



January 29, 2007  
Ref. No. 137003-095

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REGION 1  
2007 FEB -2 PM 12:09

Mr. Eric Lardiere  
Meggitt-USA, Inc.  
Whittaker Corporation  
1955 N. Surveyor Avenue  
Simi Valley, California 93063

Subject: Annual Site Groundwater Monitoring for 2006

Dear Mr. Lardiere:

Please find the enclosed document detailing the September 2006 groundwater sampling event conducted by EnergySolutions, LLC at the Whittaker site located near Greenville, PA. This document should be attached as Addendum 11 to the site Groundwater Monitoring Plan (Scientech Document Number 82A9103, Revision 3).

Please complete and return the top copy of the enclosed EnergySolutions Document Transmittal Form to indicate receipt of your controlled copy of this report.

Should you have any questions or comments, please call me at (864) 235-3695.

Sincerely,

Kevin E. Taylor, PE  
Sr. Health Physicist  
Envirocare of Utah, LLC  
17 College Street  
Suite D  
Greenville, SC 29601  
Phone: (864) 235-3695  
Fax: (864) 235-8405

KET/lhc

cc: J. Kottan w/enclosure  
B. Werner w/enclosure  
R. Woods w/enclosure



143 West Street  
 New Milford, CT 06776  
 (860) 355-8194

**DOCUMENT TRANSMITTAL CONTROL FORM  
 NUMBER 64632**

Page 1 of 1

**Date Issued:** 1/30/2007  
**Project No.:** 137003  
**Assigned to:** Jim Kottan, Division of Nuclear Materials Safety  
 693 U.S. Nuclear Regulatory Commission,  
 475 Allendale Road  
 King of Prussia, PA 19406

Document No.	Rev. No.	Comments	Document Title
82A9103	03	1 Controlled Copy-Addendum 11	Groundwater Monitoring Plan for the Mercer Alloys (Whittaker) Site Remediation

By signing this transmittal, you are acknowledging receipt of the controlled document(s) listed above. A controlled document means that you will automatically receive revisions made to the document(s). If Document Control does not receive this transmittal, you may be removed from distribution at the discretion of the EnergySolutions, LLC Quality Assurance Representative.

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I hereby acknowledge receipt of the above document(s) and have destroyed or marked obsolete all prior revisions.

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Please sign, date and return this Transmittal form to:

**EnergySolutions, LLC, Attention: Document Control**  
 143 West Street, New Milford, CT 06776 or FAX: (860) 355-3295

# ENERGYSOLUTIONS

## ADDENDUM AUTHORIZATION

29-Jan-07  
Effective Date

Document Title Groundwater Monitoring Plan

Document No. 82A9103, Rev. 3

Addendum No. 11

Originator *Kevin E. Taylor*  
Kevin E. Taylor

For Site/Utility Whittaker Site, Greenville, PA

### Description of Addendum:

Report on annual site groundwater monitoring for 2006.

CONTROLLED COPY No. 693

### Reason for Change:

Results of the ANNUAL groundwater monitoring are to be submitted per Section 3 of the Groundwater Monitoring Plan.

### APPROVALS:

<u>Title</u>	<u>Signature</u>	<u>Date</u>
Technical Reviewer _____	<u><i>Robert E. McPeak, Jr.</i></u> Robert E. McPeak, Jr., P.E., L.E.P.	<u>1/29/07</u>
Operations Manager _____	<u><i>Lee G. Penney</i></u> Lee G. Penney	<u>1/30/07</u>
_____	_____	_____
_____	_____	_____

Approvals for the Addendum shall at least be equal to the Approval of the base document and may include customer sign off.

Distribute to all EnergySolutions Control Copy holders of affected document and None

A copy of this authorization shall be attached to the affected document.

January 29, 2007

Subject: Whittaker Site Groundwater Monitoring Well Sampling, September 2006

## INTRODUCTION

In accordance with Whittaker Corporation's U.S. Nuclear Regulatory Commission (NRC) License No. SMA-1018, Amendment No. 14, Condition No. 15, and Scientech, LLC Document No. 82A9103, Revision 3, "Groundwater Monitoring Plan, Whittaker Corporation, Greenville, PA," well sampling activities were conducted on September 20 and 21, 2006. Robert McPeak (Project Environmental Engineer) of EnergySolutions, LLC conducted the sampling activities with support from on-site EnergySolutions personnel. Well sampling procedures and analytical protocol are discussed and specified in the Groundwater Monitoring Plan. The water sampling event also complies with the environmental monitoring requirements of the site Restoration Plan as approved by the Pennsylvania Department of Environmental Protection.

## ACTIVITIES

EnergySolutions first measured the depths to groundwater for all 10 site monitoring wells (MW-1 to MW-10). EnergySolutions sampled wells MW-2 through MW-5, MW-8 and MW-10 on September 20 and wells MW-1, MW-6, MW-7, and MW-9 on September 21. Water samples were collected in one gallon plastic containers for gross alpha and gross beta analysis. The wells were productive and sampling proceeded without any problems.

Groundwater samples were analyzed for gross alpha and gross beta activity using gas flow proportional counting (GFPC) (EPA Method 900.0 MOD) by Severn Trent Laboratories. (STL) radioanalytical laboratory in St. Louis, MO. For quality assurance (QA) purposes, EnergySolutions sent a duplicate sample from MW-9 to General Engineering Laboratories (GEL) in Charleston, SC.

## RESULTS

Table 1 provides a summary of groundwater analytical results for MW-1 through MW-10 for gross alpha and gross beta as reported by STL. All results were less than the water quality contaminant limits of 15 picocuries per liter (pCi/L) gross alpha and less than 50 pCi/L gross beta. In fact, no sample has had concentrations greater than either limit since April 2001. As a result, none of the samples were analyzed for isotopic distribution. The maximum reported alpha activity was 6.7 pCi/L for the sample collected from MW-10; however, this concentration was less than the minimum detectable concentration (MDC) of 8.4 pCi/L. While MDCs for the gross alpha analyses were slightly elevated in several samples due to high residual mass in those samples, no MDCs were greater than the 15 pCi/L action limit. The maximum beta activity was 22.2 pCi/L for the sample collected from MW-8.

Surface water samples were also collected from a point upstream of the Whittaker site and a point downstream from the site on the Shenango River as well as in the two "ponds" that are formed from the storm water outfalls that pass below Section 4 of the Whittaker site. The data from these samples is provided in Table 2.

