

VIA EMAIL

February 9, 2012  
File No. 04.0029307.00



Mr. Bruce Kudrick  
Superintendent, Hooksett Sewer Commission  
Town of Hooksett  
1 Egawes Drive  
Hooksett, New Hampshire 03106

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

Re: Wastewater Discharge Monitoring Report  
Treated Wastewater  
Merrimack Station  
Public Service of New Hampshire  
Bow, New Hampshire

Dear Bruce:

On behalf of Public Service of New Hampshire (PSNH), GZA GeoEnvironmental, Inc. is pleased to submit the attached Wastewater Discharge Monitoring Report for sampling conducted on **January 26, 2012**, intended to satisfy the second of three initial sampling requirements as established in Special Condition 11 of PSNH's Waste Disposal Agreement No. WDA-001 (WDA).

The analytical results presented in the attached **Analytical Data Report** are summarized in the attached **Table 1**.

**ANALYTICAL DISCUSSION**

Flue Gas Desulfurization (FGD) wastewater requires specialized analytical techniques to overcome matrix interference for certain analysis of trace metals. To assist you in evaluating this issue further, we offer an excerpt below from the United States Environmental Protection Agency (EPA) web site and a link to their draft Standard Operating Procedure (SOP) for trace metals analysis of FGD wastewater 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 an 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. For further information, see:

Standard Operating Procedure: Inductively Coupled Plasma/Mass Spectrometry for Trace Element Analysis in Flue Gas Desulfurization Wastewaters (30 pp, 174K), [http://water.epa.gov/scitech/wastetech/guide/upload/steam\\_draft\\_sop.pdf](http://water.epa.gov/scitech/wastetech/guide/upload/steam_draft_sop.pdf), EPA May 2011.

Considering that specialized analytical techniques are necessary to overcome matrix interference for certain analysis of trace metals in FGD wastewater, we recommend any analysis on FGD wastewater be conducted in accordance with the EPA draft SOP for trace metals analysis of FGD wastewater.

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.

A handwritten signature in black ink that reads 'Ronald A. Breton'.

Ronald A. Breton, P.E.  
Principal

RAB:mm

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Attachments: Wastewater Discharge Monitoring Report  
Analytical Data report

## WASTEWATER DISCHARGE MONITORING REPORT

**WASTEWATER DISCHARGE MONITORING REPORT  
HOOKSETT WASTEWATER TREATMENT PLANT**

Public Service of New Hampshire - Merrimack Station  
Waste Disposal Agreement No. WDA-001  
Issued October 1, 2011  
Expires September 30, 2012

Permitted Flow 70,000 gallons per day

**FLOW DATA**

|                        |                                    |
|------------------------|------------------------------------|
| Daily Flow Rate        | 10,672 gallons (average)           |
| Monitoring Period Flow | 32,017 gallons (1/24/12 - 1/26/12) |

## FACILITY INFORMATION

Company Name Public Service Company of New Hampshire - Merrimack Station  
Company Owner Public Service Company of New Hampshire  
Facility Address 97 River Road  
Facility Contact Harold Keyes  
Telephone (603) 224-4081

## MONITORING REPORT

Submittal Date 2/9/2012  
Monitoring Point End of treatment process  
Reporting Period First Month

## SAMPLE ANALYSIS

Certified Analytical Laboratory Eastern Analytical Inc. (EAI) Certification Number 1012  
Authorized Representative Lorraine Olashaw  
Analytical Subcontractor Frontier Global Sciences Certification Number E87575

## SAMPLE COLLECTION

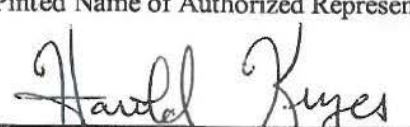
Sampler Jeff Gagne (EAI)  
Sample Type Grab  
Sample Date 1/26/2012 Sample Time 10:00 AM  
pH 7.6

## CATEGORICAL PRETREATMENT STANDARDS

40 CFR 423.16: Steam Electric Power Generating Category  
NOTE: There are no numerical pretreatment standards for this source

## 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  
  
Signature of Authorized Representative

Station Manager  
Title  
2/9/2012  
Date

**SUMMARY ANALYTICAL DATA**  
**Treated FGD Wastewater**  
Public Service Company of New Hampshire  
Merrimack Station  
Bow, New Hampshire

| PARAMETER          | RESULTS<br>(mg/L)<br>01/26/2012<br>EAI/Frontier |
|--------------------|-------------------------------------------------|
| Aluminum           | < 0.080                                         |
| Ammonia            | 1.2                                             |
| Antimony           | 0.000758                                        |
| Arsenic            | 0.00956                                         |
| Barium             | 0.208                                           |
| Beryllium          | < 0.00120                                       |
| BOD                | < 6                                             |
| Cadmium            | 0.000587                                        |
| Chromium (T)       | < 0.00200                                       |
| COD                | 180                                             |
| Copper             | 0.00261                                         |
| Cyanide (T)        | 0.01                                            |
| Fluoride           | 6.2                                             |
| Iron               | < 0.200                                         |
| Lead               | < 0.000800                                      |
| Manganese          | 0.349                                           |
| Mercury            | 0.0000122                                       |
| Molybdenum         | 0.373                                           |
| Nitrate            | 68                                              |
| Nickel             | 0.00776                                         |
| O&G                | < 5                                             |
| pH                 | 7.6                                             |
| Selenium           | 0.104                                           |
| Silver             | < 0.000400                                      |
| Thallium           | 0.00565                                         |
| TTO                | ND (1)                                          |
| Zinc               | < 0.00400                                       |
| VOC EPA 624        | (2)                                             |
| Semi VOCs 625      | ND (3)                                          |
| Phenolic Compounds | < 0.5                                           |
| PCBs               | ND (4)                                          |

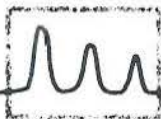
**Note:**

1. No TTO compounds were detected above 0.01 mg/L.
2. One compound was detected above its reporting limit by Method 624: Toluene at 2 µg/L.
3. No individual semi VOC was detected by Method 625 above its reporting limit.
4. No individual PCB compound was detected by Method 608 at concentrations greater than 0.3 µg/L.

GZA GeoEnvironmental, Inc.



ANALYTICAL DATA REPORT



Paul Pepler  
GZA GeoEnvironmental, Inc. (NH)  
380 Harvey Road  
Manchester, NH 03103



Subject: Laboratory Report

Eastern Analytical, Inc. ID: 107170  
Client Identification: Wastewater Analysis - **Weekly**  
Date Received: 1/26/2012

Dear Mr. Pepler:

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](http://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

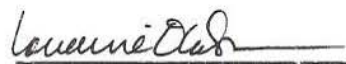
Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

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.

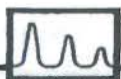
We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

  
Lorraine Olshaw, Lab Director

2-8-12  
Date

35  
# of pages (excluding cover letter)



## SAMPLE CONDITIONS PAGE

EAI ID#: 107170

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: Wastewater Analysis - *Weekly*

Temperature upon receipt (°C): 4.5

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

| Lab ID    | Sample ID            | Date     | Date    | Sample  | % Dry  | Exceptions/Comments (other than thermal preservation) |
|-----------|----------------------|----------|---------|---------|--------|-------------------------------------------------------|
|           |                      | Received | Sampled | Matrix  | Weight |                                                       |
| 107170.01 | Effluent Field Blank | 1/26/12  | 1/26/12 | aqueous |        | Adheres to Sample Acceptance Policy                   |
| 107170.02 | Treat Tank Effluent  | 1/26/12  | 1/26/12 | 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#: 107170

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: Wastewater Analysis - *Weekly*

