Final

Results of Groundwater Sampling for Major Cations and Anions, Trace Elements, Nutrients, Organic Chemicals, and Isotopes of Hydrogen and Oxygen at RVAAP-66 Facility-Wide Groundwater, April 2011

Ravenna Army Ammunition Plant
Ravenna, Ohio

Contract No. (MIPR Number) W22W9K03277399
Project No. 118064

Prepared for:

US Army Corps of Engineers®

U.S. Army Corps of Engineers
600 Martin Luther King, Jr. Place
Louisville, Kentucky 40202

Prepared by:

USGS science for a changing world

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January 2013

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14. ABSTRACT

Groundwater samples were obtained at RVAAP-66 Facility-wide Groundwater from 19 wells from April 4 through April 7, 2011. Results of micropurge and traditional sampling techniques were similar; however, concentrations for some inorganic constituents, explosives, and propellants were greater for traditional sampling methods than micropurge methods. Possible explanations include dilution from a rainfall event prior to micropurge sampling, elevated turbidity in micropurge samples, and (or) relatively small aquifer volumes sampled by micropurge as compared to large aquifer volumes sampled by traditional methods. For selected samples adjacent to or under Areas of Concern, elevated concentrations of several inorganic constituents including arsenic, barium, iron, manganese, and nickel were demonstrated through flow-path analysis. Additional sampling of bis(2-ethylhexyl)phthalate done as part of this study was insufficient to identify the source; however, since plastics were not used to a great degree at this facility, it is reasonable to conclude that elevated concentrations are the result of sampling, processing, or laboratory processing.

15. SUBJECT TERMS
Groundwater chemistry, bis(2-ethylhexyl)phthalate

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CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

The U.S. Geological Survey (USGS) has completed the administrative report "*Results of Groundwater Sampling for Major Cations and Anions, Trace Elements, Nutrients, Organic Chemicals, and Isotopes of Hydrogen and Oxygen at RVAAP-66 Facility-Wide Groundwater, April 2011.*" Notice is hereby given that an independent technical review ("internal USGS peer review" in USGS nomenclature) has been conducted in accordance with USGS Fundamental Science Practices (see http://www.usgs.gov/fsp/). USGS defines peer review (also referred to as technical peer review, refereeing, or scientific peer review) as scrutiny of work or ideas by colleagues (peers) who are well qualified and who are of equal standing with another. In scientific endeavors, the implication is that education and/or experience qualify one to comment on the work of others in a particular field of expertise. Qualified peer reviewers of USGS information products must have no stake in the outcome of the review or publication of the work, are not associated with the work being performed, and are without conflict of interest.

A minimum of two peer reviews by qualified reviewers is mandatory for all USGS science information products that require peer review. Peer reviews typically evaluate or critique the clarity of hypotheses, the validity of the research design, the quality of data collection procedures, the robustness of the methods employed, the appropriateness of the methods for the hypotheses being tested, the extent to which the conclusions follow from the analysis, and the strengths and limitations of the overall product.

Ralph J. Haefner
Study/Design Team Leader

12/18/12
Date

Kevin J. Breen
Independent Technical Review Team Leader
(USGS Bureau Approving Official)

12/18/12
Date

Significant concerns and the explanation of the resolution are as follows:

Internal USGS review comments are recorded on draft versions of the report and summarized in memorandums between the reviewers and the authors. Changes to the report addressing the comments have been verified by the Study/Design Team Leader. As noted above, all concerns resulting from peer review of the project have been considered.

James R. Morris
Director, Ohio Water Science Center

12/18/12
Date

Ohio EPA
40 years and moving forward

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

January 16, 2013

CERTIFIED MAIL
7012 1010 0002 2260 3346

Mr. Mark Patterson
Installation Manager
Ravenna Army Ammunition Plant
8451 State Route 5
Ravenna, OH 44266

Re: Ravenna Army Ammunition Plant, Portage/Trumbull Counties, FWGWMP, Final, Results of Groundwater Sampling for Major Cations and Anions, Trace Elements, Nutrients, Organic Chemicals and Isotopes of Hydrogen and Oxygen, April 2011, Prepared by USGS, Dated January 2013 (Ohio EPA ID # 267-000859-036)

Dear Mr. Patterson:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the Final, Results of Groundwater Sampling for Major Cations and Anions, Trace Elements, Nutrients, Organic Chemicals, and Isotopes of Hydrogen and Oxygen at RVAAP-66 Facility-Wide Groundwater" report. The report is dated January 2013 and was received on January 8, 2013 at Ohio EPA, Northeast District Office (NEDO). This report was prepared for the U.S. Army Corps of Engineers (USACE) – Louisville District, by U.S. Geological Survey (USGS), Columbus, Ohio, under contract no. (MIPR Number) W22W9K03277399.

Ohio EPA's letter, dated September 12, 2012, indicated that the report could not be approved until USACE indicated the intent of the report. USACE's (Mark Nichter's email, dated November 7, 2012) response described the intended purpose and use of the report and "believes this report is useful to the overall characterization of the FWGWMP at RVAAP." Excerpts from the email are as follows:

Purpose:

"The USGS study essentially has three purposes: 1) The study addresses a possible explanation for elevated concentrations of bis(2-ethylhexyl)phthalate in groundwater; 2) The study also describes the geochemical conditions in groundwater; and 3) it demonstrates the use of flow-path analysis (using chemical and isotopic data) to define points of contamination."

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Results of the Study:

"Results of the study suggest the following: 1) The study determined the use of different (high flow vs. low flow) groundwater purge and sampling methods does not explain the source of elevated concentrations of bis(2-ethylhexyl)phthalate. This information supports further investigation activities currently being conducted by EQM under the RI/FS study. 2) The geochemical conditions in groundwater indicate the groundwater is mostly derived from local precipitation. As such, this provides a better understanding of the groundwater flow direction (i.e. deep water is not recharging shallow aquifers). Also, reducing conditions were noted in groundwater at the Load Line 4 area, and in several of the eastern basal Sharon Conglomerate wells. 3) Generally speaking, the flow-path analyses indicate that concentrations of certain inorganic contaminants decrease down-gradient of their respective AOCs due to physical and/or geochemical processes. As such, the flow-path analyses demonstrate this tool could be used in future investigations to better understand the fate and transport of contaminants, and the possible development of remediation strategies." Ohio EPA may or may not agree with the above, depending on the proposed applicable use of the report, which has yet to be determined.

Paragraph 39 of the 2004 Director's Final Findings and Orders states, "Ohio EPA will review any work plan, report, or other item required to be submitted pursuant to these Orders ("submission") within 45 days from the date of actual receipt of such submission by the Project manager. This time limitation may be extended by mutual written agreement of the Project Managers. Upon review, Ohio EPA may in its sole discretion: (a) approve the submission in whole or in part; (b) approve the submission upon specified conditions; (c) modify the submissions; (d) disapprove the submission in whole or in part, notifying Respondent of deficiencies; or (e) any combination of the above."

The report, overall, has been conditionally approved, pursuant to paragraph 39 of the 2004 Director's Final Findings and Orders. The report is approved in its entirety as a stand-alone document; however, any future proposed application from this report will require additional evaluation and approval by Ohio EPA. This report is based on only 19 well samples from five locations, which do not adequately characterize groundwater throughout the entire installation. Depending on the proposed use of the data, additional investigation or sampling may be necessary for total site characterization.

In addition, pursuant to the CERCLA process, the property owner usually can provide the expected land uses to assist in ensuring that the investigation addresses all receptors for both current and future land uses. Be advised that due to land use uncertainty, Ohio EPA may require additional work in the future to address data gaps. It is incumbent upon the Army to finalize decisions on land use at Camp Ravenna as soon as possible, otherwise additional work and schedule slippage may result.

Ohio EPA has enclosed the Executive Summary and the recommendations sections from the final report to this letter for additional information.

If you have any questions on the above, please contact the Project Manager, Eileen Mohr.

Sincerely,

Eileen Mohr
Project Manager
Division of Environmental Response and Revitalization

VD:EM/kss

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Final

Results of Groundwater Sampling for Major Cations and Anions, Trace Elements, Nutrients, Organic Chemicals, and Isotopes of Hydrogen and Oxygen at RVAAP-66 Facility-Wide Groundwater, April 2011

Ravenna Army Ammunition Plant
Ravenna, Ohio

Contract No. (MIPR Number) W22W9K03277399
Project No. 118064

Prepared for:
U.S. Army Corps of Engineers
600 Martin Luther King, Jr. Place
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RVAAP – Ravenna Army Ammunition Plant
USACE – U.S. Army Corps of Engineers – Louisville District
OHARNG – Ohio Army National Guard
ARNG – Army National Guard
Ohio EPA – Ohio Environmental Protection Agency

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List of Acronyms

AOC	Area of concern
COPC	Chemical of potential concern
FWGWMP	Facility-Wide Ground Water Monitoring Program
PVC	Polyvinyl chloride
ODNR	Ohio Department of Natural Resources
Ohio EPA	Ohio Environmental Protection Agency
RPD	Relative Percent Difference
RVAAP	Ravenna Army Ammunition Plant
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey

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Executive Summary

Groundwater samples were obtained at the Ravenna Army Ammunition Plant (RVAAP-66 Facility-wide Groundwater) from 19 wells from April 4 through April 7, 2011. Samples were analyzed for a wide variety of constituents to describe geochemical conditions in groundwater, explore whether elevated concentrations of bis(2-ethylhexyl)phthalate in groundwater were an artifact of micropurge sampling methods, and demonstrate the use of flow-path analysis to identify and define points of contamination. Additionally, comparisons of analytical results obtained from micropurge sampling techniques and traditional purge techniques are provided.

Groundwater samples were characterized as calcium-magnesium-sulfate-bicarbonate waters under mixed (oxic-anoxic) conditions. Isotope ratios of hydrogen and oxygen in water indicate that groundwater is derived from local precipitation. Historically, concentrations of bis(2-ethylhexyl)phthalate were detected in some samples. Additional sampling done as part of this study was insufficient to identify the source of bis(2-ethylhexyl)phthalate; however, because plastics were never used to a great degree at this facility, it is reasonable to conclude that elevated concentrations are the result of sampling, processing, or laboratory analyses. For selected samples collected from wells adjacent to or under Areas of Concern, elevated concentrations of several inorganic constituents including arsenic, barium, iron, and manganese were demonstrated through flow-path analysis.

Results from micropurge and traditional sampling techniques were similar; however, concentrations for eight of ten inorganic constituents and seven of eight explosives and propellants were greater for traditional sampling methods than for micropurge methods. Possible explanations for these discrepancies include changes in water quality from a rainfall event during the first day of micropurge sampling, elevated turbidity in micropurge samples, and (or)

relatively small aquifer volumes sampled by micropurge as compared to large aquifer volumes sampled by traditional methods.

1.0 Introduction

Military activities at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio, from the late 1930s through the early 1970s led to the contamination of soils and groundwater by solvents, pesticides, explosives, and metals. To understand the nature and extent of contamination at the RVAAP, groundwater sampling has focused on Areas of Concern (AOCs) and Chemicals of Potential Concern (COPCs). Table 1 shows a subset of inorganic constituents, consisting of major cations and anions, nutrients, and trace elements analyzed in groundwater samples since 2007 in accordance with the Facility-Wide Ground Water Monitoring Program (FWGWMP) Plan (U.S. Army Corps of Engineers (USACE, 2004).

Prior sampling and chemical analysis of groundwater at RVAAP were done by a contractor for the USACE. Their sampling and analysis protocol, constituent list, and well selection criteria were based on regulatory purposes, not research purposes, and included use of micropurge sampling methods. Even though analyses of most of the constituents listed in table 1 were done at one time or another on groundwater from more than 240 wells at RVAAP, not all samples were analyzed for all constituents on the same date and by means of the same sampling or analytical procedure. The USACE was interested in obtaining a set of samples with full geochemical analysis of anions and cations and consistent techniques that could help define geochemical conditions in aquifers at the site. Additionally, the USACE was interested in investigating occurrences of low concentrations of the plasticizer bis(2-ethylhexyl)phthalate in groundwater, found in many places across the facility even though plastics were not used in manufacturing or processing at RVAAP.

Table 1. Chemical constituents in the Facility-Wide Ground Water Monitoring Plan (U.S. Army Corps of Engineers, 2004) for RVAAP-66 Facility-wide Groundwater, 2007-2011, with constituents added by the U.S. Geological Survey in April 2011 shown in bold.

[FWGWMP, Facility-Wide Ground Water Monitoring Program; RSIL, U.S. Geological Survey Reston Stable Isotope Laboratory; USEPA, U.S. Environmental Protection Agency; n/a, not applicable)

	Constituent	Included in FWGWMP and analyzed 2007-2011?	USEPA Method Code
Cations, filtered	Calcium	Yes	6010B
	Magnesium	Yes	6010B
	Sodium	Yes	6010B
	Potassium	Yes	6010B
Anions, unfiltered	**Bromide**	**No**	**300.0A**
	Chloride	**No**	**300.0A**
	Fluoride	**No**	**300.0A**
	Sulfate	**No**	**300.0A**
Trace elements, filtered	Aluminum	Yes	6020
	Antimony	Yes	6020
	Arsenic	Yes	6010B
	Barium	Yes	6010B
	Beryllium	Yes	6020
	Boron	**No**	**6010B**
	Cadmium	Yes	6020
	Chromium	Yes	6010B
	Cobalt	Yes	6010B
	Copper	Yes	6010B
	Iron	Yes	6020
	Lithium	**No**	**6010B**
	Lead	Yes	6010B
	Manganese	Yes	6010B
	Mercury	Yes	6010B
	Molybdenum	**No**	**6010B**
	Nickel	Yes	6010B
	Selenium	Yes	6010B
	Silica, as SiO_2	**No**	**6010B**
	Silver	Yes	6010B
	Thallium	Yes	6020
	Uranium	**No**	**6020**
	Vanadium	Yes	6010B
	Zinc	Yes	6020
Nutrients, un-filtered	Nitrate as N	Yes	353.2
	Nitrite as N	**No**	**300.0A**
	Nitrogen as Ammonia	**No**	**350.2**
	Phosphate as P, Ortho	**No**	**300.0A**
Isotopes, un-filtered	**Hydrogen ($^2H/^1H$)**	**No**	**n/a**
	Oxygen ($^{18}O/^{16}O$)	**No**	**n/a**

The geology of Portage County is summarized in Winslow and White (1966). Because the focus of this report and the occurrence of contamination is limited to relatively shallow groundwater, only the rocks and sediments within 150 ft of the surface are described herein. The Pottsville Formation is divided, from oldest to youngest, into the Sharon Member, the Connoquenessing Sandstone, the Mercer Shale, and the Homewood Sandstone Members. The Sharon Conglomerate Member is a heterogeneous unit, consisting predominantly of sandstone that contains several conglomerate deposits and is overlain by shale. For the purposes of this report, the conglomerate deposits will be referred to as the "Sharon conglomerate" and the sandstone unit will be referred to as the "Sharon sandstone." Most of the bedrock in the area is covered with glacial deposits that commonly consist of poorly sorted sand and gravel in a silty clay or clay matrix. For the purposes of this report these deposits will be referred to as "unconsolidated glacial deposits."

2.0 Purpose and Scope

In 2011, the U.S. Geological Survey (USGS), in cooperation with the USACE, undertook a project to sample and analyze groundwater for selected inorganic, organic, and isotopic constituents. This report provides the results of that sampling and analysis. The purposes of this report are the following:

1. Describe the geochemical conditions in groundwater at RVAAP based on analyses of inorganic constituents and isotopes of hydrogen and oxygen from 21 samples obtained from 19 wells.
2. Explore whether elevated concentrations of bis(2-ethylhexyl)phthalate in two groundwater samples are an artifact of micropurge sampling methods.

3. Demonstrate the use of flow-path analysis to identify and further define points of contamination.

Additionally, this report includes a comparison of water-quality results obtained through micropurge and traditional purge methods. The scope of this report was limited to a one-time sampling event in April 2011 at the RVAAP.

3.0 Methods

During April 4 through 7, 2011, a contractor for the USACE (hereafter termed "the contractor") sampled 42 wells at RVAAP using sampling methods described in the FWGWMP (USACE, 2004) and further described below. The wells were concentrated within and around AOCs (figure 1) and were screened in four different lithologic units: unconsolidated glacial deposits (11 wells), the Homewood Sandstone Member (1 well), the Sharon sandstone (24 wells), and the basal portion of the Sharon conglomerate (6 wells). The selection of the 42 wells was based on a rotational sampling schedule of wells at RVAAP and regulatory requirements of the FWGWMP.

To address objectives of this report, the USGS performed additional chemical analysis on samples from a subset of 19 of the 42 wells that appeared to lie on or along shallow, localized flow paths based on a 2005 bedrock potentiometric-surface map from Ohio Department of Natural Resources (2005; figure 1) and potentiometric-surface maps provided by the contractor in unpublished internal reports. All wells were constructed of 2-inch polyvinyl chloride (PVC)

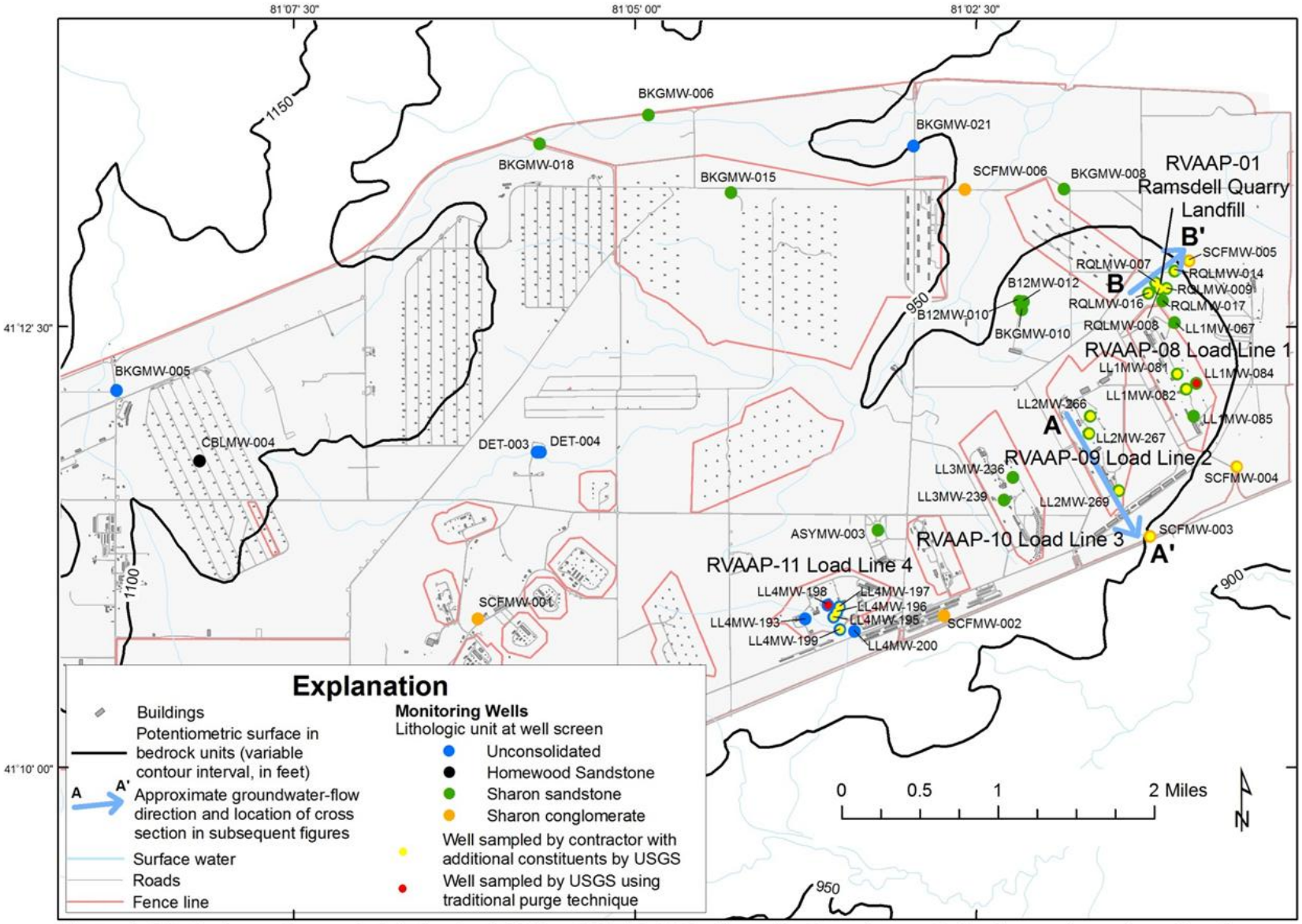

Figure 1. Monitoring wells sampled during April 2011 at RVAAP-66 Facility-wide Groundwater. Bedrock potentiometric surface from Ohio Department of Natural Resources (2005).

well casing and 10- to 15-ft screens. Additional well-construction details are given for the 19 wells in table 2. Two of the 19 wells (LL1MW-084 and LL4MW-198) were resampled by the USGS using methods described below to examine the occurrence of bis(2-ethylhexyl)phthalate. These two wells were selected because they had previous detections of bis(2-ethylhexyl)phthalate. Only two wells were selected for this investigation because of project budget limitations.

Table 2. Well-construction details for wells sampled by the U.S. Geological Survey, April 4-7, 2011 at RVAAP-66 Facility-wide Groundwater.

[NGVD 29, National Geodetic Vertical Datum of 1929; Unc, Unconsolidated glacial deposits; Ss, Sharon Sandstone; Sc, Sharon conglomerate]

Well ID	USGS well number	USGS site ID	Land surface datum (ft above NGVD 29)	Well depth (ft)	Screen interval Top (ft)	Screen interval Bot-tom (ft)	Litho-logic unit
LL1MW-081	PO-138	411213081010000	996.40	39.4	29.4	38.9	Ss
LL1MW-082	PO-139	411208081005600	1,003.70	39.0	28.9	38.5	Ss
LL1MW-084	PO-140	411210081005100	996.40	37.0	26.7	36.3	Ss
LL2MW-266	PO-141	411159081013800	1,014.09	20.5	9.8	19.8	Ss
LL2MW-267	PO-142	411154081013900	1,012.81	20.5	9.8	19.8	Ss
LL2MW-269	PO-143	411134081012600	1,009.49	28.0	17.1	27.1	Ss
LL4MW-195	PO-144	411052081033200	980.83	21.0	10.3	20.3	Unc
LL4MW-196	PO-145	411054081033000	982.56	20.0	9.2	19.2	Unc
LL4MW-197	PO-146	411056081032900	983.79	21.7	10.8	20.8	Unc
LL4MW-198	PO-147	411056081033400	981.61	22.0	10.3	20.3	Unc
LL4MW-199	PO-148	411048081032900	975.20	22.0	10.3	20.3	Unc
RQLMW-007	PO-149	411244081010900	963.86	18.7	6.0	16.0	Ss
RQLMW-008	PO-150	411242081010800	963.82	18.7	6.0	16.0	Ss
RQLMW-009	PO-151	411242081010400	962.60	18.8	5.9	15.9	Ss
RQLMW-014	PO-152	411248081010100	970.83	29.4	18.6	28.6	Ss
RQLMW-016	PO-153	411240081011200	994.02	39.5	28.5	38.5	Ss
SCFMW-003	PO-154	411119081011200	956.14	135.5	125.5	135.5	Sc
SCFMW-004	PO-155	411142081003300	941.87	110.0	100.0	110.0	Sc
SCFMW-005	PO-156	411251081005400	958.43	154.0	139.0	154.0	Sc

Water samples were collected over 4 days that exhibited a range of weather conditions. Snowfall and rainfall from a weather station at the Akron-Canton Airport, in Akron, OH (approximately 25 miles to the southwest) are shown on figure 2. Air temperatures ranged from a low of 16 degrees F on March 30, 2011 to a high of 64 degrees F on April 5, 2011. Average daily temperatures were above freezing during all four days of sampling.