**TABLE 1**  
**GROUNDWATER ANALYSIS DATA – September 2006**

Field ID	SMP Received		Analysis	Result	Error	MDA	Unit
MW-1	~ 4000	ml	Alpha	2.4	2.6	4.1	pCi/L
			Beta	4.3	3.3	5.3	pCi/L
MW-2	~ 4000	ml	Alpha	2.0	2.2	3.5	pCi/L
			Beta	4.1	2.3	3.5	pCi/L
MW-3	~ 4000	ml	Alpha	3.2	2.4	3.4	pCi/L
			Beta	12.9	3.4	4.4	pCi/L
MW-3 <sub>Dup</sub>	~ 4000	ml	Alpha	2.5	2.2	3.3	pCi/L
			Beta	8.5	3.1	4.4	pCi/L
MW-4	~ 4000	ml	Alpha	3.7	1.7	1.9	pCi/L
			Beta	6.3	1.6	2.1	pCi/L
MW-5	~ 4000	ml	Alpha	1.3	1.6	2.6	pCi/L
			Beta	9.8	2.7	3.6	pCi/L
MW-6	~ 4000	ml	Alpha	4.7	4.4	6.7	pCi/L
			Beta	13.8	4.7	6.6	pCi/L
MW-7	~ 4000	ml	Alpha	2.5	2.1	3.1	pCi/L
			Beta	6.0	2.6	3.9	pCi/L
MW-8	~ 4000	ml	Alpha	3.5	3.5	5.2	pCi/L
			Beta	20.4	5.7	7.5	pCi/L
MW-9	~ 4000	ml	Alpha	-1.6	2.8	6.4	pCi/L
			(STL) Beta	7.7	4.1	6.3	pCi/L
MW-9 <sub>Dup</sub>	~ 4000	ml	Alpha	1.73	1.84	2.95	pCi/L
			(GEL) Beta	2.18	1.41	2.51	pCi/L
MW-10	~ 4000	ml	Alpha	7.6	5.7	8.0	pCi/L
			Beta	31.8	7.6	9.4	pCi/L

**TABLE 2**  
**SURFACE WATER ANALYSIS DATA – September 2006**

Field ID	SMP Received		Analysis	Result	Error	MDA	Unit
South Pond	4000	ml	Alpha	3.7	4.4	7.1	pCi/L
			Beta	7.4	3.7	5.6	pCi/L
North Pond	4000	ml	Alpha	1.8	2.5	4.2	pCi/L
			Beta	6.6	3.4	5.1	pCi/L
Upstream	4000	ml	Alpha	0.4	0.6	1.1	pCi/L
			Beta	2.4	1.2	1.9	pCi/L
Downstream (DS -1)	4000	ml	Alpha	1.1	0.8	1.1	pCi/L
			Beta	2.7	1.4	2.1	pCi/L

Attachment A provides the location of the groundwater monitoring wells. Attachment B provides the analytical report from STL and the sample chain-of-custody forms and the analytical report for the QA sample sent to GEL. Attachment C provides the well sampling logs.

Table 3 compares gross alpha and gross beta results from each Whittaker site groundwater sampling event dating back to September 2001. These data do not include duplicate samples analyzed at a QA laboratory. Table 4 provides the depths to groundwater in MW-1 through MW-10 from May 2000 through September 2006.

**TABLE 3  
GROUNDWATER CONCENTRATION COMPARISONS  
UNFILTERED SAMPLES**

Well Number	September 2001		August 2002		October 2003		September 2004		November 2005		September 2006	
	Gross alpha	Gross alpha	Gross alpha	Gross alpha	Gross alpha	Gross alpha	Gross alpha	Gross beta	Gross alpha	Gross beta	Gross alpha	Gross beta
MW-1	<MDA	3.2	<MDA	<MDA	<MDA	<MDA	<MDA	5.6	<MDA	<MDA	<MDA	<MDA
MW-2	<MDA	6.5	4.9	<MDA	3.5	3.5	4.9	9.3	<MDA	15.3	<MDA	4.1
MW-3	<MDA	<MDA	2.5	<MDA	<MDA	<MDA	2.5	<MDA	<MDA	<MDA	<MDA	12.9
MW-4	11	4.6	8.5	<MDA	5.6	5.6	8.5	9.5	<MDA	6.4	3.7	6.3
MW-5	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	7.7	<MDA	4.6	<MDA	9.8
MW-6	<MDA	5.2	5.4	6.0	<MDA	<MDA	5.4	6.7	6.0	6.5	<MDA	13.8
MW-7	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	4.4	<MDA	5.5	<MDA	6.0
MW-8	6.6	5.2	5.3	<MDA	<MDA	<MDA	5.3	22	<MDA	21.4	<MDA	20.4
MW-9	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	7.7
MW-10	11	<MDA	6.6	9.6	<MDA	<MDA	6.6	212	9.6	30.1	<MDA	31.8

**TABLE 4  
DEPTH TO GROUNDWATER IN MONITORING WELLS**

Well Number	Depth to Groundwater (feet) <sup>a</sup>						Δ Feet <sup>b</sup>
	September 2001	August 2002	October 2003	September 2004	November 2005	September 2006	
MW-1	6.63	6.91	4.89	5.35	5.40	3.92	1.48
MW-2	11.44	11.36	9.32	9.88	10.78	9.45	1.33
MW-3	1.90	1.86	0.69	0.73	1.23	0	1.23
MW-4	16.70	16.79	15.33	15.53	16.24	14.8	1.44
MW-5	8.20	8.32	6.16	6.09	6.79	5.45	1.34
MW-6	20.70	20.83	20.22	20.34	20.51	19.96	0.55
MW-7	4.35	4.53	4.31	4.37	4.24	4.2	0.04
MW-8	19.86	19.60	18.65	18.22	17.26	18.16	-0.9
MW-9	0.05	0	0.1	0	0	0	0
MW-10	22.45	22.33	20.50	20.51	21.11	19.9	1.21
<b>Average 1-year change in water level</b>							<b>+ 0.77</b>

Note:

<sup>a</sup> Measured from the top of the PVC well casing.

<sup>b</sup> Change in water level change from November 2005 to September 2006.

### **ATTACHMENTS**

The following supporting documentation is provided as attachments to this report.

- A Site Well Location Map
- B STL and GEL Water Analysis Report and Chain-of-Custody Forms
- C *EnergySolutions* Well Sampling Field Logs