Sample ID: Treat Tank Effluent

Lab Sample ID: 107170.02

Matrix: aqueous

Date Sampled: 1/26/12

Date Received: 1/26/12

Units: ug/l

Date of Analysis: 1/27/12

Analyst: KJP

Method: 624

Dilution Factor: 1

Chloromethane &lt; 5

Vinyl chloride &lt; 2

Bromomethane &lt; 2

Chloroethane &lt; 5

Trichlorofluoromethane &lt; 5

Acrolein &lt; 50

Acetone &lt; 50

1,1-Dichloroethene &lt; 1

Methylene chloride &lt; 5

Carbon disulfide &lt; 5

Acrylonitrile &lt; 50

Methyl-t-butyl ether(MTBE) &lt; 10

trans-1,2-Dichloroethene &lt; 2

Vinyl acetate &lt; 10

1,1-Dichloroethane &lt; 2

cis-1,2-Dichloroethene &lt; 2

2-Butanone(MEK) &lt; 10

Chloroform &lt; 2

1,1,1-Trichloroethane &lt; 2

Carbon tetrachloride &lt; 2

Benzene &lt; 1

1,2-Dichloroethane &lt; 2

Trichloroethene &lt; 2

1,2-Dichloropropane &lt; 2

Bromodichloromethane &lt; 2

2-Chloroethylvinylether &lt; 2

4-Methyl-2-pentanone(MIBK) &lt; 10

cis-1,3-Dichloropropene &lt; 2

Toluene 2

trans-1,3-Dichloropropene &lt; 2

1,1,2-Trichloroethane &lt; 2

2-Hexanone &lt; 10

Tetrachloroethene &lt; 2

Dibromochloromethane &lt; 2

Chlorobenzene &lt; 2

Ethylbenzene &lt; 1

mp-Xylene &lt; 1

o-Xylene &lt; 1

Styrene &lt; 1

Bromoform &lt; 2

1,1,2,2-Tetrachloroethane &lt; 2

1,3-Dichlorobenzene &lt; 1

1,4-Dichlorobenzene &lt; 1

1,2-Dichlorobenzene &lt; 1

4-Bromofluorobenzene (surr) 93 %R

1,2-Dichlorobenzene-d4 (surr) 106 %R

Toluene-d8 (surr) 99 %R



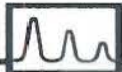
## QC REPORT

EAI ID#: 107170

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: Wastewater Analysis - Weekly

| Parameter Name              | Blank | LCS           | LCSD                    | Analysis Date | Units | Limits   | RPD | Method |
|-----------------------------|-------|---------------|-------------------------|---------------|-------|----------|-----|--------|
| Chloromethane               | < 5   | 22 (110 %R)   | 22 (108 %R) (2 RPD)     | 1/27/2012     | ug/l  | 0 - 273  | 20  | 624    |
| Vinyl chloride              | < 2   | 20 (99 %R)    | 19 (94 %R) (5 RPD)      | 1/27/2012     | ug/l  | 0 - 251  | 20  | 624    |
| Bromomethane                | < 2   | 21 (106 %R)   | 21 (103 %R) (3 RPD)     | 1/27/2012     | ug/l  | 0 - 242  | 20  | 624    |
| Chloroethane                | < 5   | 26 (129 %R)   | 25 (123 %R) (5 RPD)     | 1/27/2012     | ug/l  | 14 - 230 | 20  | 624    |
| Trichlorofluoromethane      | < 5   | 25 (124 %R)   | 23 (116 %R) (7 RPD)     | 1/27/2012     | ug/l  | 17 - 181 | 20  | 624    |
| Acrolein                    | < 50  | < 50 (%R N/A) | < 50 (%R N/A) (RPD N/A) | 1/27/2012     | ug/l  |          |     | 624    |
| Acetone                     | < 50  | < 50 (100 %R) | < 50 (97 %R) (3 RPD)    | 1/27/2012     | ug/l  |          |     | 624    |
| 1,1-Dichloroethene          | < 1   | 24 (122 %R)   | 23 (115 %R) (6 RPD)     | 1/27/2012     | ug/l  | 0 - 234  | 20  | 624    |
| Methylene chloride          | < 5   | 26 (129 %R)   | 25 (126 %R) (2 RPD)     | 1/27/2012     | ug/l  | 0 - 221  | 20  | 624    |
| Carbon disulfide            | < 5   | 22 (%R)       | 22 (%R) (RPD)           | 1/27/2012     | ug/l  |          |     | 624    |
| Acrylonitrile               | < 50  | < 50 (%R)     | < 50 (%R) (RPD)         | 1/27/2012     | ug/l  |          |     | 624    |
| Methyl-t-butyl ether(MTBE)  | < 10  | 20 (%R)       | 20 (%R) (RPD)           | 1/27/2012     | ug/l  |          |     | 624    |
| trans-1,2-Dichloroethene    | < 2   | 25 (124 %R)   | 24 (121 %R) (2 RPD)     | 1/27/2012     | ug/l  | 54 - 156 | 20  | 624    |
| Vinyl acetate               | < 10  | 30 (%R)       | 30 (%R) (RPD)           | 1/27/2012     | ug/l  |          |     | 624    |
| 1,1-Dichloroethane          | < 2   | 24 (118 %R)   | 23 (113 %R) (4 RPD)     | 1/27/2012     | ug/l  | 59 - 155 | 20  | 624    |
| cis-1,2-Dichloroethene      | < 2   | 22 (%R)       | 21 (%R) (RPD)           | 1/27/2012     | ug/l  |          |     | 624    |
| 2-Butanone(MEK)             | < 10  | 20 (%R)       | 20 (%R) (RPD)           | 1/27/2012     | ug/l  |          |     | 624    |
| Chloroform                  | < 2   | 22 (109 %R)   | 21 (106 %R) (3 RPD)     | 1/27/2012     | ug/l  | 51 - 138 | 20  | 624    |
| 1,1,1-Trichloroethane       | < 2   | 23 (115 %R)   | 22 (110 %R) (4 RPD)     | 1/27/2012     | ug/l  | 52 - 162 | 20  | 624    |
| Carbon tetrachloride        | < 2   | 26 (132 %R)   | 26 (129 %R) (2 RPD)     | 1/27/2012     | ug/l  | 70 - 140 | 20  | 624    |
| Benzene                     | < 1   | 22 (110 %R)   | 21 (107 %R) (3 RPD)     | 1/27/2012     | ug/l  | 37 - 151 | 20  | 624    |
| 1,2-Dichloroethane          | < 2   | 21 (103 %R)   | 20 (99 %R) (4 RPD)      | 1/27/2012     | ug/l  | 49 - 155 | 20  | 624    |
| Trichloroethene             | < 2   | 21 (105 %R)   | 20 (101 %R) (4 RPD)     | 1/27/2012     | ug/l  | 71 - 157 | 20  | 624    |
| 1,2-Dichloropropane         | < 2   | 21 (105 %R)   | 21 (103 %R) (2 RPD)     | 1/27/2012     | ug/l  | 0 - 210  | 20  | 624    |
| Bromodichloromethane        | < 2   | 21 (104 %R)   | 20 (101 %R) (3 RPD)     | 1/27/2012     | ug/l  | 35 - 155 | 20  | 624    |
| 2-Chloroethylvinylether     | < 2   | < 2 (%R N/A)  | < 2 (%R N/A) (RPD N/A)  | 1/27/2012     | ug/l  | 0 - 305  | 20  | 624    |
| 4-Methyl-2-pentanone(MIBK)  | < 10  | 20 (%R)       | 20 (%R) (RPD)           | 1/27/2012     | ug/l  |          |     | 624    |
| cis-1,3-Dichloropropene     | < 2   | 20 (102 %R)   | 20 (102 %R) (0 RPD)     | 1/27/2012     | ug/l  | 0 - 227  | 20  | 624    |
| Toluene                     | < 1   | 22 (109 %R)   | 21 (106 %R) (3 RPD)     | 1/27/2012     | ug/l  | 47 - 150 | 20  | 624    |
| trans-1,3-Dichloropropene   | < 2   | 21 (103 %R)   | 20 (101 %R) (2 RPD)     | 1/27/2012     | ug/l  | 17 - 183 | 20  | 624    |
| 1,1,2-Trichloroethane       | < 2   | 23 (113 %R)   | 22 (109 %R) (4 RPD)     | 1/27/2012     | ug/l  | 52 - 150 | 20  | 624    |
| 2-Hexanone                  | < 10  | 20 (%R)       | 20 (%R) (RPD)           | 1/27/2012     | ug/l  |          |     | 624    |
| Tetrachloroethene           | < 2   | 24 (120 %R)   | 23 (116 %R) (3 RPD)     | 1/27/2012     | ug/l  | 64 - 148 | 20  | 624    |
| Dibromochloromethane        | < 2   | 24 (118 %R)   | 23 (115 %R) (3 RPD)     | 1/27/2012     | ug/l  | 53 - 149 | 20  | 624    |
| Chlorobenzene               | < 2   | 22 (111 %R)   | 22 (108 %R) (3 RPD)     | 1/27/2012     | ug/l  | 37 - 160 | 20  | 624    |
| Ethylbenzene                | < 1   | 23 (113 %R)   | 22 (110 %R) (3 RPD)     | 1/27/2012     | ug/l  | 37 - 162 | 20  | 624    |
| mp-Xylene                   | < 1   | 47 (117 %R)   | 45 (112 %R) (4 RPD)     | 1/27/2012     | ug/l  | 70 - 130 | 20  | 624    |
| o-Xylene                    | < 1   | 23 (115 %R)   | 22 (109 %R) (5 RPD)     | 1/27/2012     | ug/l  | 70 - 130 | 20  | 624    |
| Styrene                     | < 1   | 23 (%R)       | 22 (%R) (RPD)           | 1/27/2012     | ug/l  |          |     | 624    |
| Bromoform                   | < 2   | 25 (125 %R)   | 25 (123 %R) (2 RPD)     | 1/27/2012     | ug/l  | 45 - 169 | 20  | 624    |
| 1,1,2,2-Tetrachloroethane   | < 2   | 20 (101 %R)   | 20 (100 %R) (1 RPD)     | 1/27/2012     | ug/l  | 46 - 157 | 20  | 624    |
| 1,3-Dichlorobenzene         | < 1   | 22 (110 %R)   | 21 (106 %R) (4 RPD)     | 1/27/2012     | ug/l  | 59 - 156 | 20  | 624    |
| 1,4-Dichlorobenzene         | < 1   | 22 (108 %R)   | 21 (107 %R) (1 RPD)     | 1/27/2012     | ug/l  | 18 - 190 | 20  | 624    |
| 1,2-Dichlorobenzene         | < 1   | 21 (105 %R)   | 21 (104 %R) (1 RPD)     | 1/27/2012     | ug/l  | 18 - 190 | 20  | 624    |
| 4-Bromofluorobenzene (surr) | 93 %R | 99 %R         | 102 %R                  | 1/27/2012     | % Rec | 70 - 130 |     | 624    |