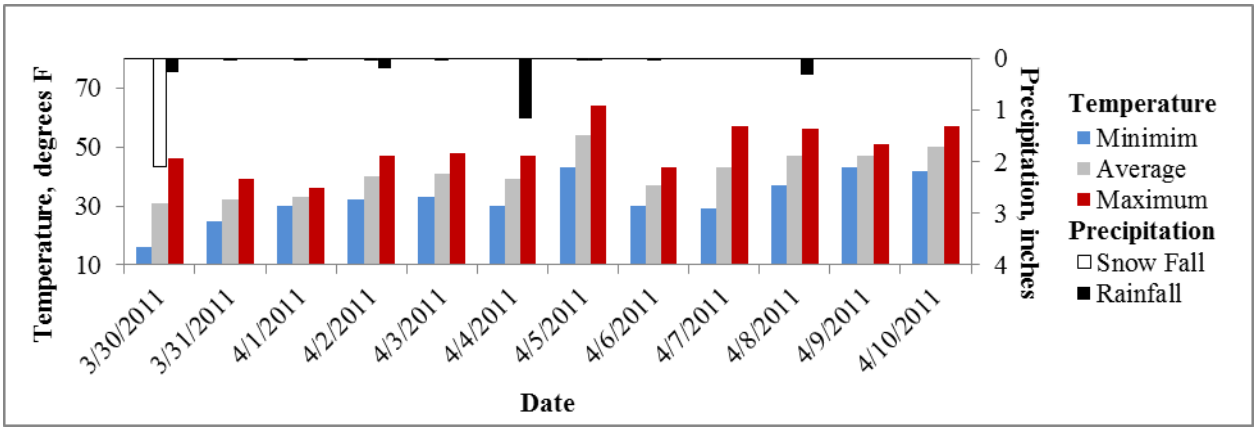

Figure 2. Temperature and precipitation amounts at Akron-Canton Regional Airport prior to and during groundwater sampling at RVAAP-66 Facility-wide Groundwater (National Oceanic and Atmospheric Administration, 2011).

The contractor collected samples from 42 wells shown in figure 1 using the micropurge sampling method or bailers. Only wells sampled with the micropurge sampling method are included in this report. The micropurge sampling method employed an air- or nitrogen-driven bladder pump with dedicated discharge hoses for each of the wells. The contractor obtained measurements of pH, specific conductance, and turbidity using a Horiba U-22[1] water-quality data sonde that was calibrated to standard solutions at the start of each day. The USGS accompanied contractor crews and obtained additional aliquots of water from 19 of the 42 wells using the contractor's equipment and the micropurge sampling method. The USGS resampled two of the 19 wells two to three days after sampling by the contractor; the USGS used traditional

[1] Use of trade or product names is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey

sampling methods described in the USGS National Field Manual (U.S. Geological Survey, variously dated). The USGS obtained field measurements of pH, specific conductance, temperature, dissolved oxygen, and turbidity using a YSI 6920 water-quality data sonde that was calibrated to standard solutions at the start of each day. The USGS determined alkalinity in the field using standard USGS techniques (U.S. Geological Survey, variously dated).

For the purposes of this report, traditional sampling methods are defined as those that employ purging a minimum of three times the volume of water in the well and well screen accompanied by the requirement that field parameters (pH, dissolved oxygen, specific conductance, and temperature) stabilize before sampling. Micropurge sampling methods used by the contractor also require stabilization of field parameters (pH, specific conductance, and temperature (but not dissolved oxygen)) while purging minimal volumes of groundwater from within a small segment of the well screen. The goal behind micropurge sampling is to minimize both turbidity and purge volumes, thereby reducing the amount of investigation derived waste (IDW) while still obtaining a representative sample from the aquifer (Pohlmann and others, 1994; Puls and Barcelona, 1996; ASTM International, 2002).

The groundwater samples collected by the contractor were analyzed for all inorganic and organic constituents listed in the FWGWMP (which, in addition to those inorganic constituents listed in table 1, include about 150 explosives, propellants, solvents, pesticides, and bis(2-ethylhexyl)phthalate). For metals and trace elements, samples were filtered through a capsule filter with 0.45 μm pore size, acidified with nitric acid to a pH of less than 2, and chilled to below 4°C. As noted above, the USGS accompanied the contractor sampling crews and provided 5 additional bottles to fill with groundwater at 19 of the 42 wells which were analyzed for bromide, chloride, fluoride, sulfate, boron, lithium, molybdenum, silica, uranium, nitrite, ammonia, orthophosphate, and isotopes of hydrogen and oxygen in water. The constituent list for

the two wells included all constituents listed in table 1 plus those listed in the FWGWMP that were analyzed by the contractor.

The USGS-contracted laboratory for Department of Defense projects, Test America Laboratories in Canton, Ohio; West Sacramento, California; and Denver, Colorado performed all chemical analyses for samples collected by the USGS except for the isotopes. The isotopes of hydrogen and oxygen in water were analyzed by the USGS Reston Stable Isotope Laboratory in Reston, Virginia using methods and standard operating procedures as outlined in USGS (2011). Isotope ratios are expressed relative to the Vienna Standard Mean Ocean Water 2 reference water (International Atomic Energy Agency, 2009). For all analyses, the reporting limit was provided by the laboratory and is indicated as a –U" value in this report. Quality-assurance checks by the USGS included one equipment blank obtained during the traditional sampling of the two wells. The contractor also included approximately 25-percent quality-control samples as matrix-spike/matrix-spike duplicates, split/duplicates, and equipment blanks as part of their sampling requirements. Additional quality-assurance steps for analyses were taken at the laboratories. Disposal of IDW was done in coordination with the contractor.

4.0 Results

Water-quality data collected by the contractor and the USGS are included as tables 3 through 9. (Because of their length, these tables have been placed after the References section at the end of this report.) Cation and anion data were evaluated first with regards to electric neutrality. Because water samples do not contain an electrical charge, the sum of all positively charged ions (cations), primarily sodium, potassium, calcium, and magnesium should equal the sum of all negatively charged ions (anions) primarily chloride, bicarbonate, sulfate, and nitrate. Concentrations were converted to milliequivalents per liter (meq/L) and a cation/anion balance

was computed through the geochemical modeling software PHREEQC (Parkhurst and Appelo, 1999) using equation 1:

$$\text{Cation/Anion Balance} = [(\Sigma_{\text{cations}} - \Sigma_{\text{anions}}) / (\Sigma_{\text{cations}} + \Sigma_{\text{anions}})] * 100 \quad (1)$$

If all laboratory analyses are done accurately, the ideal analysis should have a cation/anion balance of zero percent. Positive balances indicate the sum of cations is greater than the sum of anions; negative balances indicate that the sum of anions is greater than the sum of cations.

All samples had cation/anion balances within ±10 percent (table 10). Of the 21 sets of analyses done on groundwater samples collected at RVAAP (19 samples obtained using micropurge sampling methods with the contractor plus two obtained using traditional sampling methods of the USGS), five had balances between five and ten percent. The analysis from well RQLMW-009 using micropurge sampling methods had the largest balance at 9.5 percent. Other samples with balances greater than or equal to ±5 percent were RQLMW-016 (-7.3 percent) RQLMW-008 (6.9 percent), LL2MW-269 (5.6 percent), and LL2MW-267 (5.0 percent).

Table 10. Results of cation/anion balance computations and comparison of measured and computed specific conductances in groundwater samples collected at RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

[µS/cm, microSiemens per centimeter at 25 degrees Celsius; RPD, relative percent difference]

Site	Cation/ anion balance (percent)	Specific conductance		
		Measured (µS/cm)	Computed (µS/cm)	RPD
Micropurge samples				
LL1MW-081	0.3	471	468	0.6
LL1MW-082	1.4	355	335	5.8
LL1MW-084	-0.4	358	324	10.0
LL2MW-266	3.6	158	241	-41.6
LL2MW-267	5.0	564	403	33.3
LL2MW-269	5.6	347	327	5.9
LL4MW-195	-2.1	1,470	1,230	17.8
LL4MW-196	0.6	543	462	16.1
LL4MW-197	-0.5	706	609	14.8
LL4MW-198	3.5	380	305	21.9
LL4MW-199	3.6	675	610	10.1
RQLMW-007	-0.1	420	563	-29.1
RQLMW-008	6.9	742	773	-4.1
RQLMW-009	9.5	219	174	22.9
RQLMW-014	3.2	210	213	-1.4
RQLMW-016	-7.3	2,100	1,900	10.0
SCFMW-003	3.0	710	571	21.7
SCFMW-004	3.7	1,100	1,080	1.8
SCFMW-005	0.2	900	783	13.9
Traditional purge samples				
LL1MW-084	0.1	290	286	1.4
LL4MW-198	4.8	270	296	-9.2

A second evaluation of the data was done to compare measured field specific conductance to computed specific conductance. Specific conductance is a measure of the ability of water to conduct an electrical current which, in turn, is related to the concentration of ions in solution. Therefore, specific conductance can be computed by summing the product of the molar conductivity and the molar concentration of all the species in solution, and making corrections

for temperature, viscosity, and electrochemical activity coefficient. The PHREEQC software was used to obtain a value for computed specific conductance from data listed in table 3 (at the back of this report) and data collected and analyzed by the contractor. The measured and computed specific conductance values were compared by computing a relative percent difference (equation 2):

$$\text{Relative percent difference (RPD)} = [(X_1 - X_2) / X_{mean}] \times 100 \quad (2)$$

where X_1 is the measured specific conductance, X_2 is the computed specific conductance and $X_{mean} = ((X_1 + X_2) / 2)$. A positive RPD indicates that measured specific conductance was greater than computed specific conductance; a negative RPD indicates that measured specific conductance was less than computed specific conductance.

Measured and computed specific conductances in most instances compare relatively well. Fifteen of the 21 RPDs in table 9 are less than 20 percent and 10 are 10 percent or less. The greatest RPD was -41.6 percent for the sample collected at LL2MW-266. RPDs for 16 of 21 samples were positive and 5 were negative indicating that, for 76 percent of the samples, measured specific conductance was greater than computed specific conductance.

Field measurements of pH ranged from 5.6 to 7.1 with a median of 6.5 and specific conductance ranged from 158 to 2,100 µS/cm with a median of 471 µS/cm (table 3, at the back of this report). Turbidity data obtained during micropurge sampling methods provided values that were much higher (14 turbidity values greater than 100 NTUs with a maximum of 835 NTU) than those collected using traditional purge sampling methods (2 samples with turbidities of 1.3 and 3.8 NTU). Sampling requirements from the FWGWMP (U.S. Army Corps of Engineers, 2004) state that turbidity shall be recorded, but neither a threshold turbidity value nor turbidity stabilization is prerequisite before sampling. Stabilization of turbidity is important for the same

reasons as stabilization of other parameters: to obtain a representative sample of groundwater that is minimally affected by the well construction or by the sampling methodology.

Selected cation and anion data from the 21 samples obtained from 19 wells were plotted on a trilinear diagram (also known as a Piper diagram) to examine water types and determine whether groundwater samples could be discriminated on the basis of AOC or lithologic unit (fig. 3). Some of the supporting data for these plots (including water chemistry and well-construction details) were obtained from the contractor's report and are not reproduced here. Water types were classified as calcium-magnesium-sulfate-bicarbonate waters. The limited number of samples makes it difficult to discern any patterns in the data by AOC but samples from Load Line 1 appear to have greater proportions of sulfate plus chloride and lesser proportions of carbonate plus bicarbonate as compared to samples from other AOCs.

Reduction / oxidation (redox) conditions were evaluated through the use of a spreadsheet program by Jurgens and others (2009) that takes into consideration concentrations of several redox-sensitive constituents; specifically, dissolved oxygen, nitrate, manganese, iron, sulfate, and, if available, hydrogen sulfide. Redox conditions are important towards understanding the mobility, degradation, and solubility of many anthropogenic and natural contaminants. Some contaminants in groundwater at RVAAP may only degrade under aerobic conditions (where oxygen is present and serves as the primary electron acceptor), whereas others may only degrade under anaerobic conditions (where oxygen is absent and other electron acceptors are utilized; Jurgens and others, 2009).

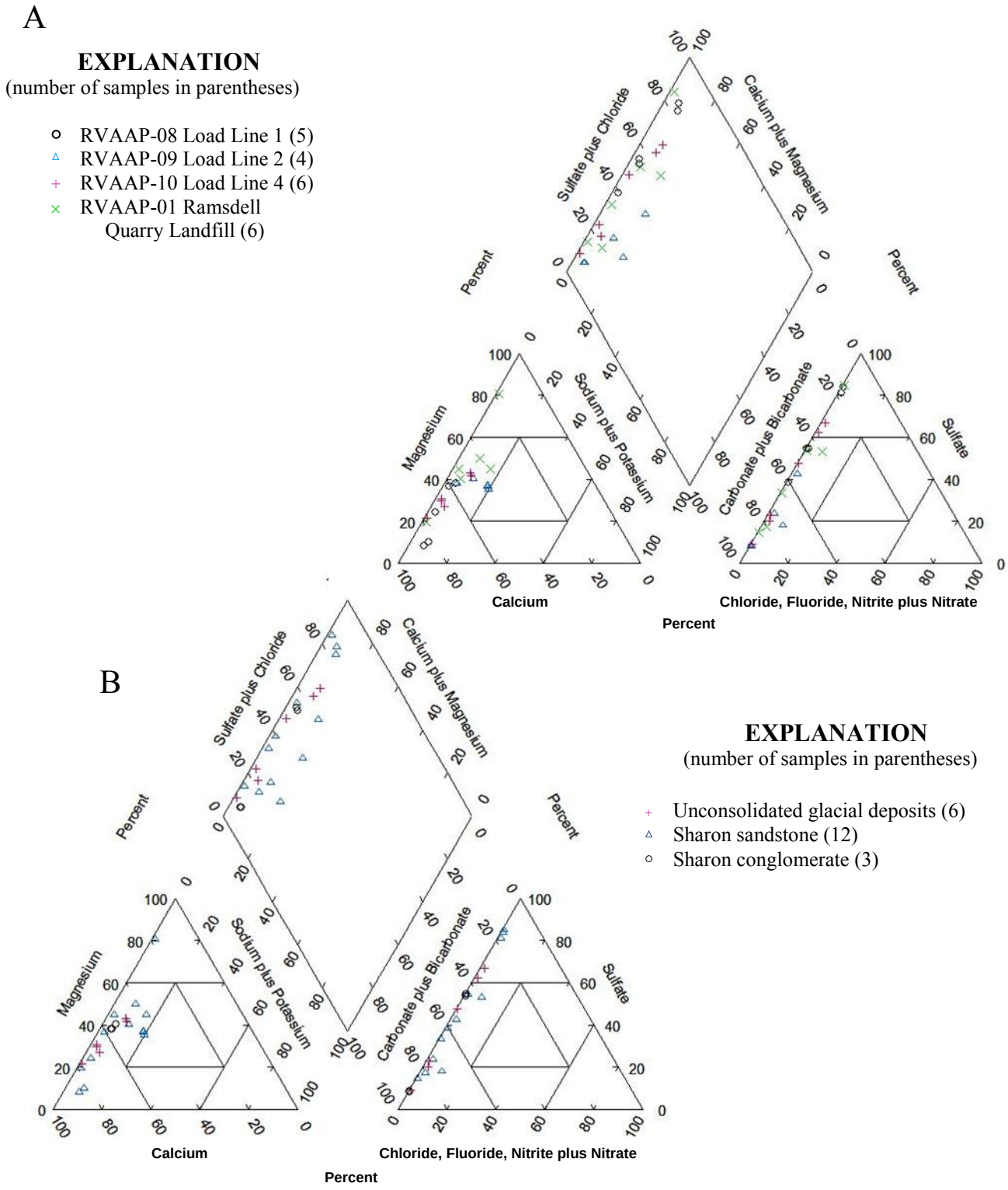

Figure 3. Piper plots of cation and anion concentrations in groundwater samples from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011 by A. area of concern, and B. lithologic unit.

All samples except LL4MW-197 were characterized as mixed (oxic-anoxic) with the primary redox processes being related to oxygen, iron, manganese, and sulfate reduction (table 11). The sample from LL4MW-197 was characterized as oxic with the primary redox process being oxygen reduction with relatively high concentrations of nitrate and low concentrations of manganese and iron. Although hydrogen sulfide was not measured in these samples, the odor of hydrogen sulfide (like that of rotten eggs) was noted at three wells, suggesting reducing conditions: USGS personnel noted the hydrogen sulfide odor at wells SCFMW-003 and SCFMW-005 and the contractor noted the odor at well SCFMW-004. All three of these wells were listed as mixed (oxic-anoxic), but the primary redox processes were oxygen, iron, and sulfate reduction in groundwater samples from SCFMW-003 and SCFMW-005 and oxygen and manganese reduction in well SCFMW-004.

Table 11. Concentrations of reduction / oxidation (redox) sensitive constituents, general redox category, and dominant redox processes in groundwater samples from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

[mg/L, milligrams per liter; B, constituent detected in associated method or trip blank sample; U, less than reporting limit listed]

Site	Oxygen (mg/L)	Nitrate, as N (mg/L)	Manga-nese (mg/L)	Iron (mg/L)	Sulfate (mg/L)	General redox category[1]	Redox process[1]
Micropurge samples							
LL1MW-081	4.3	0.1 U	2.17	4.63	129	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
LL1MW-082	0.6	0.1 U	1.64	5.21	63.7	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
LL1MW-084	8.8	0.86	0.19	0.05	122	Mixed (oxic-anoxic)	O_2-Mn(IV)
LL2MW-266	8.5	0.1 U	0.76	2.47	27.2	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
LL2MW-267	5.1	0.1 U	0.56	0.43	82	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
LL2MW-269	1.0	0.1 U	1.59	6.80	27.2	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
LL4MW-195	1.8	0.1 U	3.49	7.32	358	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
LL4MW-196	3.1	0.22	0.06	0.31	54.4	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
LL4MW-197	8.3	1.4	0.01	0.05	30	Oxic	O_2
LL4MW-198	9.0	0.1 U	1.01	4.72	93.4	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
LL4MW-199	6.6	0.1 U	0.84	5.83	64.2	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
RQLMW-007	3.4	0.04 B	0.02	0.59	101	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
RQLMW-008	0.6	0.1 U	0.30	18.20	62.6	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
RQLMW-009	2.5	0.07 B	0.11	0.89	13.4	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
RQLMW-014	0.7	0.1 U	2.80	15.10	50	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
RQLMW-016	6.0	0.1 U	6.83	11.60	1,120	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
SCFMW-003	3.6	0.1 U	0.26	0.60	25.2	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
SCFMW-004	3.4	0.1 U	0.73	0.05	334	Mixed (oxic-anoxic)	O_2-Mn(IV)
SCFMW-005	3.8	0.1 U	1.62	3.95	232	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4
Traditional purge samples							
LL1MW-084	4.7	0.1 U	0.24	0.05	104	Mixed (oxic-anoxic)	O_2-Mn(IV)
LL4MW-198	0.6	0.1 U	1.05	4.69	84.5	Mixed (oxic-anoxic)	O_2-Fe(III)/SO_4

1. General redox category and redox process after Jurgens and others, 2009.

4.1 Stable isotopes of hydrogen and oxygen in water

Measurement of stable hydrogen and oxygen isotopes in water can be a useful tool to examine the recharge history of groundwater because hydrogen and oxygen are part of the water molecule and generally are not affected by processes that may affect dissolved constituents (Kendall and McDonnell, 1998). Isotope ratios of hydrogen and oxygen in groundwater samples from RVAAP (table 9, at the back of this report; fig. 4) were plotted with respect to two reference lines: one for global precipitation (Craig, 1961) and one for local precipitation from Coshocton, Ohio (approximately 70 mi to the south-southwest of RVAAP; International Atomic Energy Agency, 2011). Isotope ratios in groundwater samples that plot along either of these reference lines are assumed to have originated from rainfall or snowmelt and were not affected by other isotope fractionation processes. The results from samples obtained at RVAAP were plotted by lithologic unit (fig. 4A) and by AOC (fig. 4B) to determine whether either of these groupings would show similarities between samples. All of the samples plotted near the local precipitation line and not below or on the global precipitation line, indicating that groundwater at RVAAP mostly originated as rainfall or snowmelt from nearby sources. The most negative (depleted) isotope ratios were determined for groundwater from well LL4MW-197 at RVAAP-11 Load Line 4, shown as the isolated symbol on the low end of the graphs in figure 4.

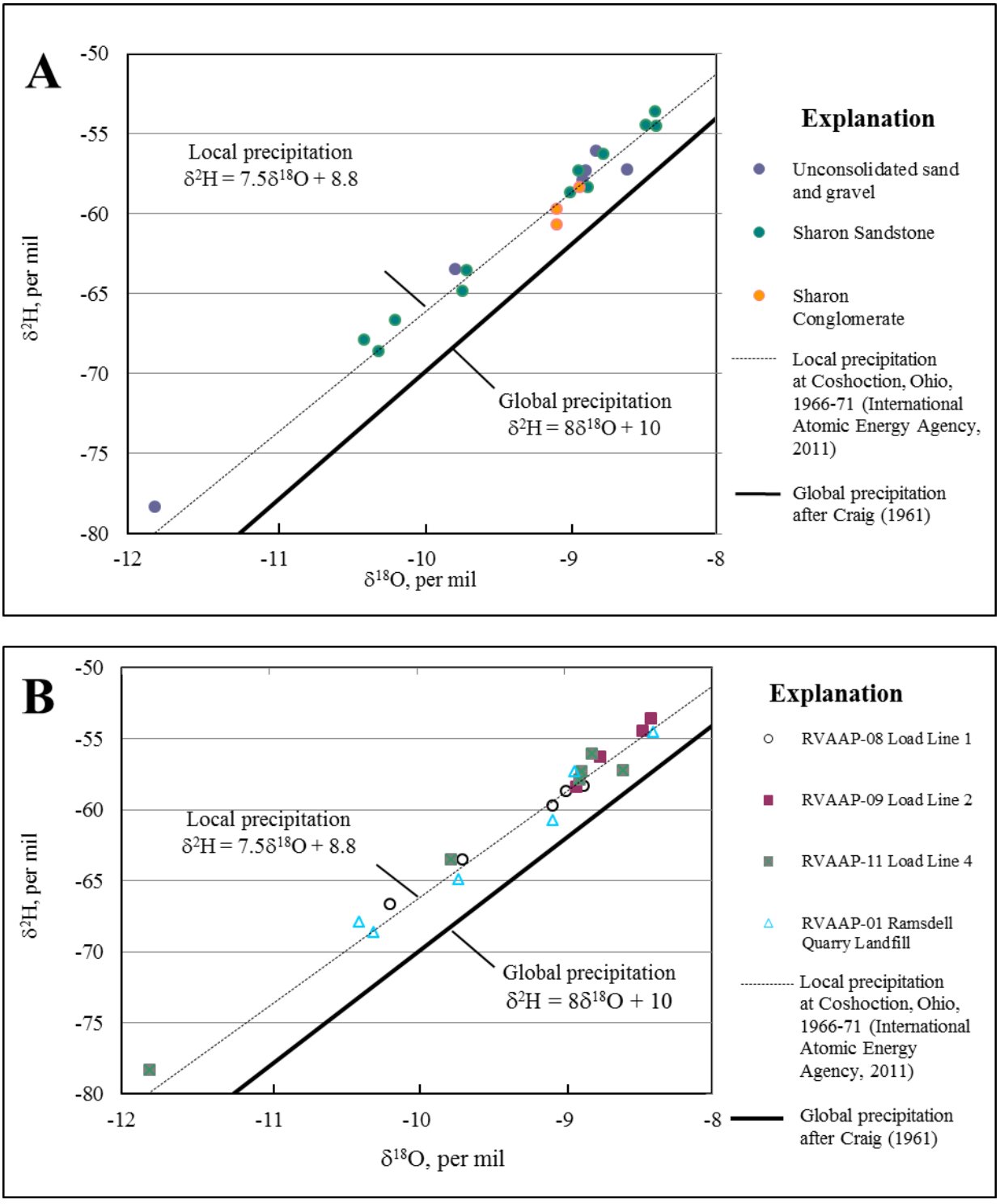

Figure 4. Isotope ratios of hydrogen and oxygen in groundwater samples collected at RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011 in relation to global and local precipitation lines plotted by A. lithologic unit, and B. area of concern. (Delta notation, δ, denotes isotope ratio relative to a standard.)