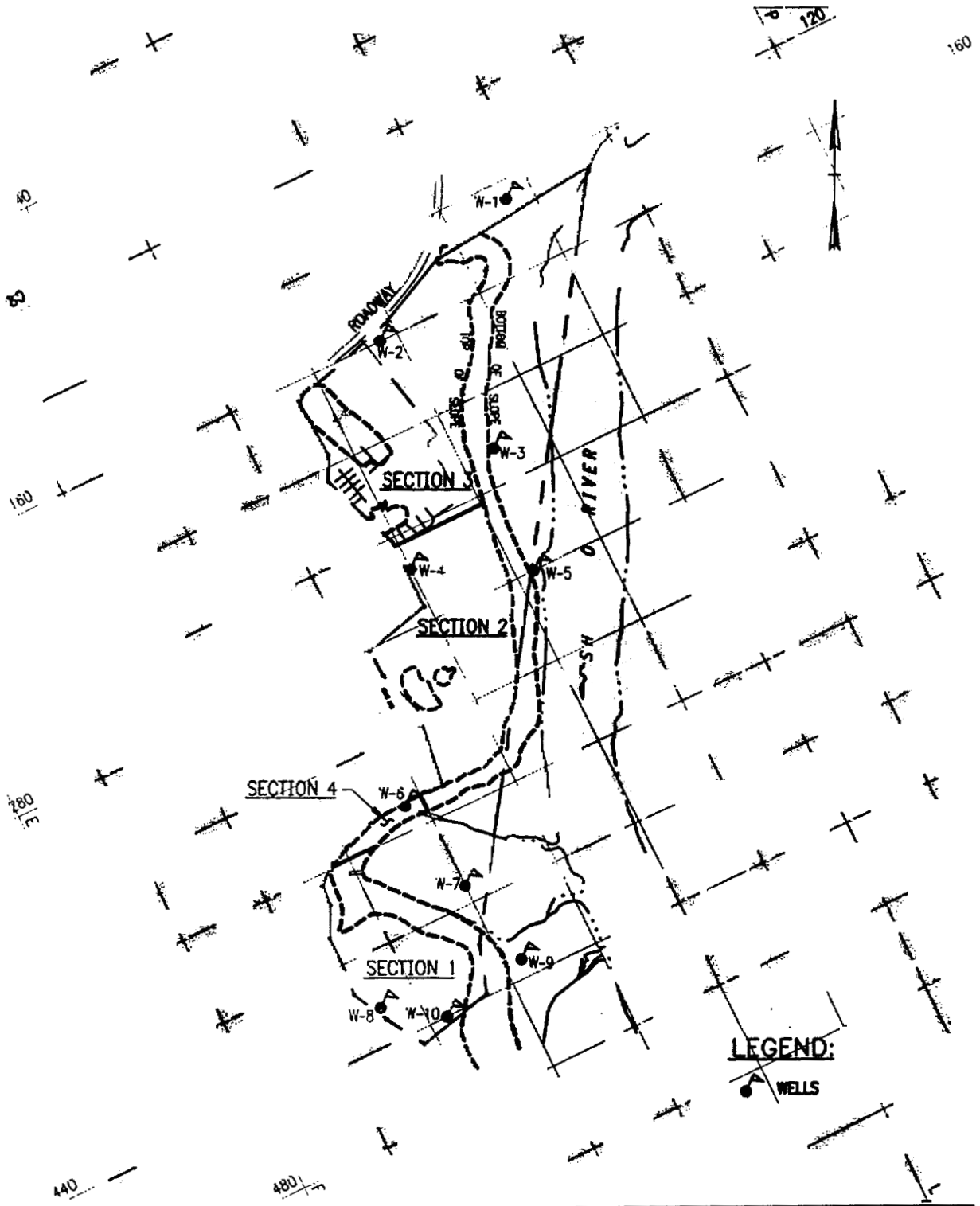
Document No. 82A9103  
Revision No. 3  
Addendum No. 11

**ATTACHMENT A**

**Site Well Location Map**

**(1 page)**







Document No. 82A9103

Revision No. 3

Addendum No. 11

**ATTACHMENT B**

**STL Water Analysis Report and Chain of Custody Forms**  
**GEL Water Analysis Report (MW-9) and Chain of Custody Forms**

**(17 pages)**



**STL**

STL St. Louis  
13715 Rider Trail North  
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757  
www.stl-inc.com

**ANALYTICAL REPORT**

PROJECT NO. 23535

Whittaker, Transfer, PA

Lot #: F6I220347

Kevin Taylor

Energy Solutions, LLC  
17 College Street  
Suite D  
Greenville,, SC 29601

SEVERN TRENT LABORATORIES, INC.

FOR:

Terry Romanko  
Project Manager

September 27, 2006

Leaders in Environmental Testing

Severn Trent Laboratories, Inc.

Case Narrative  
LOT NUMBER: F6I220347

This report contains the analytical results for the 14 samples received under chain of custody by STL St. Louis on September 22, 2006. These samples are associated with your Whittaker, Transfer, PA project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by STL St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

**Observations/Nonconformances**

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

**Gross Alpha/Beta Method: 900.0 MOD**

The gross alpha/beta reporting limit was not met due to a reduction of sample size attributed to the sample's high residual mass. The analytical results are reported.

**Affected Samples:**

F6I220347 (1): MW-3	F6I220347 (8): MW-7
F6I220347 (4): MW-8	F6I220347 (9): MW-9
F6I220347 (5): MW-10	F6I220347 (10): MW-1
F6I220347 (6): MW-2-2	F6I220347 (11): SOUTH POND
F6I220347 (7): MW-6	F6I220347 (12): NORTH POND

# METHODS SUMMARY

F6I220347

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Gross Alpha/Beta EPA 900	EPA 900.0 MOD	EPA 900.0

**References:**

EPA "EASTERN ENVIRONMENTAL RADIATION FACILITY RADIOCHEMISTRY  
PROCEDURES MANUAL" US EPA EPA 520/5-84-006 AUGUST 1984

**SAMPLE SUMMARY**

F6I220347

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
JEW0W	001	MW-3	09/20/06	10:33
JEW06	002	MW-4	09/20/06	10:38
JEW09	003	MW-5	09/20/06	12:38
JEW1D	004	MW-8	09/20/06	14:49
JEW1H	005	MW-10	09/20/06	15:35
JEW1J	006	MW-2-2	09/20/06	16:41
JEW1M	007	MW-6	09/21/06	08:36
JEW1Q	008	MW-7	09/21/06	09:55
JEW1R	009	MW-9	09/21/06	10:51
JEW1V	010	MW-1	09/21/06	13:35
JEW1W	011	SOUTH POND	09/21/06	11:30
JEW10	012	NORTH POND	09/21/06	11:50
JEW12	013	UPSTREAM WB	09/21/06	14:20
JEW13	014	DS 1	09/21/06	14:35

**NOTE (S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

## Energy Solutions

Client Sample ID: MW-3

## Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-001  
 Work Order: JEWOW  
 Matrix: WATER

Date Collected: 09/20/06 1033  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				pCi/L		Batch # 6266102	Yld %
Gross Alpha	3.2	U	2.4	3.0	3.4	09/23/06	09/26/06
Gross Beta	12.9		3.4	4.0	4.4	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

## Energy Solutions

Client Sample ID: MW-3 DUP

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-001X  
 Work Order: JEWOW  
 Matrix: WATER

Date Collected: 09/20/06 1033  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
Gross Alpha/Beta EPA 900				pCi/L		Batch # 6266102	Yld %
Gross Alpha	2.5	U	2.2	3.0	3.3	09/23/06	09/26/06
Gross Beta	8.5		3.1	4.0	4.4	09/23/06	09/26/06

## NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.



**Energy Solutions**

**Client Sample ID: MW-4**

**Severn Trent Laboratories - Radiochemistry**

Lab Sample ID: F6I220347-002  
 Work Order: JEW06  
 Matrix: WATER

Date Collected: 09/20/06 1038  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				pCi/L		Batch # 6266102	Yld %
Gross Alpha	3.7		1.7	3.0	1.9	09/23/06	09/26/06
Gross Beta	6.3		1.6	4.0	2.1	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.  
 MDC is determined by instrument performance only.  
 Bold results are greater than the MDC

Energy Solutions

Client Sample ID: MW-5

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-003  
 Work Order: JEW09  
 Matrix: WATER

Date Collected: 09/20/06 1238  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				<b>pCi/L</b>	<b>Batch # 6266102</b>		<b>Yld %</b>
Gross Alpha	1.3	U	1.6	3.0	2.6	09/23/06	09/26/06
Gross Beta	9.8		2.7	4.0	3.6	09/23/06	09/26/06

NOTE(S)

Data are incomplete without the case narrative.  
 MDC is determined by instrument performance only.  
 Bold results are greater than the MDC  
 U Result is less than the sample detection limit.