## QC REPORT

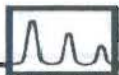
EAI ID#: 107170

Client: **GZA GeoEnvironmental, Inc. (NH)**

Client Designation: Wastewater Analysis - *Weekly*

| Parameter Name                | Blank  | LCS    | LCSD   | Analysis Date | Units | Limits   | RPD | Method |
|-------------------------------|--------|--------|--------|---------------|-------|----------|-----|--------|
| 1,2-Dichlorobenzene-d4 (surr) | 103 %R | 99 %R  | 99 %R  | 1/27/2012     | % Rec | 70 - 130 |     | 624    |
| Toluene-d8 (surr)             | 99 %R  | 101 %R | 100 %R | 1/27/2012     | % 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

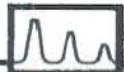
EAI ID#: 107170

Client: **GZA GeoEnvironmental, Inc. (NH)**  
Client Designation: Wastewater Analysis - **Weekly**

Sample ID: Treat Tank Effluent

Lab Sample ID: 107170.02  
Matrix: aqueous  
Date Sampled: 1/26/12  
Date Received: 1/26/12  
Units: ug/l  
Date of Extraction/Preparation: 1/27/12  
Date of Analysis: 1/30/12  
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#: 107170

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: Wastewater Analysis - *Weekly*

Sample ID: Treat Tank Effluent

Lab Sample ID: 107170.02

Matrix: aqueous

Date Sampled: 1/26/12

Date Received: 1/26/12

Units: ug/l

Date of Extraction/Preparation 1/27/12

Date of Analysis: 1/30/12

Analyst: JMR

Method: 625mod

Dilution Factor: 1

Carbazole &lt; 1

Dimethylphthalate &lt; 1

Diethylphthalate &lt; 1

Di-n-butylphthalate &lt; 5

Butylbenzylphthalate &lt; 1

bis(2-Ethylhexyl)phthalate &lt; 5

Di-n-octylphthalate &lt; 1

Dibenzofuran &lt; 1

Naphthalene &lt; 1

2-Methylnaphthalene &lt; 1

Acenaphthylene &lt; 1

Acenaphthene &lt; 1

Fluorene &lt; 1

Phenanthrene &lt; 1

Anthracene &lt; 1

Fluoranthene &lt; 1

Pyrene &lt; 1

Benzo[a]anthracene &lt; 1

Chrysene &lt; 1

Benzo[b]fluoranthene &lt; 1

Benzo[k]fluoranthene &lt; 1

Benzo[a]pyrene &lt; 1

Indeno[1,2,3-cd]pyrene &lt; 1

Dibenz[a,h]anthracene &lt; 1

Benzo[g,h,i]perylene &lt; 1

2-Fluorophenol (surr) 40 %R

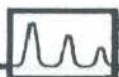
Phenol-d6 (surr) 29 %R

2,4,6-Tribromophenol (surr) 79 %R

Nitrobenzene-D5 (surr) 81 %R

2-Fluorobiphenyl (surr) 81 %R

p-Terphenyl-D14 (surr) 92 %R



## QC REPORT

EAI ID#: 107170

Client: GZA GeoEnvironmental, Inc. (NH)

Batch ID: 734529-39483/A012712ABN1

Client Designation: Wastewater Analysis - Weekly

| Parameter Name              | Blank | LCS          | LCSD                  | Analysis Date | Units | Limits   | RPD | Method |
|-----------------------------|-------|--------------|-----------------------|---------------|-------|----------|-----|--------|
| Phenol                      | < 1   | 15 (30 %R)   | 15 (30 %R) (0 RPD)    | 1/30/2012     | ug/l  | 15 - 130 | 20  | 625mod |
| 2-Chlorophenol              | < 1   | 30 (61 %R)   | 31 (61 %R) (0 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 2,4-Dichlorophenol          | < 1   | 36 (72 %R)   | 36 (73 %R) (1 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 2,4,5-Trichlorophenol       | < 1   | 21 (85 %R)   | 21 (84 %R) (1 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 2,4,6-Trichlorophenol       | < 1   | 38 (76 %R)   | 37 (75 %R) (1 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| Pentachlorophenol           | < 5   | 49 (97 %R)   | 46 (93 %R) (4 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 2-Nitrophenol               | < 1   | 36 (73 %R)   | 36 (72 %R) (1 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 4-Nitrophenol               | < 5   | 16 (33 %R)   | 18 (36 %R) (9 RPD)    | 1/30/2012     | ug/l  | 15 - 130 | 20  | 625mod |
| 2,4-Dinitrophenol           | < 5   | 38 (76 %R)   | 41 (83 %R) (9 RPD)    | 1/30/2012     | ug/l  | 15 - 130 | 20  | 625mod |
| 2-Methylphenol              | < 1   | 16 (64 %R)   | 16 (65 %R) (2 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 3/4-Methylphenol            | < 1   | 14 (55 %R)   | 14 (56 %R) (2 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 2,4-Dimethylphenol          | < 1   | 34 (67 %R)   | 33 (67 %R) (0 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 4-Chloro-3-methylphenol     | < 1   | 39 (77 %R)   | 40 (79 %R) (3 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| 4,6-Dinitro-2-methylphenol  | < 5   | 44 (89 %R)   | 48 (95 %R) (7 RPD)    | 1/30/2012     | ug/l  | 30 - 130 | 20  | 625mod |
| Benzoic Acid                | < 50  | < 50 (33 %R) | < 50 (35 %R) (6 RPD)  | 1/30/2012     | ug/l  | 15 - 140 | 20  | 625mod |
| N-Nitrosodimethylamine      | < 1   | 14 (55 %R)   | 13 (51 %R) (8 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| n-Nitroso-di-n-propylamine  | < 1   | 19 (76 %R)   | 18 (73 %R) (4 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| n-Nitrosodiphenylamine      | < 1   | 25 (101 %R)  | 25 (100 %R) (1 RPD)   | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| bis(2-Chloroethyl)ether     | < 1   | 17 (67 %R)   | 17 (67 %R) (0 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| bis(2-chloroisopropyl)ether | < 1   | 17 (70 %R)   | 17 (69 %R) (1 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| bis(2-Chloroethoxy)methane  | < 1   | 18 (72 %R)   | 17 (70 %R) (3 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 1,3-Dichlorobenzene         | < 1   | 15 (59 %R)   | 14 (54 %R) (9 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 1,4-Dichlorobenzene         | < 1   | 15 (59 %R)   | 14 (55 %R) (7 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 1,2-Dichlorobenzene         | < 1   | 15 (60 %R)   | 14 (56 %R) (7 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 1,2,4-Trichlorobenzene      | < 1   | 16 (65 %R)   | 15 (61 %R) (6 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 2-Chloronaphthalene         | < 1   | 18 (73 %R)   | 18 (71 %R) (3 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 4-Chlorophenyl-phenylether  | < 1   | 20 (79 %R)   | 20 (80 %R) (1 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 4-Bromophenyl-phenylether   | < 1   | 21 (84 %R)   | 21 (84 %R) (0 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Hexachloroethane            | < 1   | 13 (54 %R)   | 13 (51 %R) (6 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Hexachlorobutadiene         | < 1   | 15 (61 %R)   | 14 (56 %R) (9 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Hexachlorocyclopentadiene   | < 5   | 12 (49 %R)   | 11 (45 %R) (9 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Hexachlorobenzene           | < 1   | 22 (88 %R)   | 20 (82 %R) (7 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 4-Chloroaniline             | < 1   | 20 (82 %R)   | 20 (81 %R) (1 RPD)    | 1/30/2012     | ug/l  | 15 - 140 | 20  | 625mod |
| 2-Nitroaniline              | < 5   | 19 (77 %R)   | 20 (79 %R) (3 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 3-Nitroaniline              | < 1   | 20 (79 %R)   | 20 (82 %R) (4 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 4-Nitroaniline              | < 1   | 19 (74 %R)   | 22 (88 %R) (17 RPD)   | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Benzyl alcohol              | < 5   | 17 (70 %R)   | 17 (69 %R) (1 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Nitrobenzene                | < 1   | 18 (71 %R)   | 18 (71 %R) (0 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Isophorone                  | < 1   | 22 (86 %R)   | 21 (84 %R) (2 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 2,4-Dinitrotoluene          | < 1   | 22 (88 %R)   | 23 (92 %R) (4 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 2,6-Dinitrotoluene          | < 1   | 21 (82 %R)   | 21 (85 %R) (4 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Benzidine (estimated)       | < 5   | 19 (76 %R)   | 10 (39 %R) (64 RPD) ! | 1/30/2012     | ug/l  | 15 - 168 | 20  | 625mod |
| 3,3'-Dichlorobenzidine      | < 1   | 22 (87 %R)   | 22 (88 %R) (1 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Pyridine                    | < 5   | 14 (54 %R)   | 12 (48 %R) (12 RPD)   | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Azobenzene                  | < 1   | 21 (82 %R)   | 20 (82 %R) (0 RPD)    | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |



# QC REPORT

EAI ID#: 107170

Client: GZA GeoEnvironmental, Inc. (NH)

Batch ID: 734529-39483/A012712ABN1

Client Designation: Wastewater Analysis - Weekly

| Parameter Name              | Blank | LCS        | LCSD               | Analysis Date | Units | Limits   | RPD | Method |
|-----------------------------|-------|------------|--------------------|---------------|-------|----------|-----|--------|
| Carbazole                   | < 1   | 22 (87 %R) | 22 (90 %R) (3 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Dimethylphthalate           | < 1   | 20 (80 %R) | 20 (82 %R) (2 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Diethylphthalate            | < 1   | 21 (82 %R) | 21 (85 %R) (4 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Di-n-butylphthalate         | < 5   | 22 (87 %R) | 22 (89 %R) (2 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Butylbenzylphthalate        | < 1   | 21 (85 %R) | 22 (88 %R) (3 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| bis(2-Ethylhexyl)phthalate  | < 5   | 21 (86 %R) | 22 (89 %R) (3 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Di-n-octylphthalate         | < 1   | 21 (85 %R) | 22 (89 %R) (5 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Dibenzofuran                | < 1   | 19 (75 %R) | 19 (74 %R) (1 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Naphthalene                 | < 1   | 19 (77 %R) | 18 (74 %R) (4 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 2-Methylnaphthalene         | < 1   | 18 (71 %R) | 17 (69 %R) (3 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Acenaphthylene              | < 1   | 19 (76 %R) | 19 (74 %R) (3 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Acenaphthene                | < 1   | 20 (81 %R) | 20 (80 %R) (1 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Fluorene                    | < 1   | 21 (83 %R) | 21 (83 %R) (0 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Phenanthrene                | < 1   | 22 (86 %R) | 22 (86 %R) (0 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Anthracene                  | < 1   | 21 (85 %R) | 22 (87 %R) (2 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Fluoranthene                | < 1   | 22 (86 %R) | 22 (88 %R) (2 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Pyrene                      | < 1   | 20 (82 %R) | 21 (83 %R) (1 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Benzo[a]anthracene          | < 1   | 21 (84 %R) | 22 (86 %R) (2 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Chrysene                    | < 1   | 22 (87 %R) | 22 (87 %R) (0 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Benzo[b]fluoranthene        | < 1   | 20 (81 %R) | 21 (83 %R) (2 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Benzo[k]fluoranthene        | < 1   | 22 (90 %R) | 22 (89 %R) (1 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Benzo[a]pyrene              | < 1   | 21 (83 %R) | 21 (84 %R) (1 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Indeno[1,2,3-cd]pyrene      | < 1   | 21 (86 %R) | 22 (87 %R) (1 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Dibenz[a,h]anthracene       | < 1   | 23 (91 %R) | 23 (92 %R) (1 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| Benzo[g,h,i]perylene        | < 1   | 22 (89 %R) | 22 (88 %R) (1 RPD) | 1/30/2012     | ug/l  | 40 - 140 | 20  | 625mod |
| 2-Fluorophenol (surr)       | 42 %R | 41 %R      | 40 %R              | 1/30/2012     | % Rec | 21 - 110 | 20  | 625mod |
| Phenol-d6 (surr)            | 29 %R | 30 %R      | 30 %R              | 1/30/2012     | % Rec | 15 - 94  | 20  | 625mod |
| 2,4,6-Tribromophenol (surr) | 76 %R | 93 %R      | 95 %R              | 1/30/2012     | % Rec | 15 - 110 | 20  | 625mod |
| Nitrobenzene-D5 (surr)      | 80 %R | 79 %R      | 78 %R              | 1/30/2012     | % Rec | 35 - 114 | 20  | 625mod |
| 2-Fluorobiphenyl (surr)     | 86 %R | 81 %R      | 77 %R              | 1/30/2012     | % Rec | 43 - 116 | 20  | 625mod |
| p-Terphenyl-D14 (surr)      | 92 %R | 97 %R      | 95 %R              | 1/30/2012     | % 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.



## LABORATORY REPORT

EAI ID#: 107170

Client: **GZA GeoEnvironmental, Inc. (NH)**

Client Designation: Wastewater Analysis - **Weekly**

Sample ID: Treat Tank  
Effluent

Lab Sample ID: 107170.02

Matrix: aqueous

Date Sampled: 1/26/12

Date Received: 1/26/12

Units: mg/L

Date of Extraction/Prep: 1/30/12

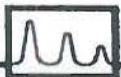
Date of Analysis: 1/30/12

Analyst: LAS

Method: 1664A

Dilution Factor: 1

Oil & Grease (HEM) < 5



## QC REPORT

EAI ID#: 107170

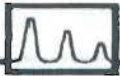
Client: GZA GeoEnvironmental, Inc. (NH)

Batch ID: 734532-40799/A013012OG1661

Client Designation: Wastewater Analysis - *Weekly*

| Parameter Name     | Blank | LCS        | LCSD               | Analysis Date | Units | Limits   | RPD | Method |
|--------------------|-------|------------|--------------------|---------------|-------|----------|-----|--------|
| Oil & Grease (HEM) | < 5   | 37 (92 %R) | 36 (90 %R) (2 RPD) | 1/30/2012     | 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.



## LABORATORY REPORT

EAI ID#: 107170

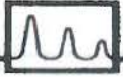
Client: **GZA GeoEnvironmental, Inc. (NH)**

Client Designation: Wastewater Analysis - *Weekly*

Sample ID: Treat Tank  
Effluent

Lab Sample ID: 107170.02  
Matrix: aqueous  
Date Sampled: 1/26/12  
Date Received: 1/26/12  
Units: ug/l  
Date of Extraction/Prep: 1/27/12  
Date of Analysis: 1/27/12  
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) | 87 %R |
| DCB (surr) | 86 %R |



## QC REPORT

EAI ID#: 107170

Client: GZA GeoEnvironmental, Inc. (NH)

Batch ID: 734529-35119/A012712E608P2

Client Designation: Wastewater Analysis - *Weekly*

| Parameter Name | Blank  | LCS            | LCSD                     | Analysis Date | Units | Limits   | RPD | Method |
|----------------|--------|----------------|--------------------------|---------------|-------|----------|-----|--------|
| PCB-1016       | < 0.3  | 2.0 (101 %R)   | 2.0 (99 %R) (2 RPD)      | 1/27/2012     | ug/l  | 50 - 114 | 20  | 608    |
| PCB-1221       | < 0.3  | < 0.3 (%R N/A) | < 0.3 (%R N/A) (RPD N/A) | 1/27/2012     | ug/l  |          |     | 608    |
| PCB-1232       | < 0.3  | < 0.3 (%R N/A) | < 0.3 (%R N/A) (RPD N/A) | 1/27/2012     | ug/l  |          |     | 608    |
| PCB-1242       | < 0.3  | < 0.3 (%R N/A) | < 0.3 (%R N/A) (RPD N/A) | 1/27/2012     | ug/l  |          |     | 608    |
| PCB-1248       | < 0.3  | < 0.3 (%R N/A) | < 0.3 (%R N/A) (RPD N/A) | 1/27/2012     | ug/l  |          |     | 608    |
| PCB-1254       | < 0.3  | < 0.3 (%R N/A) | < 0.3 (%R N/A) (RPD N/A) | 1/27/2012     | ug/l  |          |     | 608    |
| PCB-1260       | < 0.3  | 1.9 (95 %R)    | 1.9 (93 %R) (2 RPD)      | 1/27/2012     | ug/l  | 8 - 127  | 20  | 608    |
| TMX (surr)     | 93 %R  | 92 %R          | 89 %R                    | 1/27/2012     | % Rec | 30 - 150 |     | 608    |
| DCB (surr)     | 104 %R | 103 %R         | 96 %R                    | 1/27/2012     | % Rec | 30 - 150 |     | 608    |

Samples were extracted and analyzed within holding time limits.

