units	Batch	Method	Notes
F201077-BLK1	Calcium	0.2	40	µg/L	F201077	FGS-054	U

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Notes and Definitions

U	Analyte included in the analysis, but not detected
QM-02	The MS and/or MSD recoveries outside acceptance limits, due to spike concentration less than 1 times the sample concentration. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QB-10	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. Only report sample results greater than 10 times the contamination value (QB-01), or samples less than the MRL (QB-02).
QB-06	The blank was preserved to 5% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-04	The blank was preserved to 2% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-01	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the blank concentration(s) are less than 10% of the sample result.
FB-1631	Required equipment/field/filter blank not submitted by the client. The sample has been analyzed according to 1631E, but does not meet 1631E criteria
AS	This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
DET	Analyte Detected
MDL	Minimum Detection Limit
MRL	Minimum Reporting Limit
ND	Analyte Not Detected at or above the reporting limit
wet	Sample results reported on a wet weight basis
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
RSD	Relative Standard Deviation

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Liz Siska, Project Manager

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

106677

44

SAMPLE I.D.	SAMPLING DATE/TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE/TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 / 524.2 BTEX / 524.2 MTBE ONLY	VOC: 8260B (624) VTICS / 1, 4 DIOXANE / EDB / DBCP	VOC: 8021B BTEX HALOS	VOC: 8015B GRO MEGRO MAVPH	SVOC: 8270D (625) SVTICS / (ABN) A BN PAH	SVOC: TPH8100 L1 L2	SVOC: 8015B DRO MEDRO MAEPH	SVOC: PEST 608 (PCB 608) / PEST 8081A PCB 8082	SVOC: OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 ABN METALS / VOC PEST HERB	METALS: DISSOLVED METALS (LIST BELOW)	METALS: TOTAL METALS (LIST BELOW)	INORGANICS: TS (TSS) SPEC. CON.	INORGANICS: BR (CL) (F) (SO4) / NO3 (NO2) NO2NO3	INORGANICS: (BOD) CBOD (T. ALK)	INORGANICS: TKN (NH3) T. PHOS. O. PHOS.	INORGANICS: (pH) T. RES. CHLORINE	INORGANICS: (COD) PHENOLS TOC DOC	INORGANICS: (TOTAL CYANIDE) (TOTAL SULFIDE)	INORGANICS: REACTIVE CYANIDE REACTIVE SULFIDE / FLASHPOINT IGNITABILITY	MICRO: TOTAL COLIFORM E. COLI / FECAL COLIFORM	MICRO: ENTEROCOCCI / HETEROTROPHIC PLATE COUNT	OTHER: TRC, Sulfite	OTHER: Total Phenols	OTHER	# OF CONTAINERS	NOTES MeOH VIAL #
Treat Tank Eff Composite	1/4/12 10:00 to 1/5/12 10:00	WW	C												X	X	X	X	X	X	X								4	(1) (4)
Treat Tank Eff Grab	1/5/12 08:00	WW	G		X			X			X	X										X				X	X		16	
Treat Tank Eff Grab	1/5/12 08:00	WW	G												X														3	(2) (3) (4)

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: Arthur Auclair

COMPANY: Northeast Utilities

ADDRESS: 97 River Rd

CITY: Boca STATE: NH ZIP: 03304

PHONE: 224-4051 EXT.:

FAX:

E-MAIL: auclaaa@nu.com

SITE NAME: Merrimack Station

PROJECT #: 3944

STATE: NH MA ME VT OTHER:

REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:

QUOTE #: PO #: 02259252

DATE NEEDED: 1/12/12

QA/QC REPORTING LEVEL: A (B) C

OR

PRESUMPTIVE CERTAINTY

REPORTING OPTIONS: PRELIMS: YES OR NO; IF YES: FAX OR PDF

ELECTRONIC OPTIONS: NO FAX E-MAIL PDF EQUIS

TEMP. 4.7 °C

ICE? (YES) NO

SAMPLER(S): JG, JB

RELINQUISHED BY: [signature] DATE: 1/5/12 TIME: 1330 RECEIVED BY: [signature]

RELINQUISHED BY: DATE: TIME: RECEIVED BY:

RELINQUISHED BY: DATE: TIME: RECEIVED BY:

METALS: 8 RCRA 13 PP FE, MN PB, CU

OTHER METALS:

DISSOLVED METALS FIELD FILTERED? YES NO

NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

(1) Metals include Al, Sb, Ba, Be, Cd, Ca, Cr, Cu, Fe, Pb, Mn, Mo, Ni, Ag, Na, Tl, Zn

(2) Sample collected using "clean techniques"

(3) As, Se, Hg

(4) All metals to FGS using collision cell.

SITE HISTORY: (5) Send copy of results to GZA

SUSPECTED CONTAMINATION:

FIELD READINGS:

eastern analytical, inc. professional laboratory services 25 CHENELL DRIVE | CONCORD, NH 03301 | TEL: 603.228.0525 | 1.800.287.0525 | FAX: 603.228.4591 | E-MAIL: CUSTOMER_SERVICE@EAILABS.COM | WWW.EAILABS.COM

(WHITE: ORIGINAL GREEN: PROJECT MANAGER)