4.2 Bis(2-ethylhexyl)phthalate

The reporting limit for bis(2-ethylhexyl)phthalate was 10 micrograms per liter (μg/L) for all groundwater samples. The results from traditional sampling purge methods from two wells yielded concentrations below the reporting limit; however, the results from micropurge sampling methods were estimated values of 1.4 and 2.2 μg/L for samples from wells LL1MW-08 and LL4MW-198, respectively (table 12). The sample from well LL1MW-084 collected by micropurge sampling methods and the field blank collected by the USGS were both associated with laboratory blank samples that had estimated values below the reporting limit.

Table 12. Concentrations of bis(2-ethylhexyl)phthalate in groundwater samples collected at RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

[μg/L, micrograms per liter; U, less than reporting limit listed; J, estimated value; B, constituent detected in associated method or trip blank sample]

Site	Sampling method	bis-(2-ethyl hexyl) phthalate (μg/L)
LL1MW-084	Micropurge	1.4 JB
LL1MW-084	Traditional Purge	10 U
LL4MW-198	Micropurge	2.2 J
LL4MW-198	Traditional Purge	10 U
Field Blank	Traditional Purge	2.2 JB

4.3 Water chemistry along groundwater-flow paths

To explore differences or patterns in water chemistry along groundwater-flow paths, lines of shallow groundwater-flow paths that included wells sampled during the April 2011 sampling event were drawn on the potentiometric-surface map available from the Ohio Department of Natural Resources (ODNR, 2005) and on potentiometric-surface maps provided by the contractor. It is acknowledged that these maps are at relatively coarse scales and that the flow paths are estimated and may not necessarily include wells that lie precisely along a flow path or within the same lithologic unit that would encounter the same parcel of water when it flows from upgradient to downgradient. Nonetheless, this exercise was done to demonstrate a potential data-analysis tool for the USACE to use in future investigations.

Two groundwater-flow paths near wells sampled in April 2011 are shown on figure 1 at RVAAP-09 Load Line 2 (A-A') and RVAAP-01 Ramsdell Quarry Landfill (B-B'). These two flow paths were selected for these figures because flow directions from the ODNR potentiometric-surface map and the contractor-supplied potentiometric-surface maps agreed well; flow paths at RVAAP-08 Load Line 1 and RVAAP-10 Load Line 3 differed between the two data sources. Figure 5 depicts wells, lithology, and static water levels measured before sampling along the flow paths. Previous data evaluations by a contractor revealed that several COPCs were observed at each of the two AOCs, including bis(2-ethylhexyl)phthalate, pentachlorophenol, and manganese at RVAAP-09 Load Line 2 and tetrachloroethene, bis(2-ethylhexyl)phthalate, arsenic, iron, manganese, and nickel at RVAAP-01 Ramsdell Quarry Landfill. Results obtained during the April 2011 sampling round by the contactor and the USGS indicated that concentrations of bis(2-ethylhexyl)phthalate and pentachlorophenol at RVAAP-09 Load Line 2 were at or below the reporting limit; however, manganese was detected above the

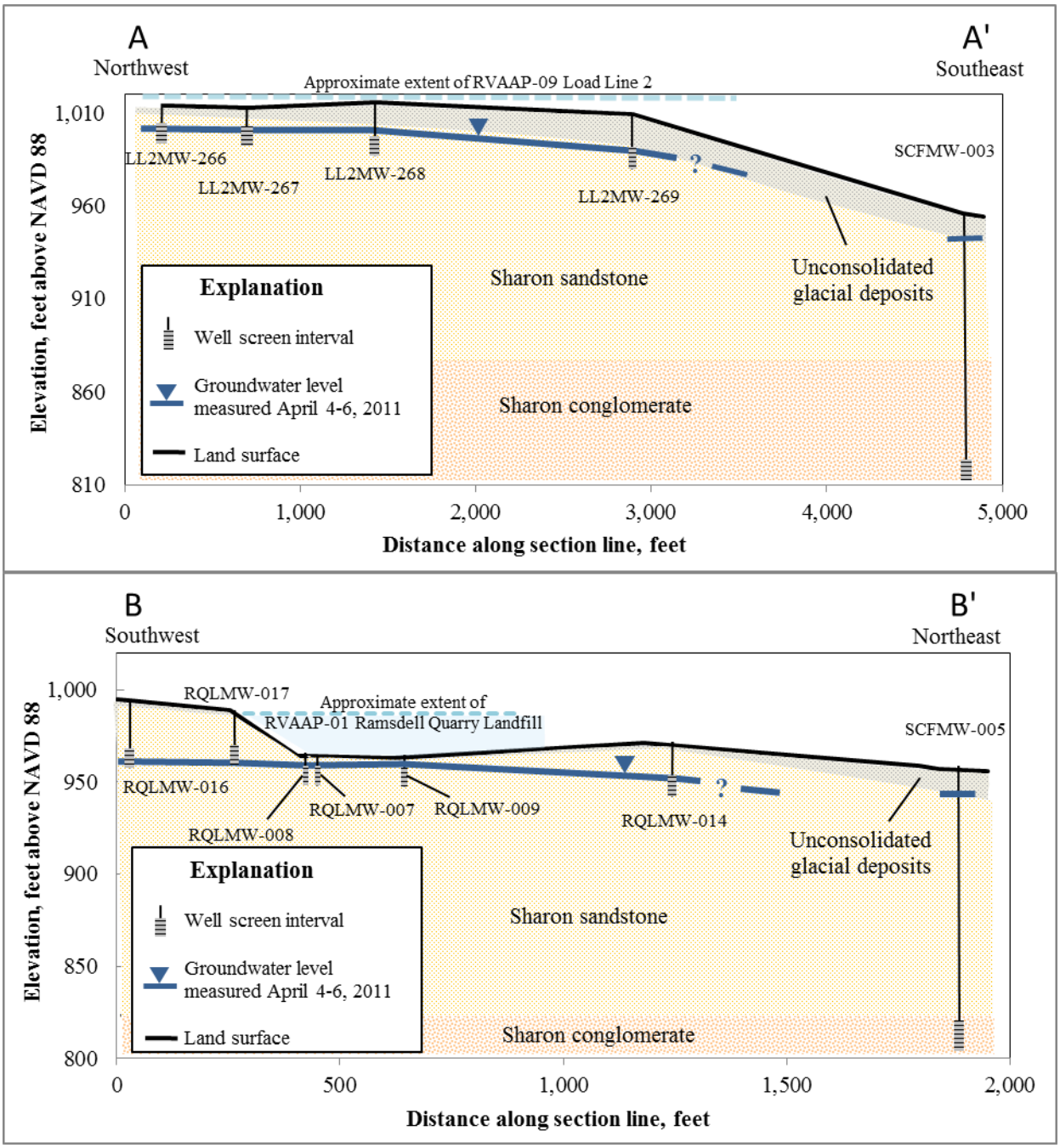

Figure 5. Hydrologic section lines along A-A' for RVAAP-09 Load Line 2 and B-B' for RVAAP-01 Ramsdell Quarry Landfill. Section lines are from figure 1.

reporting limit in all wells. Similarly, tetrachloroethene and bis(2-ethylhexyl)phthalate were at or below the reporting limit at RVAAP-01 Ramsdell Quarry Landfill; however, arsenic, nickel, iron, and manganese were detected above the reporting limit in several wells. Even though some of the elements, such as iron and manganese, are commonly found in groundwater at elevated concentrations in northeast Ohio, they are still considered COPCs at RVAAP.

For purposes of comparison, concentrations of the COPCs arsenic, barium, iron, manganese, and nickel were plotted as a series of bar charts (figure 6). For each cluster of bars that show concentrations of a single element, upgradient wells are plotted to the left and downgradient wells are plotted to the right. So, for example, the cluster for barium concentrations at Load Line 2 shows the upgradient wells LL2MW-266 and LL2MW-267 as blue and red bars, respectively, the mid-gradient well LL2MW-269 as a green bar, and the furthest downgradient well SCFMW-003 as a purple bar.

For RVAAP-09 Load Line 2, barium, iron, and manganese are at their greatest concentration in well LL2MW-269, indicating a potential source of these elements between this well and the two upgradient wells. If the Sharon Conglomerate well SCFMW-003 is assumed to lie along the same flow path (somewhat unlikely based on vertical distance between wells and observations of upward gradients and flowing wells in the area), some physical or geochemical process is responsible for lowering concentrations of barium, iron, and manganese between RVAAP-09 Load Line 2 and the downgradient well.

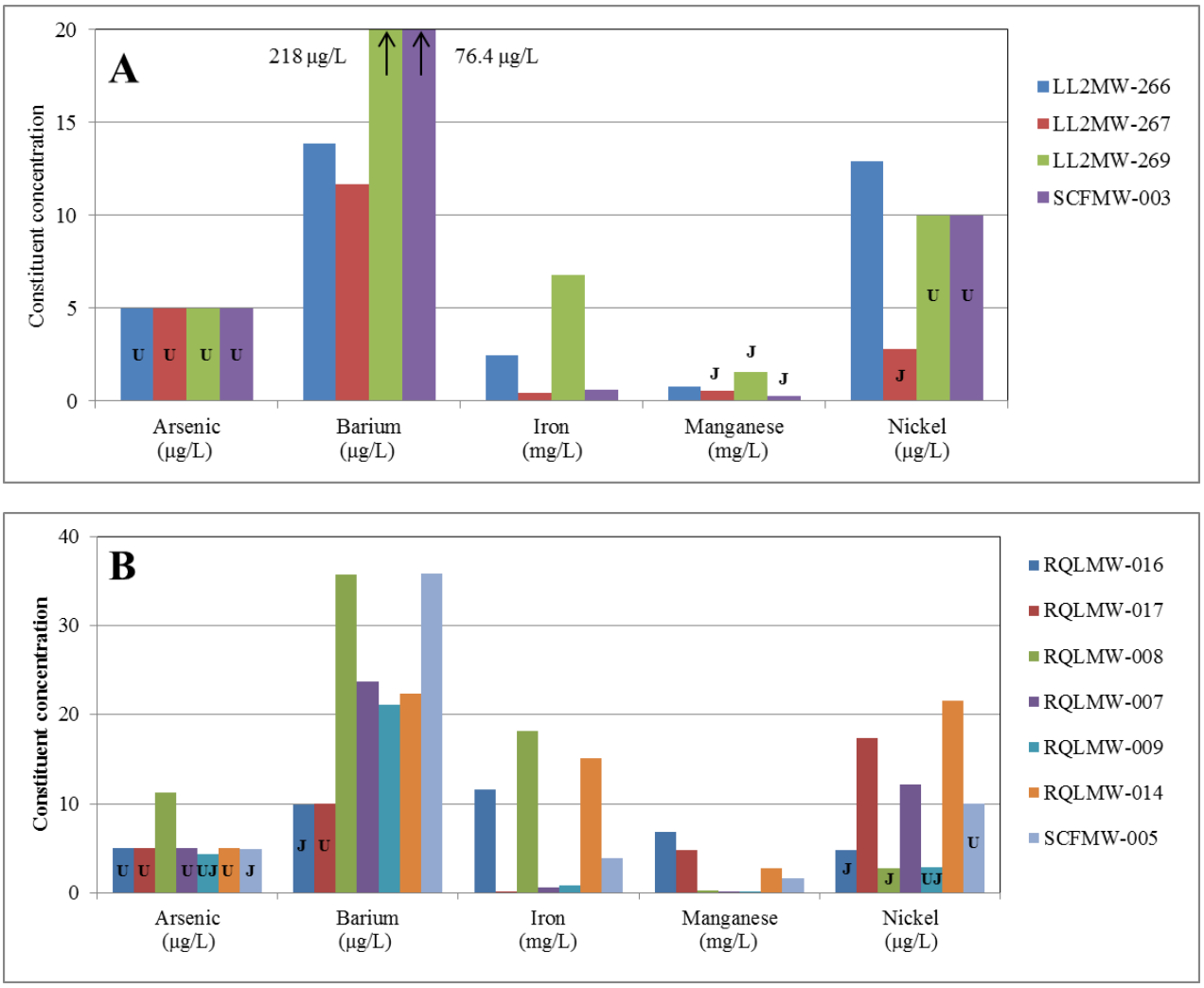

Figure 6. Concentrations of selected inorganic constituents at A. RVAAP-09 Load Line 2, and B. RVAAP-01 Ramsdell Quarry Landfill, April 4 through 7, 2011. (U, The constituent was analyzed for but not detected; UJ, the reported value is considered to an estimated Method Reporting Level; J, the quality-assurance criteria indicate that the quantitative values may be outside the normal expected range of precision; mg/L, milligrams per liter; µg/l, micrograms per liter).

For RVAAP-01 Ramsdell Quarry Landfill, arsenic, barium, and iron all show higher concentrations in samples from at least one of the wells at or near the landfill than in upgradient wells. As was the case for the RVAAP-09 Load Line 2 flow path, a similar assumption must be considered as those for the previous flow path if well SCFMW-005 is to be included in this flowpath, and if so, concentrations also decrease downgradient of this AOC because of some physical or geochemical process.

4.4 Comparison of purging methods

Among the different inorganic constituents, concentrations in groundwater samples collected from wells LL1MW-084 and LL4MW-198 by micropurge and traditional purge sampling methods exhibited a wide range (table 4, at the back of this report). For most other constituents, including volatile organic compounds, semivolatile organic compounds, pesticides, and PCBs, concentrations were at or below the reporting limit in samples from both purging methods (tables 5 through 9, at the back of this report). For samples that had detections of any constituent, concentrations obtained through the two purging methods were compared by means of the RPD (equation 2, Section 4, where x_1 is traditional purge and x_2 is micropurge; table 13). For these comparisons, positive RPDs indicate that concentrations of constituents collected through traditional sampling purge methods were greater than concentrations of constituents collected through micropurge sampling methods and negative RPDs indicate that traditional sampling purge methods resulted in concentrations that were less than those obtained through micropurge sampling methods.

Table 13. Comparison of results between traditional purge sampling and micropurge sampling where constituents were above reporting level collected in groundwater samples at RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011. Results in bold have relative percent differences greater than 10 percent.

[J, estimated value; B, constituent detected in associated method or trip blank sample; PG, percent difference between the original and confirmation analyses is greater than 10 percent]

Constituent (units)	Reporting level	Site	Sampling method: Traditional purge	Sampling method: Micro-purge	Relative percent difference
Inorganic constituents					
Aluminum (µg/L)	50	LL1MW-084	**404**	**246**	**48.6**
Barium (µg/L)	10	LL1MW-084	15.7	16.7	-6.2
		LL4MW-198	**10.3**	**8.7 J**	**16.8**
Cadmium (µg/L)	0.50	LL1MW-084	1.6	1.5	6.5
Calcium (mg/L)	1	LL1MW-084	**42.3**	**49.1**	**-14.9**
		LL4MW-198	27.5	27.3	0.7
Cobalt (µg/L)	5	LL1MW-084	**19.6**	**14.6**	**29.2**
Copper (µg/L)	5	LL1MW-084	9.3	9.9	-6.3
Iron (mg/L)	0.05	LL4MW-198	4.69	4.72	-0.6
Magnesium (mg/L)	1	LL1MW-084	3.2	2.9	9.8
		LL4MW-198	14.9	14.1	5.5
Manganese (mg/L)	0.010	LL1MW-084	**0.243**	**0.192**	**23.4**
		LL4MW-198	1.05	1.01	3.9
Nickel (µg/L)	10	LL1MW-084	**37**	**24.6**	**40.3**
		LL4MW-198	**32.2**	**25.3**	**24**
Potassium (mg/L)	1	LL1MW-084	2.5	2.42	3.3
		LL4MW-198	**0.717 B**	**0.591 J**	**19.3**
Sodium (mg/L)	1	LL1MW-084	3.14	2.92	7.3
		LL4MW-198	**5.07**	**5.63**	**-10.5**
Zinc (µg/L)	10	LL1MW-084	**72.4 J**	**49.3**	**38.0**
		LL4MW-198	64.4	61.6	4.4
Explosives and propellants					
1,3,5-Trinitrobenzene (µg/L)	0.11	LL1MW-084	**4.7 PG**	**3.3 J**	**35.0**
1,3-Dinitrobenzene (µg/L)	0.11	LL1MW-084	**0.86**	**0.41 J**	**70.9**
2,4,6-Trinitrotoluene (µg/L)	0.11	LL1MW-084	**11**	**8.4 J**	**26.8**
2-4-Dinitrotoluene (µg/L)	0.11	LL1MW-084	**1.2 J**	**1.7 J**	**-34.5**
2-Amino-4,6-dinitrotoluene (µg/L)	0.11	LL1MW-084	**15**	**13 J**	**14.3**
4-Amino-2,6-dinitrotoluene (µg/L)	0.11	LL1MW-084	**29**	**26 J**	**10.9**
HMX (µg/L)	0.11	LL1MW-084	**0.98 PG**	**0.79 J**	**21.5**
RDX (µg/L)	0.11	LL1MW-084	**0.59**	**0.42 J**	**33.7**

Relative percent differences for nine inorganic constituents exceeded ±10 percent: aluminum, barium, calcium, cobalt, manganese, nickel (2 samples), potassium, sodium, and zinc. It is important to note that, even though RPDs for some of these constituents were greater than 10 percent, the absolute difference between values may be so small that they are within the range of natural variability shown by field duplicates collected by the contractor. For explosives and propellants, eight compounds were detected above the reporting level, but all eight were "J" levels in the micropurge samples, indicating estimated concentrations: 1,3,5-trinitrobenzene, 1,3-dinitrobenzene, 2,4,6-trinitrotoluene, 2-4-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, HMX, and RDX. Seven of eight RPD values for explosives and propellants in table 13 were positive indicating that the measured concentrations were greater in traditional purge samples than in micropurge samples. All eight explosives and propellants listed in table 12 were detected in samples from well LL1MW-084 and not in LL4MW-198 and by both sampling methods. Similarly, the fact that no detections above the reporting limit of volatile organic compounds, semivolatile organic compounds, pesticides, or PCBs were determined from analyses of groundwater from wells LL1MW-084 or LL4MW-198 for either sampling method adds some confidence to the results provided by both sampling methods.

5.0 Discussion and Conclusion

The purposes of the sampling and of this report were to describe the geochemical conditions in shallow groundwater and explore whether concentrations of bis(2-ethylhexyl)phthalate are an artifact of micropurge sampling methods. Additionally, concentrations of selected constituents were examined along groundwater-flow paths to see whether differences could be observed beneath and downgradient of the AOCs.

Water types are calcium-magnesium-sulfate-bicarbonate waters, which is typical of groundwaters in northeast Ohio. All samples (except the one from LL4MW-197, which was oxic) were characterized as mixed (oxic-anoxic) by means of the methodology of Jurgens and others (2009). The sample from LL4MW-197 had the highest nitrate concentration (1.4 mg/L) and the highest uranium concentration (1.5 μg/L) of all groundwater samples collected in this study. This information is important towards the understanding of the fate and transport of contaminants: certain contaminants are relatively insoluble or degrade quickly under oxic conditions, whereas other contaminants are very soluble and may be persistent under these conditions. If monitored natural attenuation is being considered as a remediation strategy at RVAAP, redox conditions in shallow groundwater may enhance or limit attenuation for redox-sensitive contaminants. The isotope ratios of hydrogen and oxygen in groundwater samples collected at RVAAP suggest that groundwater is mostly derived from local precipitation and not from other sources (such as regional groundwater flow or deeper formation fluids). As above, this information is important towards developing remediation strategies. For example, if other sources of water were recharging the shallow groundwater (such as water from deeper geologic formations with regional flow components), contaminant migration could be more complex than would be suggested by following flow lines on a potentiometric surface map. As for the redox conditions described above, the isotopic signature of groundwater from well LL4MW-197 was different from other samples; however, chemical data provided in this report do not reveal any potential causes for this difference. Additional sampling of these isotopes in surface water and groundwater could help refine our understanding of recharge processes, groundwater/surface water interaction, isotope fractionation, and sources of water to wells.

With respect to the cation/anion balances and comparison of measured and computed specific conductance, several samples provided results that were less than ideal (the ideal being

cation/anion balances of zero and identical measured and computed specific conductances). For the cation/anion balances, 16 of 21 sets of analyses were greater than zero and 5 of 21 were less than zero indicating a high bias for one or more cations or a low bias for one or more anions. Of the five cation/anion balances that exceeded five percent, four of five were greater than zero and one of five was less than zero. For the specific-conductance comparisons, 13 of 21 samples had RPDs equal to or greater than ten percent above or below zero. Of the 13 greater than ten percent above or below zero, eleven samples were greater than zero and two were less than zero indicating that the measured specific conductance was greater more often than the computed specific conductance.