Instrumentation was calibrated in accordance with the method requirements.

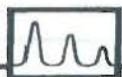
The method blanks were free of contamination at the reporting limits.

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.

\*If Flagged analyte recoveries deviated from the QA/QC limits.



# LABORATORY REPORT

EAI ID#: 107170

Client: GZA GeoEnvironmental, Inc. (NH)

Client Designation: Wastewater Analysis - *Weekly*

Sample ID: Treat Tank Effluent

Lab Sample ID: 107170.02

Matrix: aqueous

Date Sampled: 1/26/12

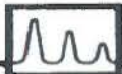
Date Received: 1/26/12

|               |       |
|---------------|-------|
| Fluoride      | 6.2   |
| Chloride      | 9500  |
| Nitrate-N     | 68    |
| Cyanide Total | 0.01  |
| Ammonia-N     | 1.2   |
| BOD           | < 6   |
| COD           | 180   |
| Total Phenols | < 0.5 |
| pH            | 7.6   |

| Units | Analysis |       |          |         |
|-------|----------|-------|----------|---------|
|       | Date     | Time  | Method   | Analyst |
| mg/L  | 2/01/12  | 13:35 | 300.0    | KI.     |
| mg/L  | 1/30/12  | 13:33 | 4500CIE  | DLS     |
| mg/L  | 1/27/12  | 9:15  | 353.2    | DLS     |
| mg/L  | 1/31/12  | 9:15  | 4500CNE  | KJR     |
| mg/L  | 1/30/12  | 15:15 | 4500NH3D | SEL     |
| mg/L  | 1/27/12  | 17:30 | 5210B    | SKC     |
| mg/L  | 2/02/12  | 16:15 | H8000    | SKC     |
| mg/L  | 1/31/12  | 9:00  | 420.1    | JCC     |
| SU    | 1/27/12  | 15:56 | 4500H+B  | SEL     |

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

Cyanide: Cyanide was re-analyzed on 2/8/2012 per client request. The re-analysis confirmed the cyanide hit. A matrix spike/matrix spike duplicate performed on this sample had acceptable recoveries.



# QC REPORT

EAI ID#: 107170

Client: **GZA GeoEnvironmental, Inc. (NH)**Client Designation: Wastewater Analysis - **Weekly**

| Parameter Name | Blank  | LCS          | LCSD                   | Units | Date of Analysis | Limits      | RPD | Method    |
|----------------|--------|--------------|------------------------|-------|------------------|-------------|-----|-----------|
| Fluoride       | < 0.1  | 2.0 (101 %R) | 2.0 (101 %R) (0 RPD)   | mg/L  | 1/31/12          | 90 - 110    | 20  | 300.0     |
| Chloride       | < 1    | 26 (102 %R)  | 25 (101 %R) (1 RPD)    | mg/L  | 1/30/12          | 90 - 110    | 20  | 4500CIE   |
| Nitrate-N      | < 0.5  | 5.1 (103 %R) | 5.2 (103 %R) (0 RPD)   | mg/L  | 1/27/12          | 90 - 110    | 20  | 353.2     |
| Cyanide Total  | < 0.01 | 0.22 (89 %R) |                        | mg/L  | 1/31/12          | 85 - 115    | 20  | 4500CNE   |
| Ammonia-N      | < 0.05 | 2.1 (104 %R) | 2.2 (109 %R) (5 RPD)   | mg/L  | 1/30/12          | 90 - 110    | 20  | 4500NH3DN |
| BOD            | < 6    | 330 (84 %R)  | 360 (89 %R) (6 RPD)    | mg/L  | 1/27/12          | 84 - 115    | 20  | 5210B     |
| COD            | < 10   | 100 (102 %R) | 100 (100 %R) (2 RPD)   | mg/L  | 2/2/12           | 85 - 115    | 20  | H8000     |
| Total Phenols  | < 0.05 | 0.24 (94 %R) | 0.27 (106 %R) (12 RPD) | mg/L  | 1/31/12          | 85 - 115    | 20  | 420.1     |
| pH             |        | 7.99         | 7.97                   | SU    | 1/27/12          | 7.95 - 8.07 | 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.



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Fx: 206-622-6870

03 February 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,

A handwritten signature in cursive script that reads "Liz Siska".

Liz Siska  
Project Manager



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   |
|-----------------------------|------------|--------|-----------------|-----------------|
| C-3024 Effluent Field Blank | 1201361-01 | Water  | 26-Jan-12 09:15 | 27-Jan-12 09:42 |
| Treat Tank Effluent         | 1201361-02 | Water  | 26-Jan-12 09:20 | 27-Jan-12 09:42 |

Frontier Global Sciences, Inc.

Liz Siska, Project Manager

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## CASE NARRATIVE

### SAMPLE RECEIPT

Samples were received at Frontier Global Sciences (FGS) on January 27th, 2012. The samples were received intact, on-ice with temperatures measured at 2.9 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 ISSUES

The Effluent Field Blank was greater than the PQL, however the because the associated sample was a non-detect, re-analysis was not required.

All analytes pass according to the QC parameters of EPA Method 200.8.

Liquid spikes were prepared for every preparation as a measure of accuracy. All liquid spikes and certified reference material were within the control limits.

As an additional measure of the accuracy of the methods utilized for analysis and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries were within the control limits with the exception of any QC flagged and described in the notes and definitions section of the following report.

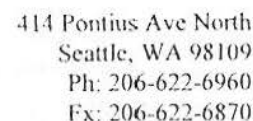
A reasonable measure of the precision of the analytical methods utilized for analysis is the relative percent difference (RPD) between matrix spike and matrix spike duplicate recoveries and between laboratory control sample and laboratory control sample duplicate recoveries. All of the relative percent differences were within the control limits with the exception of any QC flagged and described in the notes and definitions section of the following report.

Frontier Global Sciences, Inc.

Liz Siska, Project Manager

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2013  
FRONTIER  
GLOBAL SCIENCES

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Phone: 206-622-6960  
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info@trondorfg.com  
<http://www.trondorfg.com>

Rec'd to TGS - via C-73C, ALX4 in BAKED: 1005-1027-12  
VTSR 4-10-10 1002-12

Liz Siska

Liz Siska, Project Manager

## ANALYTICAL RESULTS

### C-3024 Effluent Field Blank

Matrix: Water

Laboratory ID: 1201361-01

| Analyte    | Result | MDL   | MRL   | Units | Dilution | Batch   | Sequence | Analyzed | Method    | Notes    |
|------------|--------|-------|-------|-------|----------|---------|----------|----------|-----------|----------|
| Aluminum   | ND     | 0.4   | 4.0   | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Antimony   | ND     | 0.005 | 0.020 | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Arsenic    | ND     | 0.05  | 0.15  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Barium     | ND     | 0.03  | 0.20  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Beryllium  | ND     | 0.023 | 0.060 | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Cadmium    | ND     | 0.004 | 0.020 | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Chromium   | ND     | 0.009 | 0.10  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Copper     | ND     | 0.01  | 0.10  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Iron       | ND     | 1.3   | 10.0  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Lead       | ND     | 0.004 | 0.040 | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Manganese  | ND     | 0.007 | 0.10  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Mercury    | ND     | 0.08  | 0.50  | ng/L  | 1        | F202015 | 2B03001  | 02/02/12 | EPA 1631E | U        |
| Molybdenum | ND     | 0.006 | 0.06  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Nickel     | ND     | 0.008 | 0.10  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Selenium   | ND     | 0.19  | 0.60  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Silver     | ND     | 0.006 | 0.020 | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Thallium   | ND     | 0.001 | 0.005 | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   | QB-02, U |
| Zinc       | 0.25   | 0.02  | 0.20  | µg/L  | 1        | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |

Frontier Global Sciences, Inc.