**Energy Solutions**  
**Client Sample ID: MW-8**

**Severn Trent Laboratories - Radiochemistry**

Lab Sample ID: F6I220347-004  
 Work Order: JEW1D  
 Matrix: WATER

Date Collected: 09/20/06 1449  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				<b>pCi/L</b>		<b>Batch # 6266102</b>	<b>Yld %</b>
Gross Alpha	3.5	U	3.5	3.0	5.2	09/23/06	09/26/06
Gross Beta	20.4		5.7	4.0	7.5	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

Energy Solutions

Client Sample ID: MW-10

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-005  
 Work Order: JEW1H  
 Matrix: WATER

Date Collected: 09/20/06 1535  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				pCi/L		Batch # 6266102	Yld %
Gross Alpha	7.6	U	5.7	3.0	8.0	09/23/06	09/26/06
Gross Beta	31.8		7.6	4.0	9.4	09/23/06	09/26/06

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

## Energy Solutions

Client Sample ID: MW-2-2

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-006

Date Collected: 09/20/06 1641

Work Order: JEW1J

Date Received: 09/22/06 0915

Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				<b>pCi/L</b>		<b>Batch # 6266102</b>	<b>Yld %</b>
Gross Alpha	2.0	U	2.2	3.0	3.5	09/23/06	09/26/06
Gross Beta	4.1		2.3	4.0	3.5	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

## Energy Solutions

Client Sample ID: MW-6

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-007  
 Work Order: JEW1M  
 Matrix: WATER

Date Collected: 09/21/06 0836  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				<b>pCi/L</b>		<b>Batch # 6266102</b>	<b>Yld %</b>
Gross Alpha	4.7	U	4.4	3.0	6.7	09/23/06	09/26/06
Gross Beta	13.8		4.7	4.0	6.6	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

## Energy Solutions

Client Sample ID: MW-7

## Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-008

Date Collected: 09/21/06 0955

Work Order: JEW10

Date Received: 09/22/06 0915

Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				pCi/L		Batch # 6266102	Yld %
Gross Alpha	2.5	U	2.1	3.0	3.1	09/23/06	09/26/06
Gross Beta	6.0		2.6	4.0	3.9	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

Energy Solutions

Client Sample ID: MW-9

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-009      Date Collected: 09/21/06 1051  
 Work Order: JEW1R      Date Received: 09/22/06 0915  
 Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				pCi/L		Batch # 6266102	Yld %
Gross Alpha	-1.6	U	2.8	3.0	6.4	09/23/06	09/26/06
Gross Beta	7.7		4.1	4.0	6.3	09/23/06	09/26/06

NOTE(S)

Data are incomplete without the case narrative.  
 MDC is determined by instrument performance only.  
 Bold results are greater than the MDC  
 U Result is less than the sample detection limit.



## Energy Solutions

Client Sample ID: MW-1

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-010  
 Work Order: JEW1V  
 Matrix: WATER

Date Collected: 09/21/06 1335  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				<b>pCi/L</b>		<b>Batch # 6266102</b>	<b>Yld %</b>
Gross Alpha	2.4	U	2.6	3.0	4.1	09/23/06	09/26/06
Gross Beta	4.3	U	3.3	4.0	5.3	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

## Energy Solutions

Client Sample ID: SOUTH POND

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-011  
 Work Order: JEW1W  
 Matrix: WATER

Date Collected: 09/21/06 1130  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
Gross Alpha/Beta EPA 900				pCi/L		Batch # 6266102	Yld %
Gross Alpha	3.7	U	4.4	3.0	7.1	09/23/06	09/26/06
Gross Beta	7.4		3.7	4.0	5.6	09/23/06	09/26/06

## NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

Energy Solutions

Client Sample ID: NORTH POND

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-012  
 Work Order: JEW10  
 Matrix: WATER

Date Collected: 09/21/06 1150  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
Gross Alpha/Beta EPA 900				pCi/L		Batch # 6266102	Yld %
Gross Alpha	1.8	U	2.5	3.0	4.2	09/23/06	09/26/06
Gross Beta	6.6		3.4	4.0	5.1	09/23/06	09/26/06

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

U Result is less than the sample detection limit.

## Energy Solutions

Client Sample ID: UPSTREAM WB

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-013  
 Work Order: JEW12  
 Matrix: WATER

Date Collected: 09/21/06 1420  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
<b>Gross Alpha/Beta EPA 900</b>				pCi/L		<b>Batch # 6266102</b>	<b>Yld %</b>
Gross Alpha	0.36	U	0.63	3.00	1.1	09/23/06	09/26/06
Gross Beta	2.4	J	1.2	4.0	1.9	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

- J Result is greater than sample detection limit but less than stated reporting limit.  
 U Result is less than the sample detection limit.

## Energy Solutions

Client Sample ID: DS 1

Severn Trent Laboratories - Radiochemistry

Lab Sample ID: F6I220347-014  
 Work Order: JEW13  
 Matrix: WATER

Date Collected: 09/21/06 1435  
 Date Received: 09/22/06 0915

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Analysis Date
Gross Alpha/Beta EPA 900				pCi/L		Batch # 6266102	Yld %
Gross Alpha	1.08	U	0.79	3.00	1.1	09/23/06	09/26/06
Gross Beta	2.7	J	1.4	4.0	2.1	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC

J Result is greater than sample detection limit but less than stated reporting limit.

U Result is less than the sample detection limit.

## METHOD BLANK REPORT

## Severn Trent Laboratories - Radiochemistry

Client Lot ID: F6I220347  
 Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 $\sigma$ +/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
<b>Gross Alpha/Beta EPA 900</b>			<b>pCi/L</b>	<b>Batch #</b>	<b>6266102</b>	<b>Yld %</b>	<b>F6I230000-102B</b>
Gross Alpha	0.39	U	0.56	2.00	0.92	09/23/06	09/26/06
Gross Beta	1.4	U	1.2	4.0	1.9	09/23/06	09/26/06

**NOTE(S)**

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Severn Trent Laboratories - Radiochemistry

Client Lot ID: F6I220347  
 Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 $\sigma$ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Gross Alpha/Beta EPA 900			pCi/L	900.0 MOD			F6I230000-102C
Gross Beta	92.4	84.6	9.0	1.8		92	(77 - 125)
	Batch #:	6266102			Analysis Date:	09/26/06	
Gross Alpha/Beta EPA 900			pCi/L	900.0 MOD			F6I230000-102C
Gross Alpha	51.4	57.5	7.0	1.1		112	(55 - 113)
	Batch #:	6266102			Analysis Date:	09/26/06	

NOTE(S)