Without further evaluation of field and lab procedures, there were no direct indications as to causes of these deviations from ideal. Although a wide variety of inorganic constituents were analyzed in these samples, it is still possible that additional constituents that were not analyzed contribute to the ionic balance and specific conductance of the sample. Constituents included in these calculations from tables 3 through 9 (at the back of this report) show wide ranges in concentrations and no obvious outliers from visual examination alone. Selected ionic ratios were examined to determine whether any patterns emerged due to systematic high or low variations in constituents; however, the data as listed in table 14 show no particular patterns. For comparison, wells at RVAAP were grouped by aquifer and data from Ohio Environmental Protection Agency's (Ohio EPA; 2011) Ambient Ground Water Monitoring Network from four wells located five to eight miles to the northwest are included. Comparison of these ratios assumes that these ratios should be relatively consistent between samples and that differences in ratios are due

Table 14. Ionic ratios for groundwater samples collected at RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

[all units are dimensionless (meq/L / meq/L); green-colored values are more than one standard deviation above the mean; red-colored values are more than one standard deviation below the mean]

Site	HCO_3/ Cl	Na/ Ca	Na/ Cl	Ca/ Cl	Mg/ Cl	K/ Cl	SO_4/ Cl	Ca/ Mg	Ca/ SO_4	Ca/ HCO_3
Wells screened in unconsolidated glacial deposits										
Micropurge samples										
LL4MW-195	103	0.04	5.07	125	**55.2**	0.32	**94.4**	2.27	1.33	1.21
LL4MW-196	82.8	0.03	2.18	70.4	32.5	0.38	25.1	2.17	2.81	0.85
LL4MW-197	**218**	**0.01**	2.07	**184**	51.1	**0.92**	22.1	**3.60**	**8.31**	0.84
LL4MW-198	26.8	**0.18**	**7.24**	40.3	34.3	0.45	57.5	**1.17**	0.70	**1.50**
LL4MW-199	37.2	0.08	2.67	33.3	**13.2**	0.24	**9.67**	2.52	3.44	0.89
Traditional purge samples										
LL4MW-198	30.2	0.16	6.52	40.5	36.2	0.54	52.0	1.12	0.78	1.34
Mean	83.1	0.08	4.29	82.3	37.1	0.48	43.5	2.14	2.89	1.11
Standard deviation	73.2	0.07	2.29	60.4	15.0	0.24	31.0	0.92	2.88	0.28
Mean of nearby public supply-well samples (Ohio EPA, 2011)										
Garrettsville	9.24	0.12	1.48	12.1	4.78	0.14	5.42	2.52	2.22	1.30
Mantua	2.13	0.27	0.71	2.68	1.03	0.04	0.64	2.60	4.21	1.26
Wells screened in bedrock										
Micropurge samples										
LL1MW-081	45.1	0.03	2.13	69.0	23.0	1.33	56.0	3.00	1.23	1.53
LL1MW-082	81.1	0.03	2.12	74.7	45.5	1.45	51.7	1.64	1.44	0.92
LL1MW-084	17.1	0.05	4.74	91.4	8.91	**2.31**	**94.8**	**10.3**	0.96	**5.36**
LL2MW-266	38.9	0.41	**9.49**	23.1	18.1	0.69	12.6	1.27	1.84	0.59
LL2MW-267	24.2	0.41	**8.63**	20.9	17.3	**0.16**	18.9	1.21	1.10	0.87
LL2MW-269	8.31	0.18	**0.96**	**5.47**	4.49	**0.28**	**2.01**	1.22	2.72	0.66
RQLMW-007	105	0.03	2.69	81.4	69.8	1.63	53.3	1.17	1.53	0.78
RQLMW-008	**204**	0.06	2.59	45.3	**206**	1.49	35.5	0.22	1.28	0.22
RQLMW-009	41.8	0.11	2.64	23.5	28.4	**2.5**	8.99	0.83	2.61	0.56
RQLMW-014	5.47	**0.32**	**1.19**	**3.72**	4.26	**0.32**	**7.38**	0.87	0.50	0.68
RQLMW-016	20.7	0.02	1.80	**99.3**	25.1	**0.39**	**123**	3.95	0.80	**4.79**
SCFMW-003	**144**	0.09	**7.91**	93.0	62.5	0.89	13.3	1.49	**7.00**	0.65
SCFMW-004	97.1	0.07	**9.47**	**127**	84.5	1.00	**117**	1.51	1.08	1.31
SCFMW-005	50.1	0.09	5.32	57.5	42.9	0.68	59.1	1.34	0.97	1.15
Traditional purge samples										
LL1MW-084	14.8	0.06	4.40	68.0	8.49	**2.06**	69.8	**8.02**	0.97	**4.58**
Mean	59.8	0.13	4.40	58.9	43.3	1.15	48.3	2.53	1.74	1.64
Standard deviation	56.8	0.14	3.06	37.4	51.5	0.76	39.8	2.86	1.58	1.73
Mean of nearby public supply-well samples (Ohio EPA, 2011)										
Shalersville	1.77	0.28	0.78	2.78	1.01	0.03	1.21	2.77	2.30	1.58
Hiram	5.21	0.14	0.82	5.87	3.31	0.09	2.39	1.77	2.46	1.13

to sampling and (or) analytical error alone. The ratios show wide ranges and no obvious patterns from visual examination alone.

Comparison of RPDs for inorganic constituents between samples collected by traditional sampling purge methods and micropurge sampling methods revealed that results for ten samples (including two for nickel) were greater than ten percent: eight of ten RPDs that exceeded ten percent were positive whereas two of ten were negative (table 12). This comparison indicates that either a potential high bias exists for traditional sampling purge methods or a low bias exists for micropurge sampling methods. For eight explosives and propellants detected above the reporting limit in groundwater samples from LL1MW-084, seven resulted in a positive RPD greater than 10 percent and one resulted in a negative RPD.

Three possible explanations may exist for the discrepancy between analytical results obtained through the two different sampling methods: 1. elevation or decrease in constituent concentrations due to a significant rainfall event, 2. elevated turbidity in some of the micropurge samples, and 3. groundwater contributions of from the same aquifer may differ between small-volume micropurge sampling and relatively large volume traditional-purge sampling. Each of these explanations are described in more detail below.

First, during sampling on April 4, field crews noted that more than inch of rain fell at RVAAP. Rain that infiltrates into the ground may alter local groundwater conditions by increasing concentrations of some constituents through leaching of salts in the unsaturated zone or decreasing concentrations of some constituents by dilution. Additionally, changes in groundwater water levels and gradients can result in focused recharge. Therefore, large differences in water-quality results may be due to naturally changing hydrologic conditions between sampling dates (including rainfall or snowmelt events).

Second, the turbidity measured in groundwater samples collected with micropurge sampling methods were quite variable and ranged from 0 to 835 nephelometric turbidity units (NTUs). In the case of wells at RVAAP, elevated turbidity is likely derived from aquifer solids. USGS sampling guidelines state that turbidity should generally be less than five NTUs in most groundwater systems and wells with turbidity greater 25 NTUs may indicate failure of the well construction or a poorly developed well (USGS, variously dated). USGS groundwater sampling criteria recommend that, after purging three casing volumes, turbidity should equilibrate between five successive readings to plus or minus ten percent when turbidity is less than 100 NTUs before sampling can begin. USEPA guidelines published in Yeskis and Zavala (2002) state that "when possible, especially when sampling for contaminants that may be biased by the presence of turbidity, the turbidity reading is desired to stabilize at a value below 10 NTUs." Also, "when samples are collected for metals, semivolatile organic compounds, and pesticides, every effort must be made to reduce turbidity to 10 NTUs or less (not just the stabilization of turbidity) prior to the collection of the water sample."

For groundwater samples collected using the micropurge sampling method during the April 2011 sampling event, 16 of 18 turbidity values were greater than 25 NTU at the time of sampling (turbidity data were not available for one sample). As noted in the contractor's results for explosives and propellants from this sampling event, "due to excessive particulates, LL4MW-195, LL4MW-196, LL4MW-198, LL4MW-199, BKGMW-006, RQLMW-008, RQLMW-007, B12MW-012, LL2MW-269, and ASYMW-003 were filtered in the laboratory." Because micropurge sampling methods depend on wells that are in good hydraulic connection with the aquifer materials and on minimal drawdown and turbidity during sampling, the condition of some wells at RVAAP may be in question.

Third, when samples collected with micropurge sampling methods are compared to samples collected with traditional sampling methods, it may be the case that different segments and volumes of aquifer material contribute water to the well, thereby obscuring meaningful comparisons. Yeskis and Zavala (2002) caution that there are two potential disadvantages of micropurge sampling methods: that the reproducibility of the sampling results may be lower and that the sample may be collected from a relatively small portion of the aquifer volume. When using micropurge sampling alone, reproducibility may vary between sampling rounds because even small changes in the position of the sampling pump intake can result in potentially different zones within the aquifer being sampled.

The two samples collected with traditional sampling purge methods for bis(2-ethylhexyl)phthalate resulted in concentrations below the reporting limit of 10 μg/L. Micropurge sampling methods provided estimated values of 1.4 and 2.2 μg/L for the same two wells. The facts that plasticizers (including bis(2-ethylhexyl)phthalate) were not used at RVAAP and that this compound also was detected in field blanks at similar concentrations reveal non-conclusive results with respect to groundwater impact. These facts also suggest that contamination from sampling, processing, or laboratory analysis is likely and that bis(2-ethylhexyl)phthalate is not a contaminant in groundwater.

To evaluate changes in water chemistry along groundwater flow paths, wells need to be situated in such a way that horizontal and vertical flow components can be verified. The two flow paths examined in this study were only estimates based on coarse-scale maps and did not consider vertical flow components between shallow and deep lithologic units; however, the examination of constituent concentrations along groundwater-flow paths can be a valuable tool in assessing the potential fate of contaminants and off-site contaminant migration. Nests of wells

screened in the different lithologic units would allow measurement of vertical and horizontal gradients to better define groundwater flow paths.

6.0 References

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Appendices

APPENDIX A: Summary of water-quality data for groundwater samples collected at RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

Abbreviations and data qualifiers used throughout following tables

<	Less than
--	Not measured or data unavailable
B	The B flag is used for both organic and inorganic analyses when the constituent is found in the associated method or trip blank as well as in the sample.
e	Estimated value (USGS nomenclature). For alkalinity values with the "e" qualifier, a warning message given by the alkalinity calculation software on the USGS Web site http://or.water.usgs.gov/alk/ indicated that "something significant, other than hydroxide, carbonate, and bicarbonate, was neutralized in this titration. The computed values for carbonate and bicarbonate may not represent their true concentrations in the sample and should be reported only as estimates."
ft	Feet
J	The identification of the constituent is acceptable, but the quality-assurance criteria indicate that the quantitative values may be outside the normal expected range of precision (i.e. the quantitative value is considered estimated).
mg/L	Milligrams per liter
NTU	Nephelometric turbidity units
per mil	Parts per thousand relative to a standard
PG	Percent difference between the original and confirmation analyses is greater than 10 percent.
µg/L	Micrograms per liter
µS/cm	MicroSiemens per centimeter
U	The constituent was analyzed for but not detected. The value preceding the U is the Method Reporting Limit.
UJ	This flag is a combination of the U and J qualifiers which indicates that the constituent is not present. The reported value is considered to an estimated Method Reporting Level.

Table 3. Water-quality physical measurements in groundwater samples from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

Site	USGS Site Number	USGS Site ID	Date of sampling	Water level (ft below land surface)	Temp-erature, water (degrees Celsius)	Specific conduct-ance (µS/cm)
			Micropurge samples			
LL1MW-081	PO-138	411213081010000	04/05/11	30.29	9.2	471
LL1MW-082	PO-139	411208081005600	04/05/11	28.35	8.8	355
LL1MW-084	PO-140	411210081005100	04/05/11	28.30	9.5	358
LL2MW-266	PO-141	411159081013800	04/07/11	10.53	9.8	158
LL2MW-267	PO-142	411154081013900	04/07/11	8.79	8.2	564
LL2MW-269	PO-143	411134081012600	04/07/11	16.25	9.6	337
LL4MW-195	PO-144	411052081033200	04/04/11	10.12	8.7	1,470
LL4MW-196	PO-145	411054081033000	04/04/11	13.25	10.0	543
LL4MW-197	PO-146	411056081032900	04/04/11	14.59	9.7	706
LL4MW-198	PO-147	411056081033400	04/04/11	6.59	8.2	380
LL4MW-199	PO-148	411048081032900	04/04/11	7.05	11.7	675
RQLMW-007	PO-149	411244081010900	04/06/11	5.62	9.0	420
RQLMW-008	PO-150	411242081010800	04/06/11	6.28	7.3	742
RQLMW-009	PO-151	411242081010400	04/06/11	4.35	6.4	219
RQLMW-014	PO-152	411248081010100	04/06/11	20.00	8.8	210
RQLMW-016	PO-153	411240081011200	04/06/11	37.35	9.0	2,100
SCFMW-003	PO-154	411119081011200	04/06/11	8.46	9.0	710
SCFMW-004	PO-155	411142081003300	04/06/11	flowing	8.9	1,100
SCFMW-005	PO-156	411251081005400	04/05/11	10.56	9.6	900
			Traditional purge samples			
LL1MW-084	PO-140	411210081005100	04/07/11	26.89	11.1	290
LL4MW-198	PO-147	411056081033400	04/07/11	6.32	10.1	270
Field blank	--	--	04/07/11	--	--	--

Table 3. Water-quality physical measurements in groundwater samples from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011 – continued.

Site	pH (standard units)	Dissolved oxygen (mg/L)	Turbidity (NTU)	Alkalinity, incremental (mg/L) as $CaCO_3$)	Carbonate, incremental (mg/L) as CO_3^{2-})	Bicarbonate, incremental (mg/L) as HCO_3^-)
			Micropurge samples			
LL1MW-081	6.3	4.3	805	108	0.0	132
LL1MW-082	6.1	0.6	247	104	0.0	127
LL1MW-084	5.7	8.8	147	22.7	0.0	27.9
LL2MW-266	5.7	8.5	29	87.9	0.0	107
LL2MW-267	6.0	5.1	400	109	0.0	133
LL2MW-269	5.9	1.0	298	118	0.0	143
LL4MW-195	6.6	1.8	621	408	0.6 e	497 e
LL4MW-196	7.1	3.1	405	188	0.4 e	228 e
LL4MW-197	7.1	8.3	133	310	0.9 e	376 e
LL4MW-198	6.1	9.0	431	45.5	0.0	55.4
LL4MW-199	6.9	6.6	--	258	0.2	314
RQLMW-007	6.6	3.4	835	207	0.0	253
RQLMW-008	6.9	0.6	478	376	0.2	457
RQLMW-009	6.5	2.5	109	65.0	0.0	79.2
RQLMW-014	5.6	0.7	156	38.6	0.0	47.1
RQLMW-016	6.5	6.0	133	196.1	0.1	239
SCFMW-003	6.8	3.6	26	284	0.2	346
SCFMW-004	6.9	3.4	0	288	0.3	351
SCFMW-005	6.7	3.8	3	205	0.1	250
			Traditional purge samples			
LL1MW-084	5.8	4.70	1.3	22.8	0.0 e	28.1 e
LL4MW-198	6.0	0.56	3.8	51.0	0.0	62.3
Field blank	--	--	--	--	--	--

Table 4. Selected inorganic constituents in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

	Boron (µg/L)	Bromide (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Lithium (µg/L)	Molyb-denum (µg/L)	Nitrate, as N (mg/L)
Micropurge samples							
LL1MW-081	66 J	0.5 U	1.7	0.059 B	10 U	20 U	0.1 U
LL1MW-082	47 J	0.5 U	0.91 B	0.061 B	10 U	20 U	0.1 U
LL1MW-084	83 J	0.5 U	0.95 B	0.033 B	10 U	20 U	0.86
LL2MW-266	29 J	0.5 U	1.6	0.083 B	23	20 U	0.1 U
LL2MW-267	26 J	0.5 U	3.2	0.29 B	23	20 U	0.1 U
LL2MW-269	120	0.5 U	10	0.16 B	49	20 U	0.1 U
LL4MW-195	41 J	0.5 U	2.8	0.18 B	21	20 U	0.1 U
LL4MW-196	24 J	0.5 U	1.6	0.44 B	5.4 J	20 U	0.22
LL4MW-197	28 J	0.5 U	1	0.24 B	3.8 J	20 U	1.4
LL4MW-198	28 J	0.5 U	1.2	0.24 B	9.3 J	20 U	0.1 U
LL4MW-199	27 J	0.5 U	4.9	0.15 B	11	20 U	0.1 U
RQLMW-007	270	0.5 U	1.4	0.14 B	10 U	5.5 J	0.04 B
RQLMW-008	170	0.5 U	1.3	0.30 B	10 U	6.0 J	0.1 U
RQLMW-009	27 J	0.5 U	1.1	0.11 B	10 U	20 U	0.071 B
RQLMW-014	13 J	0.5 U	5	0.11 B	4.3 J	20 U	0.1 U
RQLMW-016	21 J	0.5 U	6.7	0.37 B	110	20 U	0.1 U
SCFMW-003	29 J	0.5 U	1.4	0.12 B	15	20 U	0.1 U
SCFMW-004	110	0.5 U	2.1	0.039 B	15	20 U	0.1 U
SCFMW-005	28 J	0.5 U	2.9	0.06 B	14	5.8 J	0.1 U
Traditional purge samples							
LL1MW-084	79 J	0.5 U	1.1	0.07 B	7.5 J	20 U	0.74
LL4MW-198	26 J	0.5 U	1.2	0.16 B	8.3 J	20 U	0.033 B
Field Blank	100 U	0.5 U	1 U	1 U	10 U	20 U	0.1 U

Table 4. Selected inorganic constituents in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011--continued.

	Nitrite, as N (mg/L)	Nitrogen, as ammonia (mg/L)	Phosphate, as P, ortho- (mg/L)	Silica, as SiO_2 (mg/L)	Sulfate (mg/L)	Uranium (µg/L)
			Micropurge samples			
LL1MW-081	0.1 U	2 U	0.5 U	9.6	129	0.31 J
LL1MW-082	0.1 U	2 U	0.5 U	18	63.7	0.055 J
LL1MW-084	0.1 U	2 U	0.5 U	10	122	0.47 J
LL2MW-266	0.1 U	2 U	0.5 U	11	27.2	0.043 JB
LL2MW-267	0.1 U	2 U	0.37 B	15	82	0.066 JB
LL2MW-269	0.1 U	2 U	0.5 U	8.8	27.2	1 U
LL4MW-195	0.1 U	2 U	0.45 B	21	358	0.97 JB
LL4MW-196	0.1 U	4.5	0.5 U	15	54.4	0.12 JB
LL4MW-197	0.1 U	2 U	0.5 U	12	30	1.5 B
LL4MW-198	0.1 U	2 U	0.5 U	22	93.4	0.054 JB
LL4MW-199	0.1 U	0.84 B	0.5 U	19	64.2	0.2 JB
RQLMW-007	0.1 U	2 U	0.79	15	101	1.3
RQLMW-008	0.1 U	0.84 B	0.17 B	9.3	62.6	0.37 J
RQLMW-009	0.1 U	2 U	1.3	11	13.4	0.11 J
RQLMW-014	0.1 U	2 U	0.5 U	14	50	1 U
RQLMW-016	0.1 U	2 U	0.19 B	18	1120	0.38 J
SCFMW-003	0.1 U	2 U	0.5 U	12	25.2	0.026 J
SCFMW-004	0.1 U	7.2	0.25 B	13	334	1 U
SCFMW-005	0.1 U	2.8	0.22 B	16	232	0.21 J
			Traditional purge samples			
LL1MW-084	0.1 U	0.84 B	0.18 B	11	104	0.62 JB
LL4MW-198	0.1 U	0.84 B	0.5 U	22	84.5	1 U
Field Blank	0.1 U	2 U	0.5 U	0.5 U	1 U	1 U

Table 4. Selected inorganic constituents in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011--continued.

	Aluminum (µg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Calcium (µg/L)	Chromium (µg/L)
Micropurge samples								
LL1MW-084	246	2.0 U	5.0 U	16.7	1 U	1.5	49,100	5.0 U
LL4MW-198	50.0 U	2.0 U	5.0 U	8.7 J	1 U	0.50 U	27,300	5.0 U
Traditional purge samples								
LL1MW-084	404	2.0 U	5.0 U	15.7	1 U	1.6	42,300	5.0 U
LL4MW-198	34.4 B	2.0 U	5.0 U	10.3	1 U	0.50 U	27,500	5.0 U
Field blank	50.0 U	2.0 U	5.0 U	10 U	1 U	0.50 U	1,000 U	5.0

	Cobalt (µg/L)	Copper (µg/L)	Cyanide (mg/L)	Iron (µg/L)	Lead (µg/L)	Magnesium (µg/L)	Manganese (µg/L)	Mercury (µg/L)
Micropurge samples								
LL1MW-084	14.6	9.9	0.01 UJ	50.0 U	3.0 U	2,900	192	0.20 U
LL4MW-198	5.0 U	5.0 U	0.01 UJ	4,720	3.0 U	14,100	1010	0.20 U
Traditional purge samples								
LL1MW-084	19.6	9.3	0.01 U	50.0 U	3.0 U	3,200	243 J	0.20 U
LL4MW-198	5.0 U	5.0 U	0.01 U	4,690	3.0 U	14,900	1050	0.20 U
Field blank	5.0 U	5.0 U	0.01 U	50.0 U	3.0 U	1,000 U	10 U	0.20 U

	Nickel (µg/L)	Potassium (µg/L)	Selenium (µg/L)	Silver (µg/L)	Sodium (µg/L)	Thallium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
Micropurge samples								
LL1MW-084	24.6	2,420	5 U	5 U	2,920	0.32 U	10.0 U	49.3
LL4MW-198	25.3	591 J	5 U	5 U	5,630	1.0 U	10.0 U	61.6
Traditional purge samples								
LL1MW-084	37	2,500	5 U	5 U	3,140	0.55 B	10.0 U	72.4 J
LL4MW-198	32.2	717 B	5 U	5 U	5,070	1.0 U	10.0 U	64.4
Field blank	10 U	1,000 U	5 U	5 U	1,000 U	1.0 U	10.0 U	4.3 BJ

Table 5. Explosives and propellants in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

	1,3,5-Trinitro-benzene (µg/L)	1,3-Dinitro benzene (µg/L)	2,4,6-Trinitro-tolouene (µg/L)	2,4-Dinitro toluene (µg/L)	2,6-Dinitro toluene (µg/L)	2-Amino-4,6-dinitro toluene (µg/L)
Micropurge samples						
LL1MW-084	3.3 J	0.41 J	8.4 J	1.7 J	0.69 J	13 J
LL4MW-198	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U	0.098 U
Traditional purge samples						
LL1MW-084	4.7 PG	0.86	11	2.8	1.1	15
LL4MW-198	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Field blank	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U

	2-Nitro-toluene (µg/L)	3-Nitro-toluene (µg/L)	4-Amino-2,6-Dinitro toluene (µg/L)	4-Nitro toluene (µg/L)	HMX (µg/L)	Nitro-benzene (µg/L)
Micropurge samples						
LL1MW-084	0.55 U	0.55 U	26 J	0.55 U	0.79 J	0.096 J
LL4MW-198	0.49 U	0.49 U	0.098 U	0.49 U	0.098 U	0.098 U
Traditional purge samples						
LL1MW-084	0.5 U	0.5 U	29	0.5 U	0.98 PG	0.11 U
LL4MW-198	0.5 U	0.5 U	0.11 U	0.5 U	0.11 U	0.11 U
Field blank	0.5 U	0.5 U	0.11 U	0.5 U	0.11 U	0.11 U

	Nitro-cellul-ulose (mg/L)	Nitro-glyc-erin (µg/L)	Nitro-guan-idine (µg/L)	PETN (µg/L)	RDX (µg/L)	Tetryl (µg/L)
Micropurge samples						
LL1MW-084	2.0 U	0.72 U	20 U	0.72 U	0.42 J	0.11 U
LL4MW-198	2.0 U	0.64 U	20 U	0.64 U	0.098 U	0.098 U
Traditional purge samples						
LL1MW-084	2.0 U	0.69 U	20 U	0.69 U	0.59	0.11 U
LL4MW-198	2.0 U	0.69 U	20 U	0.69 U	0.11 U	0.11 U
Field blank	2.0 U	0.7 U	20 U	0.7 U	0.11 U	0.11 U

Table 6. Pesticides and polychlorinated biphenyls (PCBs) in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

	4,4'-DDD (µg/L)	4,4'-DDE (µg/L)	4,4'-DDT (µg/L)	Aldrin (µg/L)	alpha-BHC (µg/L)	alpha-Chordane (µg/L)
Micropurge samples						
LL1MW-084	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ
LL4MW-198	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ	0.03 UJ
Traditional purge samples						
LL1MW-084	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
LL4MW-198	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Field blank	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

	Beta-BHC (µg/L)	Delta-BHC (µg/L)	Dield-rin (µg/L)	Endo-sulfan I (µg/L)	Endo-sulfan II (µg/L)	Endo-sulfan sulfate (µg/L)
Micropurge samples						
LL1MW-084	0.03 UJ	0.03 UJ	0.03 UJ	0.025 UJ	0.025 UJ	0.03 UJ
LL4MW-198	0.03 U	0.03 UJ	0.03 UJ	0.025 UJ	0.025 UJ	0.03 UJ
Traditional purge samples						
LL1MW-084	0.15 U	0.15 U	0.15 U	0.12 U	0.12 U	0.15 U
LL4MW-198	0.03 U	0.03 U	0.03 U	0.025 U	0.025 U	0.03 U
Field blank	0.01 U7	0.03 U	0.03 U	0.025 U	0.025 U	0.03 U

	Endrin (µg/L)	Endrin aldehyde (µg/L)	Endrin ketone (µg/L)	Gamma-BHC (Lindane) (µg/L)	Gamma-Chlor-dane (µg/L)	Hepta-chlor (µg/L)
Micropurge samples						
LL1MW-084	0.03 UJ	0.03 U	0.03 U	0.03 UJ	0.03 UJ	0.03 UJ
LL4MW-198	0.03 UJ	0.03 UJ	0.03 U	0.03 UJ	0.03 UJ	0.03 UJ
Traditional purge samples						
LL1MW-084	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
LL4MW-198	0.03 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U
Field blank	0.03 U	0.03 U	0.03 UJ	0.03 U	0.03 U	0.03 U

Table 6. Pesticides and polychlorinated biphenyls (PCBs) in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011--continued.