Liz Siska, Project Manager

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## ANALYTICAL RESULTS

### Treat Tank Effluent

Matrix: Water

Laboratory ID: 1201361-02

| Analyte    | Result | MDL   | MRL   | Units | Dilution | Batch   | Sequence | Analyzed | Method    | Notes    |
|------------|--------|-------|-------|-------|----------|---------|----------|----------|-----------|----------|
| Aluminum   | ND     | 8.9   | 80.0  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Antimony   | 0.758  | 0.092 | 0.400 | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Arsenic    | 9.56   | 1.02  | 3.00  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Barium     | 208    | 0.54  | 4.00  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Beryllium  | ND     | 0.454 | 1.20  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Cadmium    | 0.587  | 0.083 | 0.400 | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Chromium   | ND     | 0.18  | 2.00  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Copper     | 2.61   | 0.20  | 2.00  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Iron       | ND     | 26.0  | 200   | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Lead       | ND     | 0.078 | 0.800 | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Manganese  | 349    | 0.15  | 2.00  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Mercury    | 12.2   | 0.34  | 2.02  | ng/L  | 4        | F202015 | 2B03001  | 02/02/12 | EPA 1631E |          |
| Molybdenum | 373    | 0.12  | 1.20  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Nickel     | 7.76   | 0.16  | 2.00  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Selenium   | 104    | 3.88  | 12.0  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   |          |
| Silver     | ND     | 0.120 | 0.400 | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   | U        |
| Thallium   | 5.65   | 0.022 | 0.100 | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   | QB-01    |
| Zinc       | ND     | 0.33  | 4.00  | µg/L  | 20       | F201252 | 2B02001  | 02/01/12 | FGS-054   | QB-02, U |

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## MATRIX DUPLICATES/TRIPPLICATES

SOURCE: 1201316-03

Batch: F202015

Sequence: 2B03001

Preparation: BrCl Oxidation

Lab Number: F202015-DUP1

| Analyte | Sample<br>Concentration<br>ng/L | Duplicate<br>Concentration<br>ng/L | MRL  | %<br>RPD | RPD<br>Limit | Method    | Notes |
|---------|---------------------------------|------------------------------------|------|----------|--------------|-----------|-------|
| Mercury | 6.99                            | 5.98                               | 1.00 | 15.6     | 24           | EPA 1631E |       |

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## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

**SOURCE: 1201361-02**

Batch: F201252

Sequence: 2B02001

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F201252-MS/MSD1

| Analyte    | Sample Concentration (µg/L) | Spike Added (µg/L) | MS Concentration (µg/L) | MS % Recovery | Recovery Limits | Method  | Notes        |
|------------|-----------------------------|--------------------|-------------------------|---------------|-----------------|---------|--------------|
| Beryllium  | ND                          | 2.0200             | 2.214                   | 110           | 75 - 125        | FGS-054 |              |
| Aluminum   | 66.2                        | 151.50             | 213.7                   | 97.4          | 80 - 115        | FGS-054 |              |
| Chromium   | 0.57                        | 7.0700             | 7.92                    | 104           | 85 - 115        | FGS-054 |              |
| Manganese  | 348.7                       | 6.0600             | 353.9                   | 86.1          | 80 - 120        | FGS-054 |              |
| Iron       | ND                          | 505.00             | 494.7                   | 98.0          | 75 - 125        | FGS-054 |              |
| Nickel     | 7.76                        | 4.0400             | 11.66                   | 96.7          | 68 - 134        | FGS-054 |              |
| Copper     | 2.61                        | 4.0400             | 6.22                    | 89.4          | 51 - 145        | FGS-054 |              |
| Zinc       | ND                          | 10.100             | 9.96                    | 98.6          | 46 - 146        | FGS-054 |              |
| Arsenic    | 9.56                        | 15.150             | 24.20                   | 96.6          | 85 - 115        | FGS-054 |              |
| Selenium   | 104.4                       | 30.300             | 127.8                   | 77.1          | 59 - 149        | FGS-054 |              |
| Molybdenum | 373.5                       | 2.0200             | 375.9                   | 119           | 80 - 115        | FGS-054 | QM-02        |
| Silver     | ND                          | 1.5150             | 1.289                   | 85.1          | 74 - 119        | FGS-054 |              |
| Cadmium    | 0.587                       | 0.80800            | 1.229                   | 79.5          | 84 - 113        | FGS-054 | QM-07        |
| Antimony   | 0.758                       | 0.80800            | 1.539                   | 96.7          | 79 - 122        | FGS-054 |              |
| Barium     | 208.4                       | 10.100             | 214.5                   | 60.3          | 80 - 120        | FGS-054 | QM-02        |
| Thallium   | 5.650                       | 0.40400            | 5.907                   | 63.6          | 64 - 137        | FGS-054 | QB-01, QM-02 |
| Lead       | ND                          | 1.5150             | 1.488                   | 98.2          | 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             | 2.256                    | 112            | 1.88   | 75 - 125        | 20        | FGS-054 |       |
| Aluminum   | 151.50             | 213.6                    | 97.3           | 0.0484 | 80 - 115        | 20        | FGS-054 |       |
| Chromium   | 7.0700             | 7.58                     | 99.1           | 4.45   | 85 - 115        | 20        | FGS-054 |       |
| Manganese  | 6.0600             | 355.8                    | 118            | 0.544  | 80 - 120        | 20        | FGS-054 |       |
| Iron       | 505.00             | 489.5                    | 96.9           | 1.06   | 75 - 125        | 20        | FGS-054 |       |
| Nickel     | 4.0400             | 11.39                    | 89.9           | 2.39   | 68 - 134        | 20        | FGS-054 |       |
| Copper     | 4.0400             | 6.23                     | 89.5           | 0.117  | 51 - 145        | 20        | FGS-054 |       |
| Zinc       | 10.100             | 9.23                     | 91.4           | 7.53   | 46 - 146        | 20        | FGS-054 |       |
| Arsenic    | 15.150             | 25.81                    | 107            | 6.44   | 85 - 115        | 20        | FGS-054 |       |
| Selenium   | 30.300             | 130.8                    | 86.9           | 2.28   | 59 - 149        | 20        | FGS-054 |       |
| Molybdenum | 2.0200             | 377.7                    | 210            | 0.491  | 80 - 115        | 20        | FGS-054 | QM-02 |

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Liz Siska, Project Manager

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## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

**SOURCE: 1201361-02**

**Batch:** F201252

**Sequence:** 2B02001

**Preparation:** Closed Vessel Nitric Oven Digestion

**Lab Number:** F201252-MS/MSD1

| Analyte  | Spike Added (µg/L) | MSD Concentration (µg/L) | MSD % Recovery | % RPD | Recovery Limits | RPD Limit | Method  | Notes |
|----------|--------------------|--------------------------|----------------|-------|-----------------|-----------|---------|-------|
| Silver   | 1.5150             | 1.273                    | 84.0           | 1.28  | 74 - 119        | 20        | FGS-054 |       |
| Cadmium  | 0.80800            | 1.102                    | 63.8           | 10.8  | 84 - 113        | 20        | FGS-054 | QM-07 |
| Antimony | 0.80800            | 1.618                    | 107            | 5.02  | 79 - 122        | 20        | FGS-054 |       |
| Barium   | 10.100             | 219.6                    | 110            | 2.32  | 80 - 120        | 20        | FGS-054 |       |
| Thallium | 0.40400            | 6.127                    | 118            | 3.66  | 64 - 137        | 20        | FGS-054 | QB-01 |
| Lead     | 1.5150             | 1.502                    | 99.1           | 0.946 | 72 - 143        | 20        | FGS-054 |       |

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## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201361-02

Batch: F201252

Sequence: 2B02001

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F201252-MS/MSD3

| Analyte    | Sample Concentration (µg/L) | Spike Added (µg/L) | MS Concentration (µg/L) | MS % Recovery | Recovery Limits | Method  | Notes     |
|------------|-----------------------------|--------------------|-------------------------|---------------|-----------------|---------|-----------|
| Beryllium  | ND                          | 20.200             | 18.23                   | 90.2          | 75 - 125        | FGS-054 | AS        |
| Aluminum   | 66.2                        | 4040.0             | 3986                    | 97.0          | 80 - 115        | FGS-054 | AS        |
| Chromium   | 0.57                        | 404.00             | 411.3                   | 102           | 85 - 115        | FGS-054 | AS        |
| Manganese  | 348.7                       | 404.00             | 755.7                   | 101           | 80 - 120        | FGS-054 | AS        |
| Iron       | ND                          | 2020.0             | 2012                    | 99.6          | 75 - 125        | FGS-054 | AS        |
| Nickel     | 7.76                        | 505.00             | 488.7                   | 95.2          | 68 - 134        | FGS-054 | AS        |
| Copper     | 2.61                        | 505.00             | 459.9                   | 90.6          | 51 - 145        | FGS-054 | AS        |
| Zinc       | ND                          | 1010.0             | 870.1                   | 86.1          | 46 - 146        | FGS-054 | AS        |
| Arsenic    | 9.56                        | 404.00             | 408.2                   | 98.7          | 85 - 115        | FGS-054 | AS        |
| Selenium   | 104.4                       | 404.00             | 480.3                   | 93.0          | 59 - 149        | FGS-054 | AS        |
| Molybdenum | 373.5                       | 202.00             | 574.9                   | 99.7          | 80 - 115        | FGS-054 | AS        |
| Silver     | ND                          | 20.200             | 17.43                   | 86.3          | 74 - 119        | FGS-054 | AS        |
| Cadmium    | 0.587                       | 40.400             | 37.52                   | 91.4          | 84 - 113        | FGS-054 | AS        |
| Antimony   | 0.758                       | 20.200             | 20.06                   | 95.5          | 79 - 122        | FGS-054 | AS        |
| Barium     | 208.4                       | 808.00             | 987.1                   | 96.4          | 80 - 120        | FGS-054 | AS        |
| Thallium   | 5.650                       | 20.200             | 25.86                   | 100           | 64 - 137        | FGS-054 | AS, QB-01 |
| Lead       | ND                          | 101.00             | 97.63                   | 96.7          | 72 - 143        | FGS-054 | AS        |