MDC is determined by instrument performance only  
 Calculations are performed before rounding to avoid round-off error in calculated results

## MATRIX SPIKE REPORT

## Severn Trent Laboratories - Radiochemistry

Client Lot Id: F6I220347  
 Matrix: WATER

Date Sampled: 09/20/06  
 Date Received: 09/22/06

Parameter	Spike Amount	Spike Result	Total Uncert. (2σ +/-)	Spike Yld.	Sample Result	Total Uncert. (2σ +/-)	QC Sample ID		QC Control Limits
							%YLD	%REC	
Gross Alpha/Beta EPA 900			pCi/L	900.0 MOD			F6I220347-001		
Gross Beta	215	228	24		12.9	3.4		100	(26 - 150)
	Batch #:	6266102			Analysis Date:	09/26/06			
Gross Alpha/Beta EPA 900			pCi/L	900.0 MOD			F6I220347-001		
Gross Alpha	120	93	13		3.2	2.4		75	(32 - 150)
	Batch #:	6266102			Analysis Date:	09/26/06			

**NOTE(S)**

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off errors in calculated results.



## DUPLICATE EVALUATION REPORT

## Severn Trent Laboratories - Radiochemistry

Client Lot ID: F6I220347  
 Matrix: WATER

Date Sampled: 09/20/06  
 Date Received: 09/22/06

Parameter	SAMPLE Result	Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2σ +/-)	% Yld	QC Sample ID	
							Precision	
Gross Alpha/Beta	EPA 900		pCi/L	900.0 MOD			F6I220347-001	
Gross Alpha	3.2 U	2.4		2.5 U	2.2		23	%RPD
Gross Beta	12.9	3.4		8.5	3.1		41	%RPD
	Batch #:	6266102 (Sample)		6266102 (Duplicate)				

## NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

LOT# F6I220347

STL ST. LOUIS

Chain of Custody Record

SEVERN TRENT STL Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client: Energy Solutions, Project Manager: R. McPeak/K. Taylor, Date: 9/21/06, Chain of Custody Number: 320394. Address: 143 West St., Telephone Number: 801-303-1092. City: New Milford, CT, Zip Code: 06776. Site Contact: F. Toomey, Lab Contact: F. Hereman. Project Name and Location: Whittaker, Transfer PA. 16154.

\* Samples in 3 coolers
Special Instructions/ Conditions of Receipt

Table with columns: Sample I.D. No. and Description, Date, Time, Matrix (Air, Aerosol, Sed., Soil), Containers & Preservatives (Unpres., H2SO4, HNO3, HCl, MeOH, ZnAc2, NaOH), Gross alpha/beta, and Special Instructions. Rows include MW-3 through MW-1, South Pond, and North Pond.

Possible Hazard Identification: [ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown. Sample Disposal: [ ] Return To Client [X] Disposal By Lab [ ] Archive For \_\_\_\_\_ Months. (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: [ ] 24 Hours [ ] 48 Hours [ ] 7 Days [ ] 14 Days [ ] 21 Days [ ] Other: Standard

QC Requirements (Specify)

Relinquished/Received table with columns: Relinquished By, Date, Time, Received By, Date, Time. Row 1: Robert E. McPeak, 9/21/06, 0915.

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

LOT# F6I220347

STL ST. LOUIS

Chain of Custody Record



Sewern Trent Laboratories, Inc.

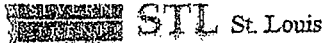
STL-4124 (0901)			Project Manager <b>R. McPeak / K. Taylor</b>			Date <b>9/21/06</b>		Chain of Custody Number <b>320395</b>	
Client <b>Energy Solutions</b>			Telephone Number (Area Code)/Fax Number <b>801-303-1092</b>			Lab Number		Page <b>2*</b> of <b>2</b>	
Address <b>143 West St.</b>			Site Contact <b>J. Joumey P. Harkman</b>			Lab Contact		Analysis (Attach list if more space is needed)	
City <b>New Milford</b>	State <b>CT</b>	Zip Code <b>06776</b>	Carrier/Waybill Number					* Samples in <b>3</b> <b>Coolers</b>	
Project Name and Location (State) <b>Whittaker Transfer, PA 16154</b>			Contract/Purchase Order/Quote No.					Special Instructions/ Conditions of Receipt	

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix				Containers & Preservatives						Gross alpha/beta									
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc2								NaOH		
<b>Upstream NB</b>	<b>9/21/06</b>	<b>2:20</b>		✓										X						4LD	See note on Sht 1 of 2	
<b>DS 1</b>	<b>9/21/06</b>	<b>2:35</b>		✓										X						4XLD		

Possible Hazard Identification			Sample Disposal			(A fee may be assessed if samples are retained longer than 1 month)		
<input type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B	<input type="checkbox"/> Unknown	<input type="checkbox"/> Return To Client	<input checked="" type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For _____ Months	
Turn Around Time Required			QC Requirements (Specify)					
<input type="checkbox"/> 24 Hours	<input type="checkbox"/> 48 Hours	<input type="checkbox"/> 7 Days	<input type="checkbox"/> 14 Days	<input type="checkbox"/> 21 Days	<input type="checkbox"/> Other <b>Standard</b>			
1. Relinquished By		Date	Time	1. Received By		Date	Time	
<b>Robert E. McPeak</b>		<b>9/21/06</b>		<b>R - P</b>		<b>9/22/06</b>	<b>0915</b>	
2. Relinquished By		Date	Time	2. Received By		Date	Time	
3. Relinquished By		Date	Time	3. Received By		Date	Time	
Comments								

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

25 OF 26



Lot #(s): F6I220347  
 \_\_\_\_\_  
 \_\_\_\_\_

- 4357 -

Client: Energy Solutions COC/RFA No: 520394, 520395 Date: 9/22/06  
 Quote No: 709501 Initiated By: BA Time: 0915

Shipping Information

Shipper Name: FE  
 Shipping # (s):\*  
 1. 8571 1504 3190 6. \_\_\_\_\_  
 2. 3180 7. \_\_\_\_\_  
 3. 3179 8. \_\_\_\_\_  
 4. \_\_\_\_\_ 9. \_\_\_\_\_  
 5. \_\_\_\_\_ 10. \_\_\_\_\_

Multiple Packages (Y) N N/A  
 Sample Temperature (s):\*\*  
 1. ambient 6. \_\_\_\_\_  
 2. L 7. \_\_\_\_\_  
 3. \_\_\_\_\_ 8. \_\_\_\_\_  
 4. \_\_\_\_\_ 9. \_\_\_\_\_  
 5. \_\_\_\_\_ 10. \_\_\_\_\_

\*Numbered shipping lines correspond to Numbered Sample Temp lines

\*\*Sample must be received at 4°C ± 2°C. If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	<u>(Y)</u> <u>(N)</u>	Was sample received broken?	8.	<u>(Y)</u> N	Sample received with Chain of Custody?
2.	<u>(Y)</u> N N/A	Was sample received with proper pH <sup>1</sup> ? (If not, make note below)	9.	<u>(Y)</u> N	Chain of Custody matches sample ID's on container(s)?
3.	Y N	If N/A-Was pH taken by original STL Lab?	10.	<u>(Y)</u> N	Are there custody seals present on cooler?
4.	<u>(Y)</u> N	Sample received in proper containers?	11.	Y <u>(N)</u> N/A	Do custody seals on cooler appear to be tampered with?
5.	<u>(Y)</u> N	Sample volume sufficient for analysis?	12.	Y <u>(N)</u>	Are there custody seals present on bottles?
6.	Y N <u>(N/A)</u>	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)	13.	Y N <u>(N/A)</u>	Do custody seals on bottles appear to be tampered with?
7.	<u>(Y)</u> N	Were contents of the cooler frisked after opening?	14.	Y N	Was Internal COC/Workshare received?