	Hepta-chlor epoxide (µg/L)	Methoxy-chlor (µg/L)	Toxa-phene (µg/L)	Aroclor PCB-1016 (µg/L)	Aroclor PCB-1221 (µg/L)	Aroclor PCB-1232 (µg/L)
Micropurge samples						
LL1MW-084	0.03 UJ	0.10 UJ	2.0 UJ	0.50 UJ	0.50 UJ	0.50 UJ
LL4MW-198	0.03 UJ	0.10 UJ	2.0 UJ	0.50 UJ	0.50 UJ	0.50 UJ
Traditional purge samples						
LL1MW-084	0.15 U	0.5 U	10 U	0.50 U	0.50 U	0.50 U
LL4MW-198	0.03 U	0.10 U	2.0 U	0.50 U	0.50 U	0.50 U
Field blank	0.03 U	0.10 U	2.0 U	0.50 U	0.50 U	0.50 U

	Aroclor PCB-1242 (µg/L)	Aroclor PCB-1248 (µg/L)	Aroclor PCB-1254 (µg/L)	Aroclor PCB-1260 (µg/L)
Micropurge samples				
LL1MW-084	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ
LL4MW-198	0.50 UJ	0.50 UJ	0.50 UJ	0.50 UJ
Traditional purge samples				
LL1MW-084	0.50 U	0.50 U	0.50 U	0.50 U
LL4MW-198	0.50 U	0.50 U	0.50 U	0.50 U
Field blank	0.50 U	0.50 U	0.50 U	0.50 U

Table 7. Volatile organic compounds in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

	1,1,1-Tri-chloro-ethane (µg/L)	1,1,2,2-Tetra-chloro-ethane (µg/L)	1,1,2-Tri-chloro-ethane (µg/L)	1,1-Di-chloro-ethane (µg/L)	1,1-Di-chloro-ethene (total) (µg/L)
Micropurge samples					
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Traditional purge samples					
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Field blank	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

	1,2-Di-bromo-methane (µg/L)	1,2-Di-chloro ethane (µg/L)	1,2-Di-chloro-ethene (total) (µg/L)	1,2-Di-chloro propane (µg/L)	2-But-anone (µg/L)
Micropurge samples					
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	10 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Traditional purge samples					
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	10 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Field blank	1.0 U	1.0 U	1.0 U	1.0 U	10 U

	2-Hexa-none (µg/L)	4-Methyl-2-penta none (µg/L)	Acetone (µg/L)	Benzene (µg/L)	Bromo-chloro-methane (µg/L)
Micropurge samples					
LL1MW-084	10 U	10 U	10 U	1.0 U	1.0 U
LL4MW-198	10 U	10 U	10 U	1.0 U	1.0 U
Traditional purge samples					
LL1MW-084	10 U	10 U	10 U	1.0 U	1.0 U
LL4MW-198	10 U	10 U	10 U	1.0 U	1.0 U
Field blank	10 U	10 U	10 U	1.0 U	1.0 U

Table 7. Volatile organic compounds in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011--continued.

	Bromo-di-chloro methane (µg/L)	Bromo-form (µg/L)	Bromo-methane (µg/L)	Carbon disulfide (µg/L)	Carbon tetra-chloride (µg/L)
			Micropurge samples		
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
			Traditional purge samples		
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Field blank	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

	Chloro-benzene (µg/L)	Chloro-ethane (µg/L)	Chloro-form (µg/L)	Chloro-methane (µg/L)	cis-1,2-di chloro ethene (µg/L)
			Micropurge samples		
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
			Traditional purge samples		
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Field blank	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

	cis-1,3-Di-chloro-propene (µg/L)	Di-bromo-chloro-methane (µg/L)	Ethyl-benzene (µg/L)	m & p-xylenes (µg/L)	Methyl-ene chlo-ride (µg/L)
			Micropurge samples		
LL1MW-084	1.0 U	1.0 U	1.0 U	2.0 U	2.0 UJ
LL4MW-198	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U
			Traditional purge samples		
LL1MW-084	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U
Field blank	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U

Table 7. Volatile organic compounds in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011--continued.

	o-xylene (µg/L)	Styrene (µg/L)	Toluene (µg/L)	Total xylenes (µg/L)	trans-1,2-dichloro-ethene (µg/L)
			Micropurge samples		
LL1MW-084	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
			Traditional purge samples		
LL1MW-084	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
Field blank	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U

	trans-1,3-Dichloro propene (µg/L)	Tri-chloro ethene (µg/L)	Vinyl chloride (µg/L)
		Micropurge samples	
LL1MW-084	1.0 U	1.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U
		Traditional purge samples	
LL1MW-084	1.0 U	1.0 U	1.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U
Field blank	1.0 U	1.0 U	1.0 U

Table 8. Semivolatile organic compounds in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

	1,2,4-tri-chloro benzene (µg/L)	1,2-di-chloro benzene (µg/L)	1,3-di-chloro benzene (µg/L)	1,4-di-chloro benzene (µg/L)	2,2-oxybis (1-chloro propane) (µg/L)	2,4,5-tri-chloro phenol (µg/L)
Micropurge samples						
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
Traditional purge samples						
LL1MW-084	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
LL4MW-198	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
Field Blank	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U

	2,4,6-Trichloro phenol (µg/L)	2,4-Dichloro phenol (µg/L)	2,4-Dimethyl phenol (µg/L)	2,4-Dinitro phenol (µg/L)	2-Chloro naphtha lene (µg/L)	2-Chloro phenol (µg/L)
Micropurge samples						
LL1MW-084	5.0 U	2.0 U	2.0 U	5.0 UJ	1.0 U	1.0 U
LL4MW-198	5.0 U	2.0 U	2.0 U	5.0 UJ	1.0 U	1.0 U
Traditional purge samples						
LL1MW-084	5.0 U	2.0 U	2.0 U	5.0 U	1.0 U	1.0 U
LL4MW-198	5.0 U	2.0 U	2.0 U	5.0 U	1.0 U	1.0 U
Field Blank	5.0 U	2.0 U	2.0 U	5.0 U	1.0 U	1.0 U

	2-Methyl-naphtha lene (µg/L)	2-Methyl phenol (µg/L)	2-Nitro aniline (µg/L)	2-Nitro phenol (µg/L)	3, 3-Dichloro benzidine (µg/L)	3-Nitro aniline (µg/L)
Micropurge samples						
LL1MW-084	0.20 U	1.0 U	2.0 U	2.0 U	5.0 U	2.0 U
LL4MW-198	0.20 U	1.0 U	2.0 U	2.0 U	5.0 U	2.0 U
Traditional purge samples						
LL1MW-084	0.20 U	1.0 U	2.0 U	2.0 U	5.0 U	2.0 U
LL4MW-198	0.20 U	1.0 U	2.0 U	2.0 U	5.0 U	2.0 U
Field Blank	0.20 U	1.0 U	2.0 U	2.0 U	5.0 U	2.0 U

Table 8. Semivolatile organic compounds in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011--continued.

	4,6-Dinitro-2-methyl phenol (µg/L)	4-Bromo-phenyl phenyl ether (µg/L)	4-Chloro 3-methyl phenol (µg/L)	4-Chloro aniline (µg/L)	4-Chloro-phenyl phenyl ether (µg/L)	4-Methyl phenol (µg/L)
Micropurge samples						
LL1MW-084	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U
LL4MW-198	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Traditional purge samples						
LL1MW-084	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U
LL4MW-198	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Field Blank	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U

	4-Nitro-analine (µg/L)	4-Nitro-phenol (µg/L)	Ace-naphtha-ene (µg/L)	Ace-naphthyl-ene (µg/L)	Anthra-cene (µg/L)	Benzo(a) anthra-cene (µg/L)
Micropurge samples						
LL1MW-084	2.0 U	5.0 UJ	0.20 U	0.20 U	0.20 U	0.20 U
LL4MW-198	2.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U
Traditional purge samples						
LL1MW-084	2.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U
LL4MW-198	2.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U
Field Blank	2.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U

	Benzo(a) pyrene (µg/L)	Benzo(b)--fluor-anthene (µg/L)	Benzo-(g,h,i)-perylene (µg/L)	Benzo(k) fluor anthene (µg/L)	Benzoic acid (µg/L)	Benzyl alcohol (µg/L)
Micropurge samples						
LL1MW-084	0.20 U	0.20 U	0.20 U	0.20 U	10 U	5.0 U
LL4MW-198	0.20 U	0.20 U	0.20 U	0.20 U	10 U	5.0 U
Traditional purge samples						
LL1MW-084	0.20 U	0.20 U	0.20 U	0.20 U	10 U	5.0 U
LL4MW-198	0.20 U	0.20 U	0.20 U	0.20 U	10 U	5.0 U
Field Blank	0.20 U	0.20 U	0.20 U	0.20 U	10 U	5.0 U

Table 8. Semivolatile organic compounds in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011--continued.

	bis-(2-Chloro-ethoxy) methane (µg/L)	bis-(2-Chloro-ethyl) ether (µg/L)	bis-(2-Ethyl hexyl) phthalate (µg/L)	Butyl benzyl phthalate (µg/L)	Carb-azole (µg/L)	Chrys-ene (µg/L)
Micropurge samples						
LL1MW-084	1.0 U	1.0 U	1.4 JB	1.0 U	1.0 U	0.20 U
LL4MW-198	1.0 U	1.0 U	2.2 J	1.0 U	1.0 U	0.20 U
Traditional purge samples						
LL1MW-084	1.0 U	1.0 U	10 U	1.0 U	1.0 U	0.20 U
LL4MW-198	1.0 U	1.0 U	10 U	1.0 U	1.0 U	0.20 U
Field Blank	1.0 U	1.0 U	2.2 JB	1.0 U	1.0 U	0.20 U

	Dibenzo-(a,h)-anthra-cene (µg/L)	Di-benzo-furan (µg/L)	Di-ethyl phthalate (µg/L)	Di-methyl phthalate (µg/L)	Di-n-butyl phthalate (µg/L)	Di-n-octyl phthalate (µg/L)
Micropurge samples						
LL1MW-084	1.0 U	1.0 U	1.4 JB	1.0 U	1.0 U	0.20 U
LL4MW-198	1.0 U	1.0 U	2.2 J	1.0 U	1.0 U	0.20 U
Traditional purge samples						
LL1MW-084	1.0 U	1.0 U	10 U	1.0 U	1.0 U	0.20 U
LL4MW-198	1.0 U	1.0 U	10 U	1.0 U	1.0 U	0.20 U
Field Blank	1.0 U	1.0 U	2.2 JB	1.0 U	1.0 U	0.20 U

	Fluor-anthene (µg/L)	Fluorene (µg/L)	Hexa-chloro-benzene (µg/L)	Hexa-chloro-buta diene (µg/L)	Hexa-chloro-cyclo-penta-diene (µg/L)	Hexa-chloro ethane (µg/L)
Micropurge samples						
LL1MW-084	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U
LL4MW-198	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U
Traditional purge samples						
LL1MW-084	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U
LL4MW-198	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U
Field Blank	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U

Table 8. Semivolatile organic compounds in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011--continued.

	Indeno (1,2,3-cd) pyrene (µg/L)	Iso-phorone (µg/L)	Naphtha-lene (µg/L)	Nitro-benzene (µg/L)	N-Nitroso--di-n-propyl amine (µg/L)	N-Nitroso diphenyl amine (µg/L)
Micropurge samples						
LL1MW-084	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U
LL4MW-198	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U
Traditional purge samples						
LL1MW-084	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U
LL4MW-198	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U
Field Blank	0.20 U	0.20 U	0.20 U	1.0 U	10 U	1.0 U

	Penta-chloro-phenol (µg/L)	Phenan-threne (µg/L)	Phenol (µg/L)	Pyrene (µg/L)
Micropurge samples				
LL1MW-084	5.0 U	0.20 U	1.0 U	0.20 U
LL4MW-198	5.0 U	0.20 U	1.0 U	0.20 U
Traditional purge samples				
LL1MW-084	5.0 U	0.20 U	1.0 U	0.20 U
LL4MW-198	5.0 U	0.20 U	1.0 U	0.20 U
Field Blank	5.0 U	0.20 U	1.0 U	0.20 U

Table 9. Isotopic ratios of hydrogen and oxygen in groundwater samples collected from RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

	$\delta^{2}H$ (per mil)	$\delta^{18}O$ (per mil)
Micropurge samples		
LL1MW-081	-63.53	-9.69
LL1MW-082	-66.69	-10.18
LL1MW-084	-58.68	-8.99
LL2MW-266	-56.31	-8.76
LL2MW-267	-53.60	-8.41
LL2MW-269	-54.46	-8.47
LL4MW-195	-56.08	-8.81
LL4MW-196	-63.52	-9.77
LL4MW-197	-78.35	-11.81
LL4MW-198	-57.33	-8.88
LL4MW-199	-57.26	-8.60
RQLMW-007	-68.63	-10.29
RQLMW-008	-67.88	-10.39
RQLMW-009	-64.87	-9.72
RQLMW-014	-54.56	-8.40
RQLMW-016	-57.30	-8.93
SCFMW-003	-58.38	-8.92
SCFMW-004	-59.75	-9.08
SCFMW-005	-60.73	-9.08
Traditional purge samples		
LL1MW-084	-58.36	-8.87
LL4MW-198	-57.93	-8.90

APPENDIX B: Laboratory analytical reports and data validation reports for groundwater samples collected at RVAAP-66 Facility-wide Groundwater, April 4 through 7, 2011.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. GR11NJ00D5WRV00

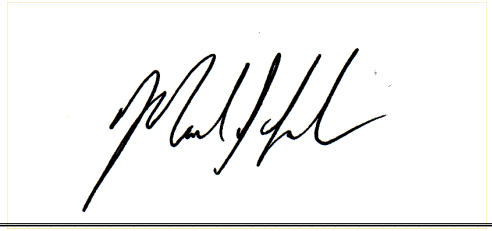
RAVENNA OH

Lot #: A1D050441

Gary L. Cottrell

U.S. Geological Survey (USGS)
Building 95, MS-407
Denver, CO 80225

TESTAMERICA LABORATORIES, INC.



Approved for release.
Mark J. Loeb
Project Manager II
6/23/2011 10:03 AM

Mark J. Loeb
Project Manager
mark.loeb@testamericainc.com

June 23, 2011

Laboratory Job No: 410030441

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION

Data reviewer: Gary Cottrell Review date: 6/27/11

Office, Project, & Account #: Ok, Ravenna

2.0 DATA DELIVERABLES

Date of Lab analytical report: 6/27/11 Number of copies: bound 0 unbound 0

No. of CD copies of raw-data report: 2 Remarks:

Raw-data report reviewed? Yes ✓ No ____ Electronic data files on CD? Yes ✓ No ____

EDD file format: QWDATA ____ TAL QUA08 ✓ ERPIMS ____ Other ____

Date rec'd data deliverables: 6/27/11 Date sent deliverables to USGS office 6/27/11

3.0 INVOICE STATUS FOR LOT: OK

4.0 SAMPLE INFORMATION *(Page #'s listed in this worksheet refer to lab analytical report)*

Sample collection date(s): 4/4/11 Sample matrix: water

No. of sample types in lot: Environmental 5 Trip blank ____ Equip. blank ____

MS/MSD ____ Other: ____

Date samples received at laboratory: 4/4/11

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes ____ No ✓

If yes, list TAT period and if completed:

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES ✓ NO ____

If **no**, list missing or cancelled analyses and reason for non-performance:

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes ✓ No ____

If **no**, list sample/lab IDs, and associated problems or reference lab report case narrative:

Laboratory Job No:_____

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes ✓ No ____

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

4.5 Did surrogate recoveries meet QC acceptance criteria? Yes _____ No _____ NA ✓

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s:_____

4.6 Were dilution factors greater than 1 for ***organic*** analyses? Yes____ No____ NA ✓

If **yes**, list analytical methods and reason for raised dilution factors: dilution _____

high-analyte levels _____ matrix interferences _____ other _____

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes ✓ No____ NA_____

If **yes**, list analytical methods and reason for raised dilution factors:

high-analyte levels ✓ matrix interferences _____ other _____

SO_4 - X5 - P20

4.8 Additional comments about sample analyses: _____

Laboratory Job No: A10507941

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Were any target analytes detected in the **Laboratory Method Blanks**? Yes ____ No ✓

If **yes**, list method, analytes, prep batch #, report page #s: _____

5.2 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes ✓ No ✓

If **no**, list method, analytes, LCS/LCSD, prep batch #, report page #s: _____

Ortho P - High - P25

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes ____ No ✓ NA ____

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

If **no**, list method, analytes; MS, MSD or RPD; and lab report page #:

Ortho-P - Low and High - P31

Ortho P - Low - P33

Ortho P - High - P35 & 37

5.4 Did the **lab-sample duplicate** results meet RPD acceptance criteria? Yes ___ No ___ NA ___

If **no**, list method, analytes, prep batch #, report page #s, _____

5.5 Additional comments about QC results: _____

Laboratory Job No:_____

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

_____ VOCs by GC/MS--method 8260B/ 524.2 *[water (W) or solids (S) analysis holding-time (HT) of 14 days]*

_____ Gasoline Range Organics (GRO)+BTEX-method 8015B(GRO)/ 8021 *[W and S: analysis HT 14 days]*

_____ Diesel Range Organics-method 8015B-DRO *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

_____ Pesticides by GC--method 8081A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

_____ PCBs by GC--method 8082 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Pesticides by GC--method 8141A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

_____ Herbicides by GC--method 8151A *[W: prep HT 7 days; S: prep HT14 days, analysis HT 40 days]*

_____ SVOCs by GC/MS--method 8270C *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Dioxins and Furans--methods 8280/ 8290/ 1613 *[W and S: prep HT 30 days; analysis HT 45 days]*

_____ PAHs by HPLC method 8310 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Explosives by HPLC method 8330 or 8321A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Hexane extractable materials (HEM and SGT-HEM)-method 1664/ 9071B *[W/S: analysis HT 28 days]*

_____ Total organic carbon (TOC) or DOC--methods 415.1 or 9060 or 5310B *[W: analysis HT 28 days]*

_____ Perchlorate--methods 314.0 or 6850 LC/MS/MS or 6860 IC/MS/MS *[W: analysis HT 28 days]*

__/__ Metals by ICP--method 6010B or 200.7 *[W and S: analysis HT 180 days]*

__/__ Metals by ICP/MS--method 6020 or 200.8 *[W and S: analysis HT 180 days]*

_____ Mercury by CVAA--method 7470A (W) and 7471A (S) *[W and S: analysis HT 28 days]*

__/__ Inorganic anions-method 300/9056 *[W: analysis HT **48 hours**- NO_2, NO_3, ortho-P; HT 28 days--Br,Cl ,F, SO_4]*

_____ Total dissolved solids (TDS)--method 2540C and(or) TSS--method 2540D *[W: analysis HT 7 days]*

_____ Alkalinity--method 310.1 (Total, OH, HCO_3, and CO_3) *[W: analysis HT 14 days]*

__/__ Nitrogen, ammonia--method ~~350.1~~ 350.2 *[W: analysis HT 28 days]*

_____ Nitrogen, TKN--method 351.2 *[W: analysis HT 28 days]*

_____ Nitrogen, nitrate + nitrite--method 353.2 *[W: analysis HT 28 days]* NO_3 or NO_2 only *[HT **48 hours**]*

_____ Nitrogen, nitrite--method 353.2 or 354.1 *[W: analysis HT **48 hours**]*

_____ Phosphorus-method 365.3 and ortho P by 365.3 *[Phosphorus.: W: analysis HT 28 days, ortho P **48 hours**]*

_____ Phosphorus-method 365.1 and ortho P by 365.1 *[Phosphorus: W: analysis HT 28 days, ortho P **48 hours**]*

_____ Cyanide, total, dissolved, or amenable--methods 9012A/ 335.4 *[W and S: analysis HT 14 days]*

_____ MBAS surfactants – method 425.1 ***(HT 48 hours)***

_____ Moisture content--methods D2216 or 160.3M

_____ BOD--method 405.1 *(HT 48 hours)* or COD--method 410.4

_____ Turbidity--method 180.1 ***(HT 48 hours)*** ; Hardness 2340B

_____ Physical properties: pH--method 4500 H B; specific conductance—method 2510B

_____ Other analyses:_____

_____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A1D050441

The following report contains the analytical results for five water samples submitted to TestAmerica North Canton by U.S.Geological Survey (USGS) from the RAVENNA OH Site, project number GR11NJ00D5W2100. The samples were received April 05, 2011, according to documented sample acceptance procedures.

The 6010B Metals (B Li Mo Si) and 6020 Uranium by ICP/MS analyses were performed at the TestAmerica Denver laboratory.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Mark J. Loeb, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 1.8°C.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The matrix spike/matrix spike duplicate(s) for FWG-LL4mw-198C-0100-GW and FWG-LL4mw-197C-0090-GW had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 1097318 and 1101306 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The LCSD and CCV associated with batch(es) 1101306 exceeded method criteria on the high side for Phosphate as P, Ortho. Since the sample results were below the requested reporting limit the results were accepted.

Sample(s) FWG-LL4mw-195C-0070-GW analyzed by ion chromatography had greater than 10 samples between CCV/CCBs due to analyst error. The CCV/CCB results met criteria and results are reported.

The Phosphate as P, Ortho sample(s) FWG-LL4mw-195C-0070-GW DUP was initially analyzed within hold time. However, a duplicate was also analyzed with the results out of RPD. The sample will be reanalyzed outside of hold time.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called Quality Control Batches (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, a Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair or a Matrix Spike/Sample Duplicate (MS/DU) pair.
For 600 series/CWA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, where appropriate, a Matrix Spike (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch, with the exception of poor performing analytes. A list of these analytes is listed below. No corrective action is taken if these analytes do not meet criteria.Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

Poor performers

Method 8270 Water and Solid:	
4-Nitrophenol	3,3' – Dichlorobenzidine
Benzoic Acid	2,4,6 - Tribromophenol
Phenol 2	,4-Dinitrophenol
Phenol-d5 P	entachlorophenol
4,6-Dinitro-2-methylphenol	Hexachlorocyclopentadiene (LCG only)
Benzyl Alcohol	4-Chloroaniline
Method 8151 Solid	
Dinoseb	
Method 8260 Water and Solid	
Dichlorodifluoromethane H	exachlorobutadiene
Trichlorofluoromethane Na	phthalene
Chloroethane 1	,2,3-Trichlorobenzene
Acetone 1	,2,4-Trichlorobenzene
Bromomethane 2	,2-Dichloropropane
Bromoform C	hloromethane

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be ten fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results do not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate or Matrix Spike/Sample Duplicate.

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), DoD ELAP (ADE-1437) USDA Soil Permit (P33-08-00123)

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A1D050441

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FWG-LL4mw-198C-0100-GW 04/04/11 15:22 001				
Chloride	1.2	1.0	mg/L	MCAWW 300.0A
Sulfate	93.4	1.0	mg/L	MCAWW 300.0A
Fluoride	0.24 B	1.0	mg/L	MCAWW 300.0A
FWG-LL4mw-195C-0070-GW 04/04/11 16:05 003				
Chloride	2.8	1.0	mg/L	MCAWW 300.0A
Sulfate	358	5.0	mg/L	MCAWW 300.0A
Fluoride	0.18 B	1.0	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	0.45 B	0.50	mg/L	MCAWW 300.0A
FWG-LL4mw-196C-0080-GW 04/04/11 14:11 005				
Nitrogen, as Ammonia	4.5	2.0	mg/L	MCAWW 350.2
Chloride	1.6	1.0	mg/L	MCAWW 300.0A
Sulfate	54.4	1.0	mg/L	MCAWW 300.0A
Fluoride	0.44 B	1.0	mg/L	MCAWW 300.0A
Nitrate as N	0.22	0.10	mg/L	MCAWW 300.0A
FWG-LL4mw-197C-0090-GW 04/04/11 12:35 007				
Chloride	1.0	1.0	mg/L	MCAWW 300.0A
Sulfate	30.0	1.0	mg/L	MCAWW 300.0A
Fluoride	0.24 B	1.0	mg/L	MCAWW 300.0A
Nitrate as N	1.4	0.10	mg/L	MCAWW 300.0A
FWG-LL4mw-199C-0110-GW 04/04/11 13:33 009				
Nitrogen, as Ammonia	0.84 B	2.0	mg/L	MCAWW 350.2
Chloride	4.9	1.0	mg/L	MCAWW 300.0A
Sulfate	64.2	1.0	mg/L	MCAWW 300.0A
Fluoride	0.15 B	1.0	mg/L	MCAWW 300.0A

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A1D050441

PARAMETER	ANALYTICAL METHOD
Ammonia Nitrogen	MCAWW 350.2
Bromide	MCAWW 300.0A
Chloride	MCAWW 300.0A
Fluoride	MCAWW 300.0A
Nitrate as N	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A
Sulfate	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

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SAMPLE SUMMARY

SAMPLE SUMMARY

A1D050441

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MGJ2A	001	FWG-LL4mw-198C-0100-GW	04/04/11	15:22
MGJ2Q	003	FWG-LL4mw-195C-0070-GW	04/04/11	16:05
MGJ2X	005	FWG-LL4mw-196C-0080-GW	04/04/11	14:11
MGJ22	007	FWG-LL4mw-197C-0090-GW	04/04/11	12:35
MGJ25	009	FWG-LL4mw-199C-0110-GW	04/04/11	13:33

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.

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SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica
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TestAmerica Laboratory location: Canton
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: U.S. Geological Survey	Client Project Manager: Ralph Haefner	Site Contact: Brian Mailot	Lab Contact: Ken Kuzior	COC No: 019551
Address: 6480 Doubletree Ave	Telephone: 614-430-7709	Telephone: 614-430-7747	Telephone: 330-966-9374	1 of 1 COCs
City/State/Zip: Columbus, OH 43229	Email: rhaefner@usgs.gov	Analysis Turnaround Time (in BUS days)		For lab use only
Phone: 614-430-7700		TAT if different from below contract		Walk-in client ☐
Project Name: Ravenna OH	Method of Shipment/Carrier: lab pickup	☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab pickup ☐ Lab sampling ☐
Project Number: GR11NJ00D5W2100	Shipping/Tracking No:			Job/SDG No:
PO #				

Analyses

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C/Grab=G	Metals 6010/6020	Anions/nutrient 300.0A	Ammonia 350.1	Sample Specific Notes / Special Instructions: Cooler #
FWGLL4mw-198C-010U-GW	4/4/11	15:22		X				1					1		N	G		X	X	A728
FWGLL4mw-198C-010U-GF	4/4/11	15:22		X					1						Y	G	X			A728
FWGLL4mw-195C-007U-GW	4/4/11	16:05		X				1					1		N	G		X	X	A728
FWGLL4mw-195C-007U-GF	4/4/11	16:05		X					1						Y	G	X			A728
FWGLL4mw-196C-008U-GW	4/4/11	14:11		X				1					1		N	G		X	X	A728
FWGLL4mw-196C-008U-GF	4/4/11	14:11		X					1						Y	G	X			A728
FWGLL4mw-197C-009U-GW	4/4/11	12:35		X				1					1		N	G		X	X	A728
FWGLL4mw-197C-009U-GF	4/4/11	12:35		X					1						Y	G	X			A728
FWGLL4mw-199C-011U-GW	4/4/11	13:33		X				1					1		N	G		X	X	A728
FWGLL4mw-199C-011U-GF	4/4/11	13:33		X					1						Y	G	X			A728

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Metals - 6010 (B, Li, Mo, Si) 6020 (U) filtered
Anions/nutrients - 300.0A (Br, Cl, F, SO4) nitrite, orthophosphate
Nitrogen, ammonia - 350.1

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian E Mailot	USGS	4/4/11 1803	RC Podio	TAL-NC	4/4/11 1803
RC Podio	TAL-NC	4/4/11 1900			
			Received in Laboratory by: [signature]	TA NC	4/5/11 0730

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TAL 0018- 1 (04/10)

North Canton

TestAmerica Cooler Receipt Form/Narrative **Lot Number:** 440504411
North Canton Facility

Client U.S. Geological Survey Project Ravenna Oh By: _____
Cooler Received on 4-5-11 Opened on 4-5-11 (Signature)
FedEx ☐ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☑ Other _____
TestAmerica Cooler # A728 Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 1 Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☑ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☑ No ☐
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt 1.8 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☑ Other ☐ _____
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☑ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☑
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☑ Were VOAs on the COC? Yes ☐ No ☑

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 100110-HNO_3; *Sulfuric Acid Lot#* 110410-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
1522 GW	≤2	4-5-11	MS
1605	≤2		
1411	≤2		
1235	≤2		
1333	≤2		
1522 GF	≤2		
1605	≤2		
1411	≤2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
1235 GF	< 2	4-5-11	MB
1333 L	< 2	L	L

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GENERAL CHEMISTRY DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWG-LL4mw-198C-0100-GW

General Chemistry

Lot-Sample #...: A1D050441-001 **Work Order #...:** MGJ2A **Matrix.....:** WG
Date Sampled...: 04/04/11 15:22 **Date Received..:** 04/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1				
Chloride	**1.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096314**
		Dilution Factor: 1				
Fluoride	**0.24 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096312**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096317
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Sulfate	**93.4**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096318**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWG-LL4mw-195C-0070-GW

General Chemistry

Lot-Sample #...: A1D050441-003 **Work Order #...:** MGJ2Q **Matrix.....:** WG
Date Sampled...: 04/04/11 16:05 **Date Received..:** 04/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1				
Chloride	**2.8**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096314**
		Dilution Factor: 1				
Fluoride	**0.18 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096312**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096317
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	**0.45 B**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097318**
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1				
Sulfate	**358**	**5.0**	**mg/L**	**MCAWW 300.0A**	**04/07/11**	**1098197**
		Dilution Factor: 5				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWG-LL4mw-196C-0080-GW

General Chemistry

Lot-Sample #...: A1D050441-005 **Work Order #...:** MGJ2X **Matrix.....:** WG
Date Sampled...: 04/04/11 14:11 **Date Received..:** 04/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1				
Chloride	**1.6**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096314**
		Dilution Factor: 1				
Fluoride	**0.44 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096312**
		Dilution Factor: 1				
Nitrate as N	**0.22**	**0.10**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096317**
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1				
Nitrogen, as Ammonia	**4.5**	**2.0**	**mg/L**	**MCAWW 350.2**	**04/08/11**	**1098085**
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Sulfate	**54.4**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096318**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWG-LL4mw-197C-0090-GW

General Chemistry

Lot-Sample #...: A1D050441-007 **Work Order #...:** MGJ22 **Matrix.....:** WG
Date Sampled...: 04/04/11 12:35 **Date Received..:** 04/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1				
Chloride	**1.0**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096314**
		Dilution Factor: 1				
Fluoride	**0.24 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096312**
		Dilution Factor: 1				
Nitrate as N	**1.4**	**0.10**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096317**
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Sulfate	**30.0**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096318**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWG-LL4mw-199C-0110-GW

General Chemistry

Lot-Sample #...: A1D050441-009 **Work Order #...:** MGJ25 **Matrix.....:** WG
Date Sampled...: 04/04/11 13:33 **Date Received..:** 04/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1				
Chloride	**4.9**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096314**
		Dilution Factor: 1				
Fluoride	**0.15 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096312**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096317
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1				
Nitrogen, as Ammonia	**0.84 B**	**2.0**	**mg/L**	**MCAWW 350.2**	**04/08/11**	**1098085**
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Sulfate	**64.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/05/11**	**1096318**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #: MGMEV1AA		MB Lot-Sample #:	A1D060000-316	
	ND	0.50	mg/L	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1				
Chloride		Work Order #: MGMD81AA		MB Lot-Sample #:	A1D060000-314	
	ND	1.0	mg/L	MCAWW 300.0A	04/05/11	1096314
		Dilution Factor: 1				
Fluoride		Work Order #: MGMD71AA		MB Lot-Sample #:	A1D060000-312	
	ND	1.0	mg/L	MCAWW 300.0A	04/05/11	1096312
		Dilution Factor: 1				
Nitrate as N		Work Order #: MGMEX1AA		MB Lot-Sample #:	A1D060000-317	
	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096317
		Dilution Factor: 1				
Nitrite as N		Work Order #: MGMER1AA		MB Lot-Sample #:	A1D060000-315	
	ND	0.10	mg/L	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1				
Nitrogen, as Ammonia		Work Order #: MGQQH1AA		MB Lot-Sample #:	A1D080000-085	
	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho		Work Order #: MGPDG1AA		MB Lot-Sample #:	A1D070000-318	
	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Phosphate as P, Ortho		Work Order #: MGVPD1AA		MB Lot-Sample #:	A1D110000-306	
	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1				
Sulfate		Work Order #: MGME21AA		MB Lot-Sample #:	A1D060000-318	
	ND	1.0	mg/L	MCAWW 300.0A	04/05/11	1096318
		Dilution Factor: 1				
Sulfate		Work Order #: MGQL91AA		MB Lot-Sample #:	A1D080000-197	
	ND	1.0	mg/L	MCAWW 300.0A	04/07/11	1098197
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A1D050441 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#:MGMEV1AC-LCS/MGMEV1AD-LCSD LCS Lot-Sample#: A1D060000-316					
	96	(90 - 110)			MCAWW 300.0A	04/05/11	1096316
	97	(90 - 110)	0.92	(0-20)	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1					
Chloride		WO#:MGMD81AC-LCS/MGMD81AD-LCSD LCS Lot-Sample#: A1D060000-314					
	99	(90 - 110)			MCAWW 300.0A	04/05/11	1096314
	100	(90 - 110)	0.76	(0-20)	MCAWW 300.0A	04/05/11	1096314
		Dilution Factor: 1					
Fluoride		WO#:MGMD71AC-LCS/MGMD71AD-LCSD LCS Lot-Sample#: A1D060000-312					
	97	(90 - 110)			MCAWW 300.0A	04/05/11	1096312
	98	(90 - 110)	0.94	(0-20)	MCAWW 300.0A	04/05/11	1096312
		Dilution Factor: 1					
Nitrate as N		WO#:MGMEX1AC-LCS/MGMEX1AD-LCSD LCS Lot-Sample#: A1D060000-317					
	96	(90 - 110)			MCAWW 300.0A	04/05/11	1096317
	97	(90 - 110)	0.45	(0-20)	MCAWW 300.0A	04/05/11	1096317
		Dilution Factor: 1					
Nitrite as N		WO#:MGMER1AC-LCS/MGMER1AD-LCSD LCS Lot-Sample#: A1D060000-315					
	96	(90 - 110)			MCAWW 300.0A	04/05/11	1096315
	96	(90 - 110)	0.66	(0-20)	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#:MGPDG1AC-LCS/MGPDG1AD-LCSD LCS Lot-Sample#: A1D070000-318					
	98	(90 - 110)			MCAWW 300.0A	04/06/11	1097318
	99	(90 - 110)	1.2	(0-20)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#:MGVPD1AC-LCS/MGVPD1AD-LCSD LCS Lot-Sample#: A1D110000-306					
	108	(90 - 110)			MCAWW 300.0A	04/08/11	1101306
	111 N	(90 - 110)	2.6	(0-20)	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1					

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A1D050441 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:MGME21AC-LCS/MGME21AD-LCSD LCS Lot-Sample#: A1D060000-318					
	95	(90 - 110)			MCAWW 300.0A	04/05/11	1096318
	96	(90 - 110)	0.52	(0-20)	MCAWW 300.0A	04/05/11	1096318
		Dilution Factor: 1					
Sulfate		WO#:MGQL91AC-LCS/MGQL91AD-LCSD LCS Lot-Sample#: A1D080000-197					
	94	(90 - 110)			MCAWW 300.0A	04/07/11	1098197
	94	(90 - 110)	0.04	(0-20)	MCAWW 300.0A	04/07/11	1098197
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A1D050441 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#:MGMEV1AC-LCS/MGMEV1AD-LCSD LCS Lot-Sample#: A1D060000-316						
	10.0	9.6	mg/L	96		MCAWW 300.0A	04/05/11	1096316
	10.0	9.7	mg/L	97	0.92	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1						
Chloride		WO#:MGMD81AC-LCS/MGMD81AD-LCSD LCS Lot-Sample#: A1D060000-314						
	50.0	49.6	mg/L	99		MCAWW 300.0A	04/05/11	1096314
	50.0	50.0	mg/L	100	0.76	MCAWW 300.0A	04/05/11	1096314
		Dilution Factor: 1						
Fluoride		WO#:MGMD71AC-LCS/MGMD71AD-LCSD LCS Lot-Sample#: A1D060000-312						
	2.5	2.4	mg/L	97		MCAWW 300.0A	04/05/11	1096312
	2.5	2.5	mg/L	98	0.94	MCAWW 300.0A	04/05/11	1096312
		Dilution Factor: 1						
Nitrate as N		WO#:MGMEX1AC-LCS/MGMEX1AD-LCSD LCS Lot-Sample#: A1D060000-317						
	2.5	2.4	mg/L	96		MCAWW 300.0A	04/05/11	1096317
	2.5	2.4	mg/L	97	0.45	MCAWW 300.0A	04/05/11	1096317
		Dilution Factor: 1						
Nitrite as N		WO#:MGMER1AC-LCS/MGMER1AD-LCSD LCS Lot-Sample#: A1D060000-315						
	2.5	2.4	mg/L	96		MCAWW 300.0A	04/05/11	1096315
	2.5	2.4	mg/L	96	0.66	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1						
Phosphate as P, Ortho		WO#:MGPDG1AC-LCS/MGPDG1AD-LCSD LCS Lot-Sample#: A1D070000-318						
	2.5	2.5	mg/L	98		MCAWW 300.0A	04/06/11	1097318
	2.5	2.5	mg/L	99	1.2	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1						
Phosphate as P, Ortho		WO#:MGVPD1AC-LCS/MGVPD1AD-LCSD LCS Lot-Sample#: A1D110000-306						
	2.5	2.7	mg/L	108		MCAWW 300.0A	04/08/11	1101306
	2.5	2.8 N	mg/L	111	2.6	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1						

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LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A1D050441 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:MGME21AC-LCS/MGME21AD-LCSD		LCS Lot-Sample#: A1D060000-318				
	50.0	47.7	mg/L	95		MCAWW 300.0A	04/05/11	1096318
	50.0	48.0	mg/L	96	0.52	MCAWW 300.0A	04/05/11	1096318
		Dilution Factor: 1						
Sulfate		WO#:MGQL91AC-LCS/MGQL91AD-LCSD		LCS Lot-Sample#: A1D080000-197				
	50.0	46.8	mg/L	94		MCAWW 300.0A	04/07/11	1098197
	50.0	46.8	mg/L	94	0.04	MCAWW 300.0A	04/07/11	1098197
		Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia		Work Order #: MGQQH1AC	LCS Lot-Sample#: A1D080000-085		
	94	(85 - 114)	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	Work Order #: MGQQH1AC				LCS Lot-Sample#: A1D080000-085		
	14	13	mg/L	94	MCAWW 350.2	04/08/11	1098085
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WATER
Date Sampled...: 04/05/11 16:26 **Date Received..:** 04/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	WO#: MGAA51AU-MS/MGAA51AV-MSD					MS Lot-Sample #: A1C290455-001	
	104	(75 - 125)			MCAWW 350.2	04/08/11	1098085
	97	(75 - 125)	1.2	(0-20)	MCAWW 350.2	04/08/11	1098085
	Dilution Factor: 1						
Phosphate as P, Ortho	WO#: MGLNF1AW-MS/MGLNF1AX-MSD					MS Lot-Sample #: A1D060449-001	
	53 N	(80 - 120)			MCAWW 300.0A	04/06/11	1097318
	60 N	(80 - 120)	10	(0-20)	MCAWW 300.0A	04/06/11	1097318
	Dilution Factor: 1						
Phosphate as P, Ortho	WO#: MGLQ01AW-MS/MGLQ01AX-MSD					MS Lot-Sample #: A1D060449-009	
	103	(80 - 120)			MCAWW 300.0A	04/06/11	1097318
	109	(80 - 120)	5.7	(0-20)	MCAWW 300.0A	04/06/11	1097318
	Dilution Factor: 1						
Phosphate as P, Ortho	WO#: MGP5D1AW-MS/MGP5D1AX-MSD					MS Lot-Sample #: A1D080416-001	
	119	(80 - 120)			MCAWW 300.0A	04/08/11	1101306
	121 N	(80 - 120)	1.2	(0-20)	MCAWW 300.0A	04/08/11	1101306
	Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WATER
Date Sampled...: 04/05/11 16:26 **Date Received..:** 04/06/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia			WO#: MGAA51AU-MS/MGAA51AV-MSD				MS Lot-Sample #: A1C290455-001		
	19	4.0	23	mg/L	104		MCAWW 350.2	04/08/11	1098085
	19	4.0	23	mg/L	97	1.2	MCAWW 350.2	04/08/11	1098085
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGLNF1AW-MS/MGLNF1AX-MSD				MS Lot-Sample #: A1D060449-001		
	0.25	2.5	1.6 N	mg/L	53		MCAWW 300.0A	04/06/11	1097318
	0.25	2.5	1.7 N	mg/L	60	10	MCAWW 300.0A	04/06/11	1097318
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGLQ01AW-MS/MGLQ01AX-MSD				MS Lot-Sample #: A1D060449-009		
	ND	2.5	2.6	mg/L	103		MCAWW 300.0A	04/06/11	1097318
	ND	2.5	2.7	mg/L	109	5.7	MCAWW 300.0A	04/06/11	1097318
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGP5D1AW-MS/MGP5D1AX-MSD				MS Lot-Sample #: A1D080416-001		
	ND	2.5	3.0	mg/L	119		MCAWW 300.0A	04/08/11	1101306
	ND	2.5	3.0 N	mg/L	121	1.2	MCAWW 300.0A	04/08/11	1101306
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WATER
Date Sampled...: 03/28/11 15:25 **Date Received..:** 03/28/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia		Work Order #...: MGAA51AU		MS Lot-Sample #: A1C290455-001	
	104	(75 - 125)	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGLNF1AW		MS Lot-Sample #: A1D060449-001	
	53 N	(80 - 120)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGLQ01AW		MS Lot-Sample #: A1D060449-009	
	103	(80 - 120)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGP5D1AW		MS Lot-Sample #: A1D080416-001	
	119	(80 - 120)	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1			
Sulfate		Work Order #...: MGAE31AU		MS Lot-Sample #: A1C290465-012	
	108	(80 - 120)	MCAWW 300.0A	04/05/11	1096318
		Dilution Factor: 2			
Sulfate		Work Order #...: MGMJ71AW		MS Lot-Sample #: A1D060583-006	
	98	(80 - 120)	MCAWW 300.0A	04/07/11	1098198
		Dilution Factor: 1			

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WATER
Date Sampled...: 03/28/11 15:25 **Date Received..:** 03/28/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	PREPARATION-METHOD	ANALYSIS DATE	PREP BATCH #
Sulfate			Work Order #...: MGAE31AU			MS Lot-Sample #: A1C290465-012		
	346	50.0	400	mg/L	108	MCAWW 300.0A	04/05/11	1096318
			Dilution Factor: 2					
Sulfate			Work Order #...: MGMJ71AW			MS Lot-Sample #: A1D060583-006		
	10.4	50.0	59.6	mg/L	98	MCAWW 300.0A	04/07/11	1098198
			Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WG
Date Sampled...: 04/04/11 12:35 **Date Received..:** 04/05/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#: MGJ221AR-MS/MGJ221AT-MSD				MS Lot-Sample #: A1D050441-007	
	106	(80 - 120)			MCAWW 300.0A	04/05/11	1096316
	104	(80 - 120)	1.3	(0-20)	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1					
Chloride		WO#: MGJ221AM-MS/MGJ221AN-MSD				MS Lot-Sample #: A1D050441-007	
	112	(80 - 120)			MCAWW 300.0A	04/05/11	1096314
	110	(80 - 120)	1.2	(0-20)	MCAWW 300.0A	04/05/11	1096314
		Dilution Factor: 1					
Fluoride		WO#: MGJ221AK-MS/MGJ221AL-MSD				MS Lot-Sample #: A1D050441-007	
	109	(80 - 120)			MCAWW 300.0A	04/05/11	1096312
	109	(80 - 120)	0.47	(0-20)	MCAWW 300.0A	04/05/11	1096312
		Dilution Factor: 1					
Nitrate as N		WO#: MGJ221AU-MS/MGJ221AV-MSD				MS Lot-Sample #: A1D050441-007	
	107	(80 - 120)			MCAWW 300.0A	04/05/11	1096317
	107	(80 - 120)	0.29	(0-20)	MCAWW 300.0A	04/05/11	1096317
		Dilution Factor: 1					
Nitrite as N		WO#: MGJ221AP-MS/MGJ221AQ-MSD				MS Lot-Sample #: A1D050441-007	
	107	(80 - 120)			MCAWW 300.0A	04/05/11	1096315
	105	(80 - 120)	1.7	(0-20)	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#: MGJ2A1AK-MS/MGJ2A1AL-MSD				MS Lot-Sample #: A1D050441-001	
	152 N	(80 - 120)			MCAWW 300.0A	04/06/11	1097318
	153 N	(80 - 120)	0.26	(0-20)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#: MGJ221A0-MS/MGJ221A1-MSD				MS Lot-Sample #: A1D050441-007	
	162 N	(80 - 120)			MCAWW 300.0A	04/06/11	1097318
	174 N	(80 - 120)	7.5	(0-20)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1					
Sulfate		WO#: MGJ221AW-MS/MGJ221AX-MSD				MS Lot-Sample #: A1D050441-007	
	114	(80 - 120)			MCAWW 300.0A	04/05/11	1096318
	113	(80 - 120)	0.57	(0-20)	MCAWW 300.0A	04/05/11	1096318
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WG
Date Sampled...: 04/04/11 12:35 **Date Received..:** 04/05/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide			WO#: MGJ221AR-MS/MGJ221AT-MSD				MS Lot-Sample #: A1D050441-007		
	ND	10.0	10.6	mg/L	106		MCAWW 300.0A	04/05/11	1096316
	ND	10.0	10.4	mg/L	104	1.3	MCAWW 300.0A	04/05/11	1096316
			Dilution Factor: 1						
Chloride			WO#: MGJ221AM-MS/MGJ221AN-MSD				MS Lot-Sample #: A1D050441-007		
	1.0	50.0	56.8	mg/L	112		MCAWW 300.0A	04/05/11	1096314
	1.0	50.0	56.1	mg/L	110	1.2	MCAWW 300.0A	04/05/11	1096314
			Dilution Factor: 1						
Fluoride			WO#: MGJ221AK-MS/MGJ221AL-MSD				MS Lot-Sample #: A1D050441-007		
	0.24	2.5	3.0	mg/L	109		MCAWW 300.0A	04/05/11	1096312
	0.24	2.5	3.0	mg/L	109	0.47	MCAWW 300.0A	04/05/11	1096312
			Dilution Factor: 1						
Nitrate as N			WO#: MGJ221AU-MS/MGJ221AV-MSD				MS Lot-Sample #: A1D050441-007		
	1.4	2.5	4.1	mg/L	107		MCAWW 300.0A	04/05/11	1096317
	1.4	2.5	4.1	mg/L	107	0.29	MCAWW 300.0A	04/05/11	1096317
			Dilution Factor: 1						
Nitrite as N			WO#: MGJ221AP-MS/MGJ221AQ-MSD				MS Lot-Sample #: A1D050441-007		
	ND	2.5	2.7	mg/L	107		MCAWW 300.0A	04/05/11	1096315
	ND	2.5	2.6	mg/L	105	1.7	MCAWW 300.0A	04/05/11	1096315
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGJ2A1AK-MS/MGJ2A1AL-MSD				MS Lot-Sample #: A1D050441-001		
	ND	2.5	3.8 N	mg/L	152		MCAWW 300.0A	04/06/11	1097318
	ND	2.5	3.8 N	mg/L	153	0.26	MCAWW 300.0A	04/06/11	1097318
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGJ221A0-MS/MGJ221A1-MSD				MS Lot-Sample #: A1D050441-007		
	ND	2.5	4.0 N	mg/L	162		MCAWW 300.0A	04/06/11	1097318
	ND	2.5	4.4 N	mg/L	174	7.5	MCAWW 300.0A	04/06/11	1097318
			Dilution Factor: 1						
Sulfate			WO#: MGJ221AW-MS/MGJ221AX-MSD				MS Lot-Sample #: A1D050441-007		
	30.0	50.0	87.0	mg/L	114		MCAWW 300.0A	04/05/11	1096318
	30.0	50.0	86.5	mg/L	113	0.57	MCAWW 300.0A	04/05/11	1096318
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D050441 **Matrix.....:** WG
Date Sampled...: 04/04/11 15:22 **Date Received..:** 04/05/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: MGJ221AR		MS Lot-Sample #: A1D050441-007	
	106	(80 - 120)	MCAWW 300.0A	04/05/11	1096316
		Dilution Factor: 1			
Chloride		Work Order #...: MGJ221AM		MS Lot-Sample #: A1D050441-007	
	112	(80 - 120)	MCAWW 300.0A	04/05/11	1096314
		Dilution Factor: 1			
Fluoride		Work Order #...: MGJ221AK		MS Lot-Sample #: A1D050441-007	
	109	(80 - 120)	MCAWW 300.0A	04/05/11	1096312
		Dilution Factor: 1			
Nitrate as N		Work Order #...: MGJ221AU		MS Lot-Sample #: A1D050441-007	
	107	(80 - 120)	MCAWW 300.0A	04/05/11	1096317
		Dilution Factor: 1			
Nitrite as N		Work Order #...: MGJ221AP		MS Lot-Sample #: A1D050441-007	
	107	(80 - 120)	MCAWW 300.0A	04/05/11	1096315
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGJ2A1AK		MS Lot-Sample #: A1D050441-001	
	152 N	(80 - 120)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGJ221A0		MS Lot-Sample #: A1D050441-007	
	162 N	(80 - 120)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1			
Sulfate		Work Order #...: MGJ221AW		MS Lot-Sample #: A1D050441-007	
	114	(80 - 120)	MCAWW 300.0A	04/05/11	1096318
		Dilution Factor: 1			

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

DENVER DATA

ANALYTICAL REPORT

Job Number: 280-14464-1

SDG Number: A1D050441

Job Description: USGS- RVAAP

For:
TestAmerica Laboratories, Inc.
4101 Shuffel Street NW
North Canton, OH 44720

Attention: Mr. Mark J. Loeb

Approved for release.
Dee A Kettula
Project Mgmt. Assistant
4/27/2011 5:23 PM

Designee for
DiLea Griego
Project Manager I
dilea.griego@testamericainc.com
04/27/2011

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

CASE NARRATIVE

Client: TestAmerica Laboratories, Inc.

Project: USGS- RVAAP

Report Number: 280-14464-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/08/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 2.6ºC and 3.1ºC.

TOTAL METALS - METHODS SW846 6010B/6020

Uranium was detected in method blank MB 280-61885/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged “J”. If the associated sample reported a result above the MDL and/or RL, the result has been “B” flagged.

The Sample Duplicate analysis performed on sample FWG-LL4MW-198C-0100-GF (280-14464-1) associated with prep batch 61885 exhibited RPD data outside the QC control limits. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

DATA REPORTING QUALIFIERS

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Lab Section	Qualifier	Description
Metals		
	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

EXECUTIVE SUMMARY - Detections

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Lab Sample ID / Analyte	Client Sample ID / Result / Qualifier		Reporting Limit	Units	Method
280-14464-1	**FWG-LL4MW-198C-0100-GF**				
Boron	28	J	100	ug/L	6010B
Lithium	9.3	J	10	ug/L	6010B
SiO2, Silica	22000		500	ug/L	6010B
Uranium	0.054	J B	1.0	ug/L	6020
280-14464-2	**FWG-LL4MW-195C-0070-GF**				
Boron	41	J	100	ug/L	6010B
Lithium	21		10	ug/L	6010B
SiO2, Silica	21000		500	ug/L	6010B
Uranium	0.97	J B	1.0	ug/L	6020
280-14464-3	**FWG-LL4MW-196C-0080-GF**				
Boron	24	J	100	ug/L	6010B
Lithium	5.4	J	10	ug/L	6010B
SiO2, Silica	15000		500	ug/L	6010B
Uranium	0.12	J B	1.0	ug/L	6020
280-14464-4	**FWG-LL4MW-197C-0090-GF**				
Boron	28	J	100	ug/L	6010B
Lithium	3.8	J	10	ug/L	6010B
SiO2, Silica	12000		500	ug/L	6010B
Uranium	1.5	B	1.0	ug/L	6020
280-14464-5	**FWG-LL4MW-199C-0110-GF**				
Boron	27	J	100	ug/L	6010B
Lithium	11		10	ug/L	6010B
SiO2, Silica	19000		500	ug/L	6010B
Uranium	0.20	J B	1.0	ug/L	6020

METHOD SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A

Lab References:

TAL DEN = TestAmerica Denver

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Method	Analyst	Analyst ID
SW846 6010B	Harre, John K	JKH
SW846 6020	Lill, Thomas E	TEL

SAMPLE SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-14464-1	FWG-LL4MW-198C-0100-GF	Water	04/04/2011 1522	04/11/2011 1000
280-14464-1MS	FWG-LL4MW-198C-0100-GF	Water	04/04/2011 1522	04/11/2011 1000
280-14464-1DU	FWG-LL4MW-198C-0100-GF	Water	04/04/2011 1522	04/11/2011 1000
280-14464-2	FWG-LL4MW-195C-0070-GF	Water	04/04/2011 1605	04/11/2011 1000
280-14464-3	FWG-LL4MW-196C-0080-GF	Water	04/04/2011 1411	04/11/2011 1000
280-14464-4	FWG-LL4MW-197C-0090-GF	Water	04/04/2011 1235	04/11/2011 1000
280-14464-5	FWG-LL4MW-199C-0110-GF	Water	04/04/2011 1333	04/11/2011 1000

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Client Sample ID: **FWG-LL4MW-198C-0100-GF**

Lab Sample ID: 280-14464-1
Client Matrix: Water

Date Sampled: 04/04/2011 1522
Date Received: 04/11/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1655			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	28	J	4.4	100
Lithium	9.3	J	2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	22000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	210AREF.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0452			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.054	J B	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Client Sample ID: **FWG-LL4MW-195C-0070-GF**

Lab Sample ID: 280-14464-2
Client Matrix: Water

Date Sampled: 04/04/2011 1605
Date Received: 04/11/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1704			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	41	J	4.4	100
Lithium	21		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	21000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	215SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0506			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.97	J B	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Client Sample ID: **FWG-LL4MW-196C-0080-GF**

Lab Sample ID: 280-14464-3
Client Matrix: Water

Date Sampled: 04/04/2011 1411
Date Received: 04/11/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1707			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	24	J	4.4	100
Lithium	5.4	J	2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	15000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	216SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0509			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.12	J B	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Client Sample ID: **FWG-LL4MW-197C-0090-GF**

Lab Sample ID: 280-14464-4
Client Matrix: Water

Date Sampled: 04/04/2011 1235
Date Received: 04/11/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1718			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	28	J	4.4	100
Lithium	3.8	J	2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	12000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	219SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0517			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	1.5	B	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Client Sample ID: **FWG-LL4MW-199C-0110-GF**

Lab Sample ID: 280-14464-5
Client Matrix: Water

Date Sampled: 04/04/2011 1333
Date Received: 04/11/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1720			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	27	J	4.4	100
Lithium	11		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	19000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	220SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0520			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.20	J B	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-61884					
LCS 280-61884/2-A	Lab Control Sample	T	Water	3010A	
MB 280-61884/1-A	Method Blank	T	Water	3010A	
280-14464-1	FWG-LL4MW-198C-0100-GF	T	Water	3010A	
280-14464-1DU	Duplicate	T	Water	3010A	
280-14464-1MS	Matrix Spike	T	Water	3010A	
280-14464-2	FWG-LL4MW-195C-0070-GF	T	Water	3010A	
280-14464-3	FWG-LL4MW-196C-0080-GF	T	Water	3010A	
280-14464-4	FWG-LL4MW-197C-0090-GF	T	Water	3010A	
280-14464-5	FWG-LL4MW-199C-0110-GF	T	Water	3010A	
Prep Batch: 280-61885					
LCS 280-61885/2-A	Lab Control Sample	T	Water	3020A	
MB 280-61885/1-A	Method Blank	T	Water	3020A	
280-14464-1	FWG-LL4MW-198C-0100-GF	T	Water	3020A	
280-14464-1DU	Duplicate	T	Water	3020A	
280-14464-1MS	Matrix Spike	T	Water	3020A	
280-14464-2	FWG-LL4MW-195C-0070-GF	T	Water	3020A	
280-14464-3	FWG-LL4MW-196C-0080-GF	T	Water	3020A	
280-14464-4	FWG-LL4MW-197C-0090-GF	T	Water	3020A	
280-14464-5	FWG-LL4MW-199C-0110-GF	T	Water	3020A	
Analysis Batch:280-62690					
LCS 280-61884/2-A	Lab Control Sample	T	Water	6010B	280-61884
MB 280-61884/1-A	Method Blank	T	Water	6010B	280-61884
280-14464-1	FWG-LL4MW-198C-0100-GF	T	Water	6010B	280-61884
280-14464-1DU	Duplicate	T	Water	6010B	280-61884
280-14464-1MS	Matrix Spike	T	Water	6010B	280-61884
280-14464-2	FWG-LL4MW-195C-0070-GF	T	Water	6010B	280-61884
280-14464-3	FWG-LL4MW-196C-0080-GF	T	Water	6010B	280-61884
280-14464-4	FWG-LL4MW-197C-0090-GF	T	Water	6010B	280-61884
280-14464-5	FWG-LL4MW-199C-0110-GF	T	Water	6010B	280-61884
Analysis Batch:280-62706					
LCS 280-61885/2-A	Lab Control Sample	T	Water	6020	280-61885
MB 280-61885/1-A	Method Blank	T	Water	6020	280-61885
280-14464-1	FWG-LL4MW-198C-0100-GF	T	Water	6020	280-61885
280-14464-1DU	Duplicate	T	Water	6020	280-61885
280-14464-1MS	Matrix Spike	T	Water	6020	280-61885
280-14464-2	FWG-LL4MW-195C-0070-GF	T	Water	6020	280-61885
280-14464-3	FWG-LL4MW-196C-0080-GF	T	Water	6020	280-61885
280-14464-4	FWG-LL4MW-197C-0090-GF	T	Water	6020	280-61885
280-14464-5	FWG-LL4MW-199C-0110-GF	T	Water	6020	280-61885

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis
T = Total

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Method Blank - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	MB 280-61884/1-A	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1651	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Boron	ND		4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	ND		74	500

Lab Control Sample - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	LCS 280-61884/2-A	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1653	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Boron	1000	1010	101	86 - 110	
Lithium	1000	1000	100	90 - 112	
Molybdenum	1000	987	99	90 - 110	
SiO2, Silica	21400	20500	96	90 - 110	

Matrix Spike - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14464-1	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1702	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Boron	28	J	1000	1060	103	87 - 113	
Lithium	9.3	J	1000	1030	102	89 - 114	
Molybdenum	ND		1000	1010	101	83 - 109	
SiO2, Silica	22000		21400	41800	93	75 - 141	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Serial Dilution - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14464-1	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1657	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Boron	28	J	33.8	NC	10	J
Lithium	9.3	J	ND	NC	10	
Molybdenum	ND		ND	NC	10	
SiO2, Silica	22000		21900	0.47	10	

Duplicate - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14464-1	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1700	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Boron	28	J	26.4	6	25	J
Lithium	9.3	J	7.89	16	25	J
Molybdenum	ND		ND	NC	25	
SiO2, Silica	22000		21000	5	20	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Method Blank - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	MB 280-61885/1-A	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	208_BLK.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0447	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Uranium	0.0299	J	0.020	1.0

Lab Control Sample - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	LCS 280-61885/2-A	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	209_LCS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0449	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	40.0	43.2	108	85 - 119	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Post Digestion Spike - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14464-1	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	212PDS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0458	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Uranium	0.054	J	200	198	99	75 - 125	

Matrix Spike - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14464-1	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	214_MS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0503	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Uranium	0.054	J	40.0	46.1	115	85 - 119	

North Canton

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
Sdg Number: A1D050441

Serial Dilution - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14464-1	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	211SDIL.D
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0455	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Uranium	0.054	J	ND	NC	10	

Duplicate - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14464-1	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	213_DU.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0500	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Uranium	0.054	J	0.200	115	20	J

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
SDG: A1D050441

Laboratory Chronicle

Lab ID: 280-14464-1 **Client ID:** FWG-LL4MW-198C-0100-GF

Sample Date/Time: 04/04/2011 15:22 Received Date/Time: 04/11/2011 10:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	280-14464-A-1-A		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	280-14464-A-1-A		280-62690	280-61884	04/15/2011 16:55	1	TAL DEN	JKH
P:3020A	280-14464-A-1-D		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	280-14464-A-1-D		280-62706	280-61885	04/16/2011 04:52	1	TAL DEN	TEL

Lab ID: 280-14464-1 **Client ID:** FWG-LL4MW-198C-0100-GF

Sample Date/Time: 04/04/2011 15:22 Received Date/Time: 04/11/2011 10:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	280-14464-A-1-C MS		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	280-14464-A-1-C MS		280-62690	280-61884	04/15/2011 17:02	1	TAL DEN	JKH
P:3020A	280-14464-A-1-F MS		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	280-14464-A-1-F MS		280-62706	280-61885	04/16/2011 05:03	1	TAL DEN	TEL

Lab ID: 280-14464-1 **Client ID:** FWG-LL4MW-198C-0100-GF

Sample Date/Time: 04/04/2011 15:22 Received Date/Time: 04/11/2011 10:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	280-14464-A-1-B DU		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	280-14464-A-1-B DU		280-62690	280-61884	04/15/2011 17:00	1	TAL DEN	JKH
P:3020A	280-14464-A-1-E DU		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	280-14464-A-1-E DU		280-62706	280-61885	04/16/2011 05:00	1	TAL DEN	TEL

Lab ID: 280-14464-1 SD **Client ID:** FWG-LL4MW-198C-0100-GF

Sample Date/Time: 04/04/2011 15:22 Received Date/Time: 04/11/2011 10:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	280-14464-A-1-A SD ^5		280-62690	280-61884	04/15/2011 07:30	5	TAL DEN	KMN
A:6010B	280-14464-A-1-A SD ^5		280-62690	280-61884	04/15/2011 16:57	5	TAL DEN	JKH
P:3020A	280-14464-A-1-D SD ^5		280-62706	280-61885	04/15/2011 15:30	5	TAL DEN	JM
A:6020	280-14464-A-1-D SD ^5		280-62706	280-61885	04/16/2011 04:55	5	TAL DEN	TEL
P:3020A	280-14464-A-1-D PDS		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	280-14464-A-1-D PDS		280-62706	280-61885	04/16/2011 04:58	1	TAL DEN	TEL

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
SDG: A1D050441

Laboratory Chronicle

Lab ID: 280-14464-2 **Client ID:** FWG-LL4MW-195C-0070-GF

Sample Date/Time: 04/04/2011 16:05 Received Date/Time: 04/11/2011 10:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	280-14464-A-2-A		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	280-14464-A-2-A		280-62690	280-61884	04/15/2011 17:04	1	TAL DEN	JKH
P:3020A	280-14464-A-2-B		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	280-14464-A-2-B		280-62706	280-61885	04/16/2011 05:06	1	TAL DEN	TEL

Lab ID: 280-14464-3 **Client ID:** FWG-LL4MW-196C-0080-GF

Sample Date/Time: 04/04/2011 14:11 Received Date/Time: 04/11/2011 10:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	280-14464-A-3-A		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	280-14464-A-3-A		280-62690	280-61884	04/15/2011 17:07	1	TAL DEN	JKH
P:3020A	280-14464-A-3-B		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	280-14464-A-3-B		280-62706	280-61885	04/16/2011 05:09	1	TAL DEN	TEL

Lab ID: 280-14464-4 **Client ID:** FWG-LL4MW-197C-0090-GF

Sample Date/Time: 04/04/2011 12:35 Received Date/Time: 04/11/2011 10:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	280-14464-A-4-A		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	280-14464-A-4-A		280-62690	280-61884	04/15/2011 17:18	1	TAL DEN	JKH
P:3020A	280-14464-A-4-B		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	280-14464-A-4-B		280-62706	280-61885	04/16/2011 05:17	1	TAL DEN	TEL

Lab ID: 280-14464-5 **Client ID:** FWG-LL4MW-199C-0110-GF

Sample Date/Time: 04/04/2011 13:33 Received Date/Time: 04/11/2011 10:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	280-14464-A-5-A		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	280-14464-A-5-A		280-62690	280-61884	04/15/2011 17:20	1	TAL DEN	JKH
P:3020A	280-14464-A-5-B		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	280-14464-A-5-B		280-62706	280-61885	04/16/2011 05:20	1	TAL DEN	TEL

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14464-1
SDG: A1D050441

Laboratory Chronicle

Lab ID: MB **Client ID:** N/A

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	MB 280-61884/1-A		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	MB 280-61884/1-A		280-62690	280-61884	04/15/2011 16:51	1	TAL DEN	JKH
P:3020A	MB 280-61885/1-A		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	MB 280-61885/1-A		280-62706	280-61885	04/16/2011 04:47	1	TAL DEN	TEL

Lab ID: LCS **Client ID:** N/A

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	LCS 280-61884/2-A		280-62690	280-61884	04/15/2011 07:30	1	TAL DEN	KMN
A:6010B	LCS 280-61884/2-A		280-62690	280-61884	04/15/2011 16:53	1	TAL DEN	JKH
P:3020A	LCS 280-61885/2-A		280-62706	280-61885	04/15/2011 15:30	1	TAL DEN	JM
A:6020	LCS 280-61885/2-A		280-62706	280-61885	04/16/2011 04:49	1	TAL DEN	TEL

Lab References:
TAL DEN = TestAmerica Denver

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG No.: A1D050441

Project: USGS- RVAAP

Client Sample ID	Lab Sample ID
FWG-LL4MW-198C-0100-GF	280-14464-1
FWG-LL4MW-195C-0070-GF	280-14464-2
FWG-LL4MW-196C-0080-GF	280-14464-3
FWG-LL4MW-197C-0090-GF	280-14464-4
FWG-LL4MW-199C-0110-GF	280-14464-5

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWG-LL4MW-198C-0100-GF
Lab Sample ID: 280-14464-1
Lab Name: TestAmerica Denver
Job No.: 280-14464-1
SDG ID.: A1D050441
Matrix: Water
Date Sampled: 04/04/2011 15:22
Reporting Basis: WET
Date Received: 04/11/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	28	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	9.3	10	2.6	ug/L	J		1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	22000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.054	1.0	0.020	ug/L	J	B	1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWG-LL4MW-195C-0070-GF
Lab Sample ID: 280-14464-2
Lab Name: TestAmerica Denver
Job No.: 280-14464-1
SDG ID.: A1D050441
Matrix: Water
Date Sampled: 04/04/2011 16:05
Reporting Basis: WET
Date Received: 04/11/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	41	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	21	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	21000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.97	1.0	0.020	ug/L	J	B	1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWG-LL4MW-196C-0080-GF
Lab Sample ID: 280-14464-3
Lab Name: TestAmerica Denver
Job No.: 280-14464-1
SDG ID.: A1D050441
Matrix: Water
Date Sampled: 04/04/2011 14:11
Reporting Basis: WET
Date Received: 04/11/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	24	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	5.4	10	2.6	ug/L	J		1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	15000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.12	1.0	0.020	ug/L	J	B	1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWG-LL4MW-197C-0090-GF
Lab Sample ID: 280-14464-4
Lab Name: TestAmerica Denver
Job No.: 280-14464-1
SDG ID.: A1D050441
Matrix: Water
Date Sampled: 04/04/2011 12:35
Reporting Basis: WET
Date Received: 04/11/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	28	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	3.8	10	2.6	ug/L	J		1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	12000	500	74	ug/L			1	6010B
7440-61-1	Uranium	1.5	1.0	0.020	ug/L		B	1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWG-LL4MW-199C-0110-GF
Lab Sample ID: 280-14464-5
Lab Name: TestAmerica Denver
Job No.: 280-14464-1
SDG ID.: A1D050441
Matrix: Water
Date Sampled: 04/04/2011 13:33
Reporting Basis: WET
Date Received: 04/11/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	27	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	11	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	19000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.20	1.0	0.020	ug/L	J	B	1	6020

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

ICV Source: ICP ICVL_00049 Concentration Units: ug/L

CCV Source: ICP CCVL_00151

Analyte	ICV 280-62690/8 04/15/2011 09:39				ICV 280-62690/9 04/15/2011 09:42				CCV 280-62690/51 04/15/2011 16:44			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Boron	259		250	104	262		250	105	517		500	103
Lithium	252		250	101	257		250	103	1000		1000	100
Molybdenum	242		250	97	245		250	98	500		500	100
SiO2, Silica	4220		4280	99	4260		4280	100	10300		10700	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

ICV Source: ICP ICVL_00049 Concentration Units: ug/L

CCV Source: ICP CCVL_00151

Analyte	CCV 280-62690/63 04/15/2011 17:11				CCV 280-62690/76 04/15/2011 17:41							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Boron	515		500	103	520		500	104				
Lithium	999		1000	100	1020		1000	102				
Molybdenum	497		500	99	504		500	101				
SiO2, Silica	10300		10700	96	10400		10700	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

ICV Source: MS ICV_00316 Concentration Units: ug/L

CCV Source: MS CCV_00317

Analyte	ICV 280-62706/4 04/15/2011 19:28				ICV 280-62706/6 04/15/2011 19:33				CCV 280-62706/18 04/15/2011 20:06			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Uranium	39.8		40.0	100	39.6		40.0	99	50.7		50.0	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

ICV Source: MS ICV_00316 Concentration Units: ug/L

CCV Source: MS CCV_00317

Analyte	CCV 280-62706/164 04/16/2011 04:41				CCV 280-62706/175 04/16/2011 05:12				CCV 280-62706/186 04/16/2011 05:42			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Uranium	52.2		50.0	104	51.9		50.0	104	52.1		50.0	104

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Method: 6010B Instrument ID: MT_025

Lab Sample ID: CRI 280-62690/14 Concentration Units: ug/L

CRQL Check Standard Source: ICP RL STD_00348

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Boron	100	104		104	50-150
Lithium	10.0	10.7		107	50-150
Molybdenum	10.0	10.2	J	102	50-150
SiO2, Silica	1070	1060	J	99	50-150

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Method: 6020 Instrument ID: MT_024

Lab Sample ID: CRI 280-62706/10 Concentration Units: ug/L

CRQL Check Standard Source: MS RL STD_00326

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Uranium	1.00	1.01		101	50-150

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Concentration Units: ug/L

Analyte	RL	ICB 280-62690/13 04/15/2011 09:54		CCB 280-62690/52 04/15/2011 16:46		CCB 280-62690/64 04/15/2011 17:13		CCB 280-62690/77 04/15/2011 17:43	
		Found	C	Found	C	Found	C	Found	C
Boron	100	ND		ND		ND		ND	
Lithium	10	ND		ND		ND		ND	
Molybdenum	20	ND		ND		ND		ND	
SiO2, Silica	1100	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Concentration Units: ug/L

Analyte	RL	ICB 280-62706/9 04/15/2011 19:42		CCB 280-62706/20 04/15/2011 20:11		CCB 280-62706/165 04/16/2011 04:44		CCB 280-62706/176 04/16/2011 05:14	
		Found	C	Found	C	Found	C	Found	C
Uranium	1.0	ND		0.0437	J	0.0690	J	0.0547	J

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Concentration Units: ug/L

Analyte	RL	CCB 280-62706/187 04/16/2011 05:45							
		Found	C	Found	C	Found	C	Found	C
Uranium	1.0	0.0503	J						

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Concentration Units: ug/L Lab Sample ID: MB 280-61884/1-A

Instrument Code: MT_025 Batch No.: 62690

CAS No.	Analyte	Concentration	C	Q	Method
7440-42-8	Boron	ND			6010B
7439-93-2	Lithium	ND			6010B
7439-98-7	Molybdenum	ND			6010B
14808-60-7	SiO2, Silica	ND			6010B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Concentration Units: ug/L Lab Sample ID: MB 280-61885/1-A

Instrument Code: MT_024 Batch No.: 62706

CAS No.	Analyte	Concentration	C	Q	Method
7440-61-1	Uranium	0.0299	J		6020

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Lab Sample ID: ICSAB 280-62690/16 Instrument ID: MT_025

Lab File ID: ICS Source: ICP ICSAB_00029

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Boron	**2000**	**1818**	**91**
Lithium	**1000**	**1032**	**103**
Molybdenum	**1000**	**911**	**91**
SiO2, Silica	**21400**	**20802**	**97**
Aluminum	*500000*	*507520*	*102*
Antimony	*1000*	*965*	*97*
Arsenic	*2000*	*1958*	*98*
Barium	*500*	*488*	*98*
Beryllium	*500*	*471*	*94*
Bismuth	*1000*	*1059*	*106*
Cadmium	*1000*	*1023*	*102*
Calcium	*500000*	*457890*	*92*
Chromium	*500*	*475*	*95*
Cobalt	*500*	*454*	*91*
Copper	*500*	*534*	*107*
Iron	*200000*	*186780*	*93*
Lead	*1000*	*891*	*89*
Magnesium	*500000*	*479720*	*96*
Manganese	*500*	*484*	*97*
Nickel	*1000*	*893*	*89*
Phosphorus	*2000*	*1871*	*94*
Potassium	*50000*	*50456*	*101*
Selenium	*5000*	*4665*	*93*
Silicon	*10000*	*9721*	*97*
Silver	*1000*	*1071*	*107*
Sodium	*50000*	*52252*	*105*
Strontium	*1000*	*956*	*96*
Thallium	*10000*	*8279*	*83*
Thorium	*2000*	*2019*	*101*
Tin	*10000*	*8783*	*88*
Titanium	*1000*	*969*	*97*
Vanadium	*500*	*485*	*97*
Zinc	*1000*	*938*	*94*
Zirconium	*1000*	*955*	*95*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Lab Sample ID: ICSA 280-62690/17 Instrument ID: MT_025

Lab File ID: ICS Source: ICP ICSA_00035

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Boron		**-1.66**	
Lithium		**5.09**	
Molybdenum		**-0.870**	
SiO2, Silica		**10.4**	
Aluminum	*500000*	*498730*	*100*
Antimony		*-0.0900*	
Arsenic		*5.55*	
Barium		*0.310*	
Beryllium		*-0.0300*	
Bismuth		*5.62*	
Cadmium		*0.350*	
Calcium	*500000*	*453650*	*91*
Chromium		*2.79*	
Cobalt		*-1.52*	
Copper		*7.10*	
Iron	*200000*	*184780*	*92*
Lead		*-5.41*	
Magnesium	*500000*	*473400*	*95*
Manganese		*2.09*	
Nickel		*0.580*	
Phosphorus		*-3.20*	
Potassium		*-11.1*	
Selenium		*-0.390*	
Silicon		*4.86*	
Silver		*-0.450*	
Sodium		*69.5*	
Strontium		*-2.26*	
Thallium		*-1.82*	
Thorium		*-20.6*	
Tin		*-0.180*	
Titanium		*1.76*	
Vanadium		*1.98*	
Zinc		*6.58*	
Zirconium		*0.100*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Lab Sample ID: ICSA 280-62706/12 Instrument ID: MT_024

Lab File ID: 013ICSA.D ICS Source: MS ICSA_00316

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Uranium		**0.0066**	
Antimony		*0.286*	
Arsenic		*0.252*	
Barium		*0.169*	
Beryllium		*0.0126*	
Cadmium		*0.370*	
Chromium		*2.74*	
Cobalt		*0.0311*	
Copper		*0.235*	
Lead		*0.130*	
Manganese		*0.597*	
Molybdenum	*2000*	*2213*	*111*
Nickel		*1.05*	
Selenium		*0.0647*	
Silver		*0.0929*	
Thallium		*0.0405*	
Thorium		*0.947*	
Tin		*0.168*	
Vanadium		*0.165*	
Zinc		*1.50*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Lab Sample ID: ICSAB 280-62706/13 Instrument ID: MT_024

Lab File ID: 014ICSB.D ICS Source: MS ICSAB_00318

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Uranium	**100**	**104**	**104**
Antimony	*100*	*98.5*	*99*
Arsenic	*100*	*102*	*102*
Barium	*100*	*106*	*106*
Beryllium	*100*	*92.4*	*92*
Cadmium	*100*	*95.5*	*95*
Chromium	*100*	*111*	*111*
Cobalt	*100*	*103*	*103*
Copper	*100*	*90.4*	*90*
Lead	*100*	*93.2*	*93*
Manganese	*100*	*103*	*102*
Molybdenum	*2100*	*2317*	*110*
Nickel	*100*	*95.7*	*96*
Selenium	*100*	*103*	*103*
Silver	*100*	*87.9*	*88*
Thallium	*100*	*95.8*	*96*
Thorium	*100*	*118*	*118*
Tin	*100*	*104*	*104*
Vanadium	*100*	*114*	*114*
Zinc	*100*	*96.8*	*97*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Lab Sample ID: ICSA 280-62706/66 Instrument ID: MT_024

Lab File ID: 067ICSA.D ICS Source: MS ICSA_00316

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Uranium		**0.0339**	
Antimony		*0.284*	
Arsenic		*0.337*	
Barium		*0.184*	
Beryllium		*0.0090*	
Cadmium		*0.465*	
Chromium		*2.68*	
Cobalt		*0.0484*	
Copper		*0.293*	
Lead		*0.143*	
Manganese		*0.631*	
Molybdenum	*2000*	*2178*	*109*
Nickel		*1.15*	
Selenium		*-0.0205*	
Silver		*0.104*	
Thallium		*0.0364*	
Tin		*0.342*	
Vanadium		*0.0376*	
Zinc		*1.58*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Lab Sample ID: ICSAB 280-62706/67 Instrument ID: MT_024

Lab File ID: 068ICSB.D ICS Source: MS ICSAB_00318

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Uranium	**100**	**103**	**103**
Antimony	*100*	*98.1*	*98*
Arsenic	*100*	*103*	*103*
Barium	*100*	*105*	*105*
Beryllium	*100*	*94.6*	*95*
Cadmium	*100*	*94.4*	*94*
Chromium	*100*	*112*	*112*
Cobalt	*100*	*104*	*104*
Copper	*100*	*92.0*	*92*
Lead	*100*	*92.4*	*92*
Manganese	*100*	*105*	*105*
Molybdenum	*2100*	*2346*	*112*
Nickel	*100*	*97.5*	*98*
Selenium	*100*	*103*	*103*
Silver	*100*	*86.0*	*86*
Thallium	*100*	*95.9*	*96*
Thorium	*100*	*117*	*117*
Tin	*100*	*102*	*102*
Vanadium	*100*	*114*	*114*
Zinc	*100*	*96.3*	*96*

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

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: FWG-LL4MW-198C-0100-GF MS Lab ID: 280-14464-1 MS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Boron	1060		28	J	1000	103	87-113		6010B
Lithium	1030		9.3	J	1000	102	89-114		6010B
Molybdenum	1010		ND		1000	101	83-109		6010B
SiO2, Silica	41800		22000		21400	93	75-141		6010B
Uranium	46.1		0.054	J	40.0	115	85-119		6020

SSR = Spiked Sample Result

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

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: FWG-LL4MW-198C-0100-GF PDS Lab ID: 280-14464-1 PDS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Uranium	198		0.054	J	200	99	75-125		6020

SSR = Spiked Sample Result

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

FORM VB - IN

6-IN
DUPLICATES
METALS

Client ID: FWG-LL4MW-198C-0100-GF DU Lab ID: 280-14464-1 DU

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

% Solids for Sample: % Solids for Duplicate:

Matrix: Water Concentration Units: ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Boron	100	28	J	26.4	J	6		6010B
Lithium	10	9.3	J	7.89	J	16		6010B
Molybdenum	20	ND		ND		NC		6010B
SiO2, Silica	500	22000		21000		5		6010B
Uranium	1.0	0.054	J	0.200	J	115		6020

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

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-61884/2-A

Lab Name: TestAmerica Denver Job No.: 280-14464-1

Sample Matrix: Water LCS Source: ICP SPK 2A_00024

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Boron	1000	1010		101	86	110		6010B
Lithium	1000	1000		100	90	112		6010B
Molybdenum	1000	987		99	90	110		6010B
SiO2, Silica	21400	20500		96	90	110		6010B

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-61885/2-A

Lab Name: TestAmerica Denver Job No.: 280-14464-1

Sample Matrix: Water LCS Source: MS CALSTD-1_00037

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Uranium	40.0	43.2		108	85	119		6020

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

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-14464-1

SDG No: A1D050441

Lab Name: TestAmerica Denver Job No: 280-14464-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Boron	28	J	33.8	J	NC		6010B
Lithium	9.3	J	ND		NC		6010B
Molybdenum	ND		ND		NC		6010B
SiO2, Silica	22000		21900		0.47		6010B

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-14464-1

SDG No: A1D050441

Lab Name: TestAmerica Denver Job No: 280-14464-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Uranium	0.054	J	ND		NC		6020

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

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG Number: A1D050441

Matrix: Water Instrument ID: MT_025

Method: 6010B MDL Date: 02/23/2011 08:42

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Boron	208.9	100	4.37
Lithium	670.7	10	2.61
Molybdenum	202	20	3.13
SiO2, Silica	288.1	500	74.3

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG Number: A1D050441

Matrix: Water Instrument ID: MT_025

Method: 6010B XMDL Date: 02/23/2011 08:43

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Boron		100	4.37
Lithium		10	2.61
Molybdenum		20	3.13
SiO2, Silica		1100	74.3

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG Number: A1D050441

Matrix: Water Instrument ID: MT_024

Method: 6020 MDL Date: 04/26/2010 12:11

Prep Method: 3020A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Uranium	238	1	0.02

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG Number: A1D050441

Matrix: Water Instrument ID: MT_024

Method: 6020 XMDL Date: 04/26/2010 12:12

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Uranium		1	0.02

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG No.: A1D050441

ICP-AES Instrument ID: MT_025 Date: 03/08/2011

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Aluminum	167.079													0.001408	
Aluminum	309.271													0.001655	
Antimony	206.833		0.000023									0.004302		0.000030	
Arsenic	189.042				0							-0.014240			
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061											0.002290			
Boron	208.959														
Cadmium	228.802			0.002543							-0.004118				
Calcium	317.933														
Chromium	205.552						-0.002169								
Cobalt	228.616														
Copper	324.754														
Iron	259.940										0.070287				
Iron	271.441										0.070287				
Lead	220.353		-0.000058										0.000146	0.000018	
Lithium	670.784								0.000009						
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090		0.000032											0.000009	
Silicon	288.158											-0.002611			
Silver	328.068														
Sodium	589.592														
Sodium	818.326														
Strontium	407.771								0.000009						
Sulfur	182.034														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG No.: A1D050441

ICP-AES Instrument ID: MT_025 Date: 03/08/2011

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Thallium	190.856										0.003800	0.000241			
Thorium	283.730									-0.000516		0.000240		0.000729	
Tin	189.989														
Titanium	334.904											0.000169			
Uranium	370.152				0.001088				-0.000107			-0.001869		-0.000215	
Vanadium	292.402											-0.006569			
Zinc	206.200											-0.000710			
Zirconium	339.198														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG No.: A1D050441

ICP-AES Instrument ID: MT_025 Date: 03/08/2011

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn	Sr
Aluminum	309.271														
Aluminum	167.079														
Antimony	206.833				-0.000868										
Arsenic	189.042				0.001045										
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	208.959				0.021490										
Cadmium	228.802														
Calcium	317.933														
Chromium	205.552						0.000151								
Cobalt	228.616				-0.000837		0.000134								
Copper	324.754				0.000034										
Iron	259.940		-0.000894												
Iron	271.441		-0.000894												
Lead	220.353			0	-0.001805		0.000312						0.000071		
Lithium	670.784														
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284				-0.004187										
Potassium	766.490														
Selenium	196.090			0.000750											
Silicon	288.158				-0.005077										
Silver	328.068		0		-0.000441										
Sodium	818.326														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034			0.011200	-0.001874										

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG No.: A1D050441

ICP-AES Instrument ID: MT_025 Date: 03/08/2011

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	Sn	Sr
Thallium	190.856			0.001027											
Thorium	283.730						0.000237								
Tin	189.989														
Titanium	334.904		0.000003		0.000571										
Uranium	370.152														
Vanadium	292.402			-0.000497											
Zinc	206.200														
Zirconium	339.198														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG No.: A1D050441

ICP-AES Instrument ID: MT_025 Date: 03/08/2011

Analyte	Wave Length	Th	Ti	Tl	U	V	W	Zn	Zr						
Aluminum	167.079														
Aluminum	309.271														
Antimony	206.833				-0.001780				-0.001223						
Arsenic	189.042														
Barium	455.403								0.001154						
Beryllium	313.042		-0.000204												
Bismuth	223.061		-0.002704												
Boron	208.959														
Cadmium	228.802														
Calcium	317.933	-0.012260													
Chromium	205.552	0.000058			0.000035										
Cobalt	228.616		0.001698												
Copper	324.754	0.003266	-0.000326		0.001095	-0.000656			0.000024						
Iron	259.940					-0.209500									
Iron	271.441					-0.209500									
Lead	220.353		-0.000719		0.000511				-0.000476						
Lithium	670.784														
Magnesium	279.079	-0.042580			-0.010166										
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090	-0.000849			-0.002406										
Silicon	288.158														
Silver	328.068	0.000067			0.001256				0.003534						
Sodium	589.592														
Sodium	818.326														
Strontium	407.771														
Sulfur	182.034					0.015870									

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14464-1

SDG No.: A1D050441

ICP-AES Instrument ID: MT_025 Date: 03/08/2011

Analyte	Wave Length	Th	Ti	Tl	U	V	W	Zn	Zr						
Thallium	190.856		-0.000398			0.000675									
Thorium	283.730				0.021950				0.007938						
Tin	189.989		-0.001001												
Titanium	334.904	0.006042			-0.000536										
Uranium	370.152		0.005239												
Vanadium	292.402	0.001078	0.000574		-0.000661										
Zinc	206.200														
Zirconium	339.198	0.065805													

11-IN
ICP-AES AND ICP-MS LINEAR RANGES
METALS

Lab Name: TestAmerica Denver Job No: 280-14464-1

SDG No.: A1D050441

Instrument ID: MT_025 Date: 02/18/2011 13:56

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Boron		100	6010B
Lithium		25	6010B
Molybdenum		20	6010B
SiO2, Silica		428	6010B

11-IN
ICP-AES AND ICP-MS LINEAR RANGES
METALS

Lab Name: TestAmerica Denver Job No: 280-14464-1

SDG No.: A1D050441

Instrument ID: MT_024 Date: 04/12/2011 16:49

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Uranium		4000	6020

FORM XI - IN

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Prep Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-61884/1-A	04/15/2011 07:30	61884		50	50
LCS 280-61884/2-A	04/15/2011 07:30	61884		50	50
280-14464-1	04/15/2011 07:30	61884		50	50
280-14464-1 DU	04/15/2011 07:30	61884		50	50
280-14464-1 MS	04/15/2011 07:30	61884		50	50
280-14464-2	04/15/2011 07:30	61884		50	50
280-14464-3	04/15/2011 07:30	61884		50	50
280-14464-4	04/15/2011 07:30	61884		50	50
280-14464-5	04/15/2011 07:30	61884		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Prep Method: 3020A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-61885/1-A	04/15/2011 15:30	61885		50	50
LCS 280-61885/2-A	04/15/2011 15:30	61885		50	50
280-14464-1	04/15/2011 15:30	61885		50	50
280-14464-1 DU	04/15/2011 15:30	61885		50	50
280-14464-1 MS	04/15/2011 15:30	61885		50	50
280-14464-2	04/15/2011 15:30	61885		50	50
280-14464-3	04/15/2011 15:30	61885		50	50
280-14464-4	04/15/2011 15:30	61885		50	50
280-14464-5	04/15/2011 15:30	61885		50	50

ICP Data Review Checklist

TALS BATCH NUMBER: 62686-62700		Earliest due date: 4/18/11
Run Date: 4/15/11	Analyst: JKH	Instrument: 25
QC programs/Methods Run: SEE RUN LOGS		

Review Items	Yes	No	N/A	2nd Level
A. Preparation/Matrix QC				
1. LCS done per prep batch and within QC limits?	✓			✓
2. Method blank done per prep batch and < 1/2 RL or CRDL (CLP) or < 2.2x MDL 200.7 ?	✓			✓
3. MS run at required frequency and within limits?	✓			✓
4. MSD or DU run at required frequency and RPD within SOP limits?	✓			✓
5. Serial dilution done per prep batch (or per SDG for CLP)?	✓			✓
6. Post digest spike analyzed if required (CLP, DOD & AFCEE only)? NCM Whether needed for DODV3, AFCEE 4.0, 6010c?	✓			✓
B. Calibration/Instrument Run QC				
1. ICV/CCV analyzed at appropriate frequency and within control limits ? (**6010B**: CLP = 90 - 110%; **200.7:** ICV = 95 - 105%, CCV 90-110%) If not in control, was the ICV or CCV reanalyzed twice to show return to control as per NELAP?	✓			✓
2. ICB/CCB analyzed at appropriate frequency and < RL or < CRDL (CLP) or < 2X MDL (DOD V3,AFCEE 4.0)? Was it less than the MDLV (6010C)	✓			✓
3. High Standard (HIGH) reanalyzed before samples and recovered within QC limits? (+-5%)	✓			✓
4. RL STD run and recovered within QC limits ? (± 50% for non-CLP, ± 20% for DoD V3 / AFCEE 4.0 / USACE)	✓			✓
5. Was the LLICV/LLCCV analyzed at appropriate frequency for 6010C and within control (+-30 % or +-20%)	✓			✓
6. ICSA/ICSAB run at required frequency and within SOP limits? (ICSA < 2X MDL AFCEE 4.0, DOD V3 or <RL std work or <MDLV 6010C))	✓			✓
C. Sample Results				
1. For 6010B, were samples with concentrations > the linear range for any parameter diluted and reanalyzed? For 200.7, were samples with concentrations within 90% of the linear range diluted and reanalyzed?	✓			✓
2. Are all reported results bracketed by in control QC?	✓			✓
D. Other				
1. Are all nonconformances documented appropriately?	✓			✓
2. Calculations checked for errors?	✓			✓
3. Transcriptions checked for errors? (Example: Are dilution factors that are entered into the sequence log correct?)	✓			✓
4. All client/project specific requirements met?	✓			✓
5. Date/time of analysis verified as correct?	✓			✓
6. PDF attached, verified uncorrupted?	✓			✓

Analyst: JKH Date: 4/18/11

Comments:

2nd Level Reviewer: [signature] Date: 4/18/11

Comments:

62706 - 6020 water
62711 - Soil

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Denver

ICP/MS Technical Data Review Checklist

Lab Project ID Number(s): see attached cover sheet Check Method/SOP Used: ☐6020/DV-MT-0018 ☐200.8/DV-MT-0002

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments & Samples Affected
Tune					
1. Tune solution analyzed min. of 4 times for 6020 or 5 times for 200.8?	✓			✓	
2. Tune RSD <5%?	✓			✓	
2. Resolution ≤ 0.9 AMU full width at 10% peak height? **NOTE**: This also satisfies 200.8, 1.0 AMU at 5% peak height	✓			✓	
Initial Calibration					
1. Done with a minimum of 3 integrations of a high standard and blank?	✓			✓	
2. ICV/CCV run at beginning of run, 10% frequency, and end of run? Results with 10% of expected value?	✓			✓	
3. ICB/CCB run at beginning of run, 10% frequency, and end of run? Results +/- RL	✓			✓	
4. ICSA/AB analyzed at beginning of run and every 12 hours and results 80-120% of TV?	✓			✓	
5. RL Std analyzed at beginning of run and results +/- 50% of TV(for AFCEE 4.0, DoD V3 +/- 20% of true value)?	✓			✓	
Client Samples & QC Sample Results					
1. Were all samples within linear range, ≤ 90% of LDR for 200.8?	✓			✓	
2. Dilutions due to target elements? ____ Dilutions for other reasons? ✓	✓			✓	
3. All reported results bracketed by in control QC?	✓			✓	
4. All 6020 internal standards for all analyses 30-120% of intensities in blank or all 200.8 internal standards 60-125%?	✓			✓	
5. Was a 5X serial dilution analyzed for 6020 and, if so, are results ± 10% of original result, if original ≥ 100x MDL?	✓			✓	
6. LCS included in batch and within QC limits?	