| Analyte    | Spike Added (µg/L) | MSD Concentration (µg/L) | MSD % Recovery | % RPD  | Recovery Limits | RPD Limit | Method  | Notes |
|------------|--------------------|--------------------------|----------------|--------|-----------------|-----------|---------|-------|
| Beryllium  | 20.200             | 18.26                    | 90.4           | 0.151  | 75 - 125        | 20        | FGS-054 | AS    |
| Aluminum   | 4040.0             | 3956                     | 96.3           | 0.751  | 80 - 115        | 20        | FGS-054 | AS    |
| Chromium   | 404.00             | 408.1                    | 101            | 0.780  | 85 - 115        | 20        | FGS-054 | AS    |
| Manganese  | 404.00             | 752.0                    | 99.8           | 0.487  | 80 - 120        | 20        | FGS-054 | AS    |
| Iron       | 2020.0             | 1989                     | 98.5           | 1.13   | 75 - 125        | 20        | FGS-054 | AS    |
| Nickel     | 505.00             | 485.4                    | 94.6           | 0.681  | 68 - 134        | 20        | FGS-054 | AS    |
| Copper     | 505.00             | 459.2                    | 90.4           | 0.161  | 51 - 145        | 20        | FGS-054 | AS    |
| Zinc       | 1010.0             | 870.5                    | 86.2           | 0.0542 | 46 - 146        | 20        | FGS-054 | AS    |
| Arsenic    | 404.00             | 412.0                    | 99.6           | 0.916  | 85 - 115        | 20        | FGS-054 | AS    |
| Selenium   | 404.00             | 470.1                    | 90.5           | 2.15   | 59 - 149        | 20        | FGS-054 | AS    |
| Molybdenum | 202.00             | 574.5                    | 99.5           | 0.0697 | 80 - 115        | 20        | FGS-054 | AS    |
| Silver     | 20.200             | 17.50                    | 86.6           | 0.385  | 74 - 119        | 20        | FGS-054 | AS    |

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## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201361-02

Batch: F201252

Sequence: 2B02001

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F201252-MS/MSD3

| Analyte  | Spike Added (µg/L) | MSD Concentration (µg/L) | MSD % Recovery | % RPD  | Recovery Limits | RPD Limit | Method  | Notes     |
|----------|--------------------|--------------------------|----------------|--------|-----------------|-----------|---------|-----------|
| Cadmium  | 40.400             | 38.59                    | 94.1           | 2.81   | 84 - 113        | 20        | FGS-054 | AS        |
| Antimony | 20.200             | 20.14                    | 95.9           | 0.386  | 79 - 122        | 20        | FGS-054 | AS        |
| Barium   | 808.00             | 994.4                    | 97.3           | 0.729  | 80 - 120        | 20        | FGS-054 | AS        |
| Thallium | 20.200             | 25.85                    | 100            | 0.0375 | 64 - 137        | 20        | FGS-054 | AS, QB-01 |
| Lead     | 101.00             | 97.56                    | 96.6           | 0.0774 | 72 - 143        | 20        | FGS-054 | AS        |

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## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

**SOURCE: 1201316-03**

Batch: F202015

Sequence: 2B03001

Preparation: BrCl Oxidation

Lab Number: F202015-MS/MSD1

| Analyte | Sample Concentration (ng/L) | Spike Added (ng/L) | MS Concentration (ng/L) | MS % Recovery | Recovery Limits | Method    | Notes |
|---------|-----------------------------|--------------------|-------------------------|---------------|-----------------|-----------|-------|
| Mercury | 6.99                        | 20.200             | 22.10                   | 74.8          | 71 - 125        | EPA 1631E |       |

| Analyte | Spike Added (ng/L) | MSD Concentration (ng/L) | MSD % Recovery | % RPD | Recovery Limits | RPD Limit | Method    | Notes |
|---------|--------------------|--------------------------|----------------|-------|-----------------|-----------|-----------|-------|
| Mercury | 20.200             | 20.97                    | 69.2           | 5.22  | 71 - 125        | 24        | EPA 1631E | QM-05 |

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## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201361-02

Batch: F202015

Sequence: 2B03001

Preparation: BrCl Oxidation

Lab Number: F202015-MS/MSD2

| Analyte | Sample<br>Concentration<br>(ng/L) | Spike<br>Added<br>(ng/L) | MS<br>Concentration<br>(ng/L) | MS<br>%<br>Recovery | Recovery<br>Limits | Method    | Notes |
|---------|-----------------------------------|--------------------------|-------------------------------|---------------------|--------------------|-----------|-------|
| Mercury | 12.20                             | 40.800                   | 52.32                         | 98.3                | 71 - 125           | EPA 1631E |       |

| Analyte | Spike<br>Added<br>(ng/L) | MSD<br>Concentration<br>(ng/L) | MSD<br>%<br>Recovery | %<br>RPD | Recovery<br>Limits | RPD<br>Limit | Method    | Notes |
|---------|--------------------------|--------------------------------|----------------------|----------|--------------------|--------------|-----------|-------|
| Mercury | 40.800                   | 52.12                          | 97.8                 | 0.379    | 71 - 125           | 24           | EPA 1631E |       |

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## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1201359-01

Batch: F202015

Sequence: 2B03001

Preparation: BrCl Oxidation

Lab Number: F202015-MS/MSD4

| Analyte | Sample<br>Concentration<br>(ng/L) | Spike<br>Added<br>(ng/L) | MS<br>Concentration<br>(ng/L) | MS<br>%<br>Recovery | Recovery<br>Limits | Method    | Notes |
|---------|-----------------------------------|--------------------------|-------------------------------|---------------------|--------------------|-----------|-------|
| Mercury | 1171                              | 1530.0                   | 2618                          | 94.6                | 71 - 125           | EPA 1631E |       |

| Analyte | Spike<br>Added<br>(ng/L) | MSD<br>Concentration<br>(ng/L) | MSD<br>%<br>Recovery | %<br>RPD | Recovery<br>Limits | RPD<br>Limit | Method    | Notes |
|---------|--------------------------|--------------------------------|----------------------|----------|--------------------|--------------|-----------|-------|
| Mercury | 1530.0                   | 2594                           | 93.1                 | 0.888    | 71 - 125           | 24           | EPA 1631E |       |

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# LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

## RECOVERY AND RPD

Batch: F201252

Sequence: 2B02001

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F201252-BS/BSDI

LCS Source: Blank Spike

| Analyte    | Spike Added (µg/L) | LCS Concentration (µg/L) | LCS % Recovery | Recovery Limits | Method  | Notes |
|------------|--------------------|--------------------------|----------------|-----------------|---------|-------|
| Beryllium  | 2.0000             | 1.962                    | 98.1           | 75 - 125        | FGS-054 |       |
| Aluminum   | 150.00             | 146.0                    | 97.3           | 85 - 115        | FGS-054 |       |
| Chromium   | 7.0000             | 6.47                     | 92.5           | 85 - 115        | FGS-054 |       |
| Manganese  | 6.0000             | 5.83                     | 97.1           | 85 - 115        | FGS-054 |       |
| Iron       | 500.00             | 459.4                    | 91.9           | 80 - 120        | FGS-054 |       |
| Nickel     | 4.0000             | 3.92                     | 98.0           | 68 - 134        | FGS-054 |       |
| Copper     | 4.0000             | 4.17                     | 104            | 51 - 145        | FGS-054 |       |
| Zinc       | 10.000             | 10.48                    | 105            | 46 - 146        | FGS-054 |       |
| Arsenic    | 15.000             | 14.27                    | 95.1           | 85 - 115        | FGS-054 |       |
| Selenium   | 30.000             | 28.04                    | 93.5           | 59 - 149        | FGS-054 |       |
| Molybdenum | 2.0000             | 1.88                     | 93.8           | 85 - 115        | FGS-054 |       |
| Silver     | 1.5000             | 1.490                    | 99.3           | 74 - 119        | FGS-054 |       |
| Cadmium    | 0.80000            | 0.825                    | 103            | 84 - 113        | FGS-054 |       |
| Antimony   | 0.80000            | 0.780                    | 97.5           | 79 - 122        | FGS-054 |       |
| Barium     | 10.000             | 9.78                     | 97.8           | 85 - 115        | FGS-054 |       |
| Thallium   | 0.40000            | 0.417                    | 104            | 64 - 134        | FGS-054 | QB-01 |
| Lead       | 1.5000             | 1.517                    | 101            | 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             | 1.944                     | 97.2            | 0.928  | 75 - 125        | 20        | FGS-054 |       |
| Aluminum  | 150.00             | 145.9                     | 97.2            | 0.0872 | 85 - 115        | 20        | FGS-054 |       |
| Chromium  | 7.0000             | 6.46                      | 92.2            | 0.275  | 85 - 115        | 20        | FGS-054 |       |
| Manganese | 6.0000             | 5.74                      | 95.6            | 1.55   | 85 - 115        | 20        | FGS-054 |       |
| Iron      | 500.00             | 458.2                     | 91.6            | 0.251  | 80 - 120        | 20        | FGS-054 |       |
| Nickel    | 4.0000             | 3.96                      | 99.0            | 1.01   | 68 - 134        | 20        | FGS-054 |       |
| Copper    | 4.0000             | 4.16                      | 104             | 0.0881 | 51 - 145        | 20        | FGS-054 |       |
| Zinc      | 10.000             | 10.39                     | 104             | 0.846  | 46 - 146        | 20        | FGS-054 |       |
| Arsenic   | 15.000             | 14.17                     | 94.4            | 0.731  | 85 - 115        | 20        | FGS-054 |       |