<sup>1</sup> For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Corrective Action:

Client Contact Name: \_\_\_\_\_ Informed by: \_\_\_\_\_  
 Sample(s) processed "as is"  
 Sample(s) on hold until: \_\_\_\_\_ If released, notify: \_\_\_\_\_  
 Project Management Review: T. [Signature] Date: 9/25/06

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEMS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.



**GENERAL ENGINEERING LABORATORIES, LLC**  
a Member of THE GEL GROUP, INC.  
*Meeting Today's Needs with a Vision for Tomorrow*

October 12, 2006

Mr. Robert E. McPeak, Jr.  
ENERGYSOLUTIONS, LLC  
143 West Street  
New Milford, Connecticut 06776

Re: Whitaker, PA Site  
Work Order: 172493

Dear Mr. Jr.:

General Engineering Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on September 22, 2006. This data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4433.

Sincerely,



Cheryl Diffy  
Project Manager

Enclosures

Page: 1 of 1  
 Project #: \_\_\_\_\_  
 GEL Quote #: \_\_\_\_\_  
 COC Number <sup>(1)</sup>: \_\_\_\_\_  
 PO Number: \_\_\_\_\_

## GEL Chain of Custody and Analytical Request

General Engineering Laboratories, LLC  
 2040 Savage Road  
 Charleston, SC 29407  
 Phone: (843) 556-8171  
 Fax: (843) 766-1178

172 493/

Client Name: *Energy Solutions* Phone #: *801-303-1092*

Sample Analysis Requested <sup>(5)</sup> (Fill in the number of containers for each test)

Project/Site Name: *Whittaker Trander, PA* Fax #: *860-355-3295*

Should this sample be considered:

Radioactive  
TSCA Regulated

NI																			
----	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

<- Preservative Type (6)

Address: *143 West St. New Milford, CT 06776*

Collected by: *R. McPeak* Send Results To: *R. McPeak/K. Taylor*

**Comments**  
 Note: extra sample is required for sample specific QC

Sample ID	Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code <sup>(3)</sup>	Field Filtered <sup>(3)</sup>	Sample Matrix <sup>(4)</sup>	Radioactive	TSCA Regulated	Total number of containers																		
<i>MW-9 GEL</i>	<i>9/21/06</i>	<i>11:00</i>	<i>FD</i>	<i>N*</i>	<i>GW</i>	<i>N</i>		<i>1</i>	<input checked="" type="checkbox"/>																	

TAT Requested Normal: Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

### Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
<i>Robert E. McPeak</i>	<i>9/21/06</i>		<i>K. Taylor</i>	<i>9/22/06</i>	<i>0930</i>

### Sample Shipping and Delivery Details

GEL PM:	
Method of Shipment:	Date Shipped:
Airbill #:	
Airbill #:	

1.) Chain of Custody Number = Client Determined  
 2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, M SD = Matrix Spike Duplicate Sample, G = Grab, C = Composite  
 3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.  
 4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal  
 5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B , 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).  
 6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

\* Low Flow      WHITE = LABORATORY      YELLOW = FILE      PINK = CLIENT

*For Lab Receiving Use Only*

Custody Seal Intact?  
 YES *ND* NO

Cooler Temp:  
*22* C



# SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: <u>Energy Solutions</u>				SDG/ARCOC/Work Order: <u>172493</u>			
Date Received: <u>9/22/06</u>				PM(A) Review (ensure non-conforming items are resolved prior to signing):			
Received By: <u>(PW)</u>							
Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)			
1 Shipping containers received intact and sealed?	/			Circle Applicable: seals broken    damaged container    leaking container    other (describe)			
2 Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		/		Circle Coolant #    ice bags    blue ice    dry ice <u>none</u> other (describe)  <u>20c</u>			
3 Chain of custody documents included with shipment?	/						
4 Sample containers intact and sealed?	/			Circle Applicable: seals broken    damaged container    leaking container    other (describe)			
5 Samples requiring chemical preservation at proper pH?	/			Sample ID's, containers affected and observed pH:			
6 VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:			
7 Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			/				
8 Samples received within holding time?	/			Id's and tests affected:			
9 Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:			
10 Date & time on COC match date & time on bottles?	/			Sample ID's affected:			
11 Number of containers received match number indicated on COC?	/			Sample ID's affected:			
12 COC form is properly signed in relinquished/received sections?	/						
14 Air Bill ,Tracking #'s, & Additional Comments	<u>8571 1504 3168</u>						
Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.			
A Radiological Classification?	/			Maximum Counts Observed*: <u>cpm 20</u>			
B PCB Regulated?	/			Comments:			
C Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	/			Hazard Class Shipped: UN#:			
PM (or PMA) review of Hazard classification:				Initials <u>CD</u>		Date: <u>9/23/06</u>	

**GENERAL ENGINEERING LABORATORIES, LLC**

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Certificate of Analysis Report  
for**

ENRG001 Energysolutions

Client SDG: 172493 GEL Work Order: 172493

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- ND The analyte concentration is not detected above the detection limit.

The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Cheryl Duffy.

Reviewed by





# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ENERGYSOLUTIONS, LLC  
Address : 143 West Street  
New Milford, Connecticut 06776

Report Date: October 12, 2006

Contact: Mr. Robert E. McPeak, Jr.  
Project: **Whitaker, PA Site**

Client Sample ID: MW-9 GEL  
Sample ID: 172493001  
Matrix: Ground Water  
Collect Date: 21-SEP-06 11:00  
Receive Date: 22-SEP-06  
Collector: Client

Project: ENRG00102  
Client ID: ENRG001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gas Flow Proportional Counting</b>											
<i>GFPC, Gross A/B, liquid</i>											
Alpha	U	1.73	+/-1.84	2.95	5.00	pCi/L		JXS4	10/11/06	1227	573884 1
Beta		2.18	+/-1.41	2.15	5.00	pCi/L					

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 900.0	

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: October 12, 2006

Page 1 of 2

ENERGYSOLUTIONS, LLC

143 West Street

New Milford, Connecticut

Contact: Mr. Robert E. McPeak, Jr.

Workorder: 172493

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	573884										
QC1201195352	172606003	DUP									
Alpha		70.5		79.2	pCi/L	12		(0%-20%)	JXS4	10/11/06	13:58
		+/-6.21		+/-6.97							
Beta		45.8		44.2	pCi/L	4		(0%-20%)			
		+/-2.96		+/-3.23							
QC1201195354	LCS										
Alpha	71.9			89.4	pCi/L		124	(75%-125%)		10/11/06	13:59
				+/-13.5							
Beta	209			203	pCi/L		97	(75%-125%)			
				+/-13.4							
QC1201195351	MB										
Alpha			U	0.424	pCi/L					10/11/06	13:58
				+/-0.975							
Beta			U	0.398	pCi/L						
				+/-0.713							
QC1201195353	172606003	MS									
Alpha	108	70.5		84.7	pCi/L		13*	(75%-125%)		10/12/06	12:05
		+/-6.21		+/-14.6							
Beta	313	45.8		291	pCi/L		79	(75%-125%)			
		+/-2.96		+/-14.1							
QC1201195355	172606003	MSD									
Alpha	108	70.5		87.6	pCi/L	3	16*	(0%-20%)		10/12/06	12:06
		+/-6.21		+/-14.7							
Beta	313	45.8		312	pCi/L	7	85	(0%-20%)			
		+/-2.96		+/-14.6							

**Notes:**

The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B Target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- H Analytical holding time was exceeded
- J Value is estimated
- N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
- R Sample results are rejected

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 172493

Page 2 of 2

<u>Parmname</u>	<u>NOM</u>	<u>Sample</u>	<u>Qual</u>	<u>QC</u>	<u>Units</u>	<u>RPD%</u>	<u>REC%</u>	<u>Range</u>	<u>Anlst</u>	<u>Date</u>	<u>Time</u>
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.										
UI	Gamma Spectroscopy--Uncertain identification										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Y	QC Samples were not spiked with this compound										
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL										
h	Preparation or preservation holding time was exceeded										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

**List of current GEL Certifications as of 12 October 2006**

<b>State</b>	<b>Certification</b>
Alaska	UST-062
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California	01151CA
Colorado	GenEngLabs
Connecticut	PH-0169
Dept. of Navy	NFESC 413
EPA	WG-15J
Florida/NELAP	E87156
Georgia	E87156 (FL/NELAP)
Hawaii	N/A
Idaho	N/A
Illinois	200029
Indiana	C-SC-01
Kansas	E-10332
Kentucky	90129
Louisiana	03046
Maryland	270
Massachusetts	M-SC012
Michigan	9903
Nevada	SC12
New Jersey	SC002
New Mexico	FL NELAP E87156
New York	11501
North Carolina	233
North Carolina Drinking W	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania	68-00485
South Carolina	10120001/10585001/10120002
Tennessee	02934
Texas	TX213-2006A
Texas NELAP	T104704235-06-TX
U.S. Dept. of Agriculture	S-52597
US Army Corps of Engineer	N/A
Utah	8037697376 GEL
Vermont	VT87156
Virginia	00151
Washington	C1641



Document No. 82A9103  
Revision No. 3  
Addendum No. 11

**ATTACHMENT C**

**EnergySolutions Well Sampling Field Logs**

**(10 pages)**

# MW-1

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
 Project Number: 137003

Field Staff: R. McPeak  
 J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-1	--	3.92	4.05	4.22		13.0	18.36	18.46	9/21/06	1:10	1:17	2:00

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate gpm	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	8.60	917.61	10	13.6	Steel/PVC	2	907.75	926.21	0.04	9/21/06	1:35

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
1:17	4.05	7.85	16.7	0.723	6.45	240
1:20	4.15	6.99	16.1	0.720	2.25	290
1:23	4.18	6.99	16.0	0.715	1.73	270
1:26	4.18	6.98	16.1	0.712	1.52	240
1:29	4.18	6.94	16.2	0.712	1.45	190
1:32	4.22	6.92	15.9	0.716	1.40	160
1:35	4.22	6.90	15.8	0.716	1.37	150

**Notes:** The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO

Readings taken at 3 minute intervals.

**Comments:**

Prepared by: R. McPeak  
 Date: 10/17/06  
 Reviewed by: P. Malumphy  
 Date: 10/17/06

# MW-2

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
 Project Number: 137003

Field Staff: R. McPeak  
 J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-2	-	9.45	9.44	10.55	-	19	26.66	26.66	9/20/06	4:15	4:22	5:10

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	11.84	936.37	15	19.3	Steel/PVC	2	921.55	948.21	0.033	9/20/06	4:22

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
4:22	9.90	7.31	13.7	0.895	4.09	100
4:26	10.15	7.33	13.9	0.895	1.78	120
4:29	10.25	7.33	13.9	0.885	1.54	130
4:32	10.30	7.33	13.8	0.888	1.49	160
4:35	10.40	7.33	13.9	0.887	1.31	160
4:38	10.50	7.33	14.0	0.883	1.26	160
4:41	10.55	7.32	14.0	0.896	1.26	170

**Notes:** The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO  
 \* Unable to achieve minimum drawdown of <0.3 feet at these wells in accordance with work plan submitted to the Pennsylvania Department of Environmental Protection. Three well volumes were removed prior to sampling.

**Comments:**

Readings taken at 3 minute intervals.

Prepared by: R. McPeak  
 Date: 10/17/06  
 Reviewed by: P. Malumphy  
 Date: 10/17/06

# MW-3

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
 Project Number: 137003

Field Staff: R. McPeak  
 J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-3	-	0.00	0.50	0.50	--	8.00	16.44	16.44	9/20/06	10:20	10:25	10:48

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	6.44	920.55	10	11.4	Steel/PVC	2	910.55	926.99	0.07	9/20/06	10:34

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
10:25	0.50	6.86	12.9	0.732	1.37	12
10:28	0.50	6.87	12.9	0.732	1.10	14
10:31	0.50	6.88	12.9	0.732	1.00	22
10:34	0.50	6.88	12.9	0.731	0.96	23

Notes: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO

Comments:

Prepared by: R. McPeak  
 Date: 10/17/06  
 Reviewed by: P. Malumphy  
 Date: 10/17/06

Readings taken at 3 minute intervals.



# MW-4

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
 Project Number: 137003

Field Staff: R. McPeak  
 J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-4	-	14.8	14.9	15.1	-	20	32.5	31.7	9/20/06	11:10	11:12	11:46

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	17.50	930.20	15	25.0	Steel/PVC	2	916.00	947.70	0.125	9/20/06	11:38

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
11:12	14.90	8.22	15.4	0.382	2.82	154
11:15	14.95	8.23	15.2	0.409	1.42	150
11:18	14.95	8.17	15.2	0.422	1.10	120
11:21	15.00	8.11	15.0	0.431	0.96	80
11:24	15.00	8.06	14.8	0.432	0.92	72
11:29	15.00	7.99	14.7	0.459	0.87	57
11:32	15.10	7.86	14.6	0.485	0.86	62
11:35	15.10	7.81	14.6	0.508	0.82	75
11:38	15.10	7.78	14.7	0.525	0.80	79

Notes: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO

Readings taken at 3 minute intervals.

Comments:

Prepared by: R. McPeak  
 Date: 10/17/06  
 Reviewed by: P. Malumphy  
 Date: 10/17/06

# MW-5

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
Project Number: 137003

Field Staff: R. McPeak  
J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-5	--	5.45	5.56	5.56	--	14.8	22.29	22.32	9/20/06	12:15	12:20	12:58

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	7.29	920.36	15	14.8	Steel/PVC	2	905.04	927.36	0.05	9/20/06	12:38

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
12:20	5.56	7.61	14.5	0.697	2.97	94
12:23	5.56	7.45	14.8	0.698	1.72	78
12:26	5.56	7.40	15.0	0.697	1.73	76
12:29	5.56	7.30	15.3	0.692	3.64	42
12:32	5.56	7.25	15.4	0.693	4.87	35
12:35	5.56	7.23	15.5	0.695	5.17	37
12:38	5.56	7.21	15.4	0.694	5.18	47

Notes: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO

Readings taken at 3 minute intervals.

Comments:

Prepared by: R. McPeak  
Date: 10/17/06  
Reviewed by: P. Malumphy  
Date: 10/17/06

# MW-6

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
 Project Number: 137003

Field Staff: R. McPeak  
J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-6	-	19.96	19.96	20.25	-	28.7	31.7	31.33	9/21/06	8:20	8:24	9:07

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	16.70	931.33	15	24.2	Steel/PVC	2	916.7	948.03	0.033	9/21/06	8:36

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
8:24	20.10	6.47	13.6	1.57	10.38	510
8:27	20.10	6.77	13.8	1.58	10.08	460
8:30	20.18	6.84	13.9	1.59	9.94	460
8:33	20.20	6.86	13.9	1.59	9.91	450
8:36	20.25	6.87	13.9	1.60	9.91	440

**Notes:** The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO

Readings taken at 3 minute intervals.

**Comments:**

Prepared by: R. McPeak  
 Date: 10/17/06  
 Reviewed by: P. Malumphy  
 Date: 10/17/06

# MW-7

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
 Project Number: 137003

Field Staff: R. McPeak  
 J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-7	--	4.2	4.2	4.28	--	9.6	14.6	14.2	9/21/06	9:30	9:32	10:10

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	4.60	923.80	10	9.6	Steel/PVC	2	914.20	928.40	0.067	9/21/06	9:55

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
9:34	4.20	7.13	13.8	0.795	10.72	87
9:37	4.25	7.13	15.4	0.789	2.50	86
9:40	4.28	7.13	15.9	0.797	1.65	55
9:43	4.28	7.12	16.0	0.800	1.21	38
9:46	4.28	7.11	16.0	0.802	1.10	24
9:49	4.28	7.10	16.0	0.803	1.02	34
9:52	4.28	7.10	16.0	0.804	0.99	36
9:55	4.28	7.10	16.0	0.804	0.91	46

Notes: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO

Readings taken at 3 minute intervals.

Comments:

Prepared by: R. McPeak  
 Date: 10/17/06  
 Reviewed by: P. Malumphy  
 Date: 10/17/06

# MW-8

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
Project Number: 137003

Field Staff: R. McPeak  
J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-8	--	18.16	18.16	18.3	--	21.5	31.60	28.13	9/20/06	2:20	2:28	3:02

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	16.6	938.55	15	24.1	Steel/PVC	2	927.02	955.15	0.077	9/20/06	2:49

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
2:28	18.16	7.03	14.6	1.93	10.21	170
2:31	18.30	6.78	14.0	1.97	4.02	18
2:34	18.30	6.76	14.0	1.98	2.80	12
2:37	18.30	6.74	14.0	1.98	2.31	29
2:40	18.30	6.73	14.0	1.98	2.08	150
2:43	18.30	6.73	14.1	1.99	1.95	33
2:46	18.30	6.75	14.0	1.98	1.85	67
2:49	18.30	6.69	13.8	1.99	1.93	95

Notes: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
+ or - 0.1 for pH  
+ or - 3% for Specific Conductivity - SC  
+ or - 10% for Dissolved Oxygen - DO

Readings taken at 3 minute intervals.

Comments:

Prepared by: R. McPeak  
Date: 10/17/06  
Reviewed by: P. Malumphy  
Date: 10/17/06

# MW-9

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
 Project Number: 137003

Field Staff: R. McPeak  
 J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-9	--	Free Flow	Free Flow	0.05	--	12.0	18.4	15.3	9/21/06	10:25	10:30	11:13

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	8.40	916.23	10	13.4	Steel/PVC	2	909.33	924.63	0.045	9/21/06	10:51

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
10:30	Free Flow	7.04	13.1	1.21	7.93	81
10:33	0.05	7.17	12.6	1.23	2.43	110
10:36	0.05	7.17	12.5	1.23	1.48	110
10:39	0.05	7.16	12.4	1.24	1.24	88
10:42	0.05	7.17	12.3	1.24	1.17	120
10:45	0.05	7.17	12.3	1.24	1.12	98
10:48	0.05	7.17	12.3	1.24	1.07	110
10:51	0.05	7.18	12.3	1.24	1.04	90

Notes: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO

Readings taken at 3 minute intervals.

Comments:

Prepared by: R. McPeak  
 Date: 10/17/06  
 Reviewed by: P. Malumphy  
 Date: 10/17/06

# MW-10

## Groundwater Sampling Log

Project: Whittaker Corporation, Greenville, PA  
Project Number: 137003

Field Staff: R. McPeak  
J. Lavender



Well ID	PID	Depth to Water Static (ft.)	Depth to Water Initial (ft.)	Depth to Water After (ft.)	Water Volume in Equip. (gal.)	Depth Tube Set (ft.)	Total Depth Previous (ft.)	Total Depth Final (ft.)	Date Pump in Well	Time Pump in Well	Time Pump Started	Time Pump Stopped
MW-10	--	19.90	20.75	20.95	--	25	32.29	31.2	9/20/06	3:20	3:26	3:55

Tubing Type	Sampling Device	Depth to Screen	Screen Elevation	Screen Length	Mid-Screen Depth	Casing Type	Well Diameter	Well Bottom Elevation	Top of PVC Elevation	Average Pumping Rate (gpm)	Date Sampled	Sample Time
Polyethylene	Peristaltic Pump	7.29	933.83	15	14.8	Steel/PVC	2	919.92	951.12	0.05	9/20/06	3:26

Time	DTW (ft)	pH	Temperature (°C)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/kg)	Turbidity (NTU)
3:26	20.75	7.04	13.3	1.41	11.32	130
3:29	20.85	7.04	13.3	1.40	11.33	150
3:32	20.90	7.04	13.3	1.38	11.35	130
3:35	20.95	7.04	13.4	1.38	11.37	140

Notes: The EPA Method (EPA/540/S-95/504 April, 1996) suggests stabilization of field parameters for three successive readings:  
 + or - 0.1 for pH  
 + or - 3% for Specific Conductivity - SC  
 + or - 10% for Dissolved Oxygen - DO

Comments:

Prepared by: R. McPeak  
Date: 10/17/06  
Reviewed by: P. Malumphy  
Date: 10/17/06

Readings taken at 3 minute intervals.