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Liz Siska, Project Manager

## LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

### RECOVERY AND RPD

Batch: F201252

Sequence: 2B02001

Preparation: Closed Vessel Nitric Oven Digestion

Lab Number: F201252-BS/BSDI

LCS Source: Blank Spike Dup

| Analyte    | Spike Added (µg/L) | LCSD Concentration (µg/L) | LCSD % Recovery | % RPD | Recovery Limits | RPD Limit | Method  | Notes |
|------------|--------------------|---------------------------|-----------------|-------|-----------------|-----------|---------|-------|
| Selenium   | 30.000             | 27.98                     | 93.3            | 0.184 | 59 - 149        | 20        | FGS-054 |       |
| Molybdenum | 2.0000             | 1.86                      | 92.8            | 1.11  | 85 - 115        | 20        | FGS-054 |       |
| Silver     | 1.5000             | 1.501                     | 100             | 0.752 | 74 - 119        | 20        | FGS-054 |       |
| Cadmium    | 0.80000            | 0.757                     | 94.7            | 8.56  | 84 - 113        | 20        | FGS-054 |       |
| Antimony   | 0.80000            | 0.797                     | 99.6            | 2.18  | 79 - 122        | 20        | FGS-054 |       |
| Barium     | 10.000             | 9.76                      | 97.6            | 0.247 | 85 - 115        | 20        | FGS-054 |       |
| Thallium   | 0.40000            | 0.410                     | 103             | 1.51  | 64 - 134        | 20        | FGS-054 | QB-01 |
| Lead       | 1.5000             | 1.524                     | 102             | 0.433 | 72 - 143        | 20        | FGS-054 |       |

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## LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

### RECOVERY AND RPD

Batch: F202015

Sequence: 2B03001

Preparation: BrCl Oxidation

Lab Number: F202015-BS/BSD1

LCS Source: Nist 1641d

| Analyte | Spike Added (ng/L) | LCS Concentration (ng/L) | LCS % Recovery | Recovery Limits | Method    | Notes |
|---------|--------------------|--------------------------|----------------|-----------------|-----------|-------|
| Mercury | 15.679             | 15.11                    | 96.4           | 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             | 14.79                     | 94.3            | 2.16  | 80 - 120        | 24        | EPA 1631E |       |

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## PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 2B02001

Preparation: Closed Vessel Nitric Oven Digestion

| Lab Sample ID | Analyte    | Found   | MRL   | Units | Batch   | Method  | Notes    |
|---------------|------------|---------|-------|-------|---------|---------|----------|
| F201252-BLK1  | Beryllium  | -0.0003 | 0.060 | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Aluminum   | 0.01    | 4.0   | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Chromium   | -0.04   | 0.10  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Manganese  | -0.0007 | 0.10  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Iron       | -0.4    | 10.0  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Nickel     | 0.004   | 0.10  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Copper     | 0.02    | 0.10  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Zinc       | 0.32    | 0.20  | µg/L  | F201252 | FGS-054 | QB-10    |
| F201252-BLK1  | Arsenic    | -0.15   | 0.15  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Selenium   | 0.14    | 0.60  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Molybdenum | 0.004   | 0.06  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Silver     | -0.001  | 0.020 | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Cadmium    | -0.010  | 0.020 | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Antimony   | -0.0003 | 0.020 | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Barium     | 0.07    | 0.20  | µg/L  | F201252 | FGS-054 | U        |
| F201252-BLK1  | Thallium   | 0.002   | 0.005 | µg/L  | F201252 | FGS-054 | QB-02, U |
| F201252-BLK1  | Lead       | 0.0003  | 0.040 | µg/L  | F201252 | FGS-054 | U        |

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## PREPARATION BLANKS

Instrument: Hg-17

Sequence: 2B03001

Preparation: BrCl Oxidation

| Lab Sample ID | Analyte | Found | MRL  | Units | Batch   | Method    | Notes    |
|---------------|---------|-------|------|-------|---------|-----------|----------|
| F202015-BLK1  | Mercury | 0.06  | 0.50 | ng/L  | F202015 | EPA 1631E | U        |
| F202015-BLK2  | Mercury | 0.03  | 0.50 | ng/L  | F202015 | EPA 1631E | U        |
| F202015-BLK3  | Mercury | 0.05  | 0.50 | ng/L  | F202015 | EPA 1631E | U        |
| F202015-BLK4  | Mercury | 0.06  | 0.50 | ng/L  | F202015 | EPA 1631E | QB-04, U |

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## Notes and Definitions

- U Analyte included in the analysis, but not detected
- QM-07 The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
- QM-05 The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- 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-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-02 The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the sample concentrations are less than 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.
- 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

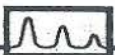
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## CHAIN-OF-CUSTODY RECORD

107170

35

| Sample IDs                                                                          | Date/Time<br>Composites need start<br>and stop dates/times | Matrix                  | Parameters and Sample Notes                                                                                                            | # of containers                                                                     |
|-------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Effluent Field Blank                                                                | 1/26/12<br>9:15                                            | aqueous<br>Grab or Comp | AqTot/SWLLMetalsSub                                                                                                                    | 1                                                                                   |
| <input checked="" type="checkbox"/> Sampler confirms ID and parameters are accurate |                                                            |                         | Circle preservative/s: HCL HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH MEQH Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> ICE | Dissolved Sample Field Filtered <input type="checkbox"/>                            |
| Treat Tank Effluent                                                                 | 1/26/12<br>9:20                                            | aqueous<br>Grab or Comp | AqTot/SWLLMetalsSub/NH <sub>3</sub> /BOD/Cl/COD/CyanT/F/NO <sub>3</sub> /OG1664/V624A/E625/E608PCB/TPhenols / pH *                     | 17                                                                                  |
| <input checked="" type="checkbox"/> Sampler confirms ID and parameters are accurate |                                                            |                         | Circle preservative/s: HCL HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> NaOH MEQH Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub> ICE | * AT CUSTOMER'S REQUEST<br>Dissolved Sample Field Filtered <input type="checkbox"/> |

Please ensure this auto COC is accurate, adheres to permit or sampling requirements for this sampling event, and modify as necessary.

EAI Project ID 3902

Project Name Wastewater Analysis - Weekly

State NH

Client (Pro Mgr) Paul Pepler

Customer GZA GeoEnvironmental, Inc. (NH)

Address 380 Harvey Road

City Manchester NH 03103

Phone 623-3600

Fax 624-9463 (37)

EmailAddress: paul.pepler@gza.com

Results Needed by: Preferred date 2/1/12

Notes about project: (i.e. Special Limits, Billing info if different...)

Subcontract ALL metals to Frontier Global Sciences.

Metals include Total

Al, Sb, As, Ba, Be, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, Tl, Zn. Metals analyses require project-specific MS/MSD.

624, 625, 608 results needed

2/1/2012

2/1/2012 JC

QC deliverables

☒ A ☐ A+ ☒ B ☐ B+ ☐ C ☐ PC

Reporting Options

- ☒ HC  
☒ EDD PDF  
☒ EDD email  
☒ PDF prelim, NO FAX  
☐ e-mail Login Confirmation  
☐ NO FAX

PONumber: 02259252

Quote No:

Temperature 4.5 °C

Ice present Yes ☒ No ☐

Samples Collected by: JB JG

Relinquished by

Date/Time

Received by

Relinquished by

Date/Time

Received by

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301

Phone: (603)228-0525

1-800-287-0525

Fax: (603)228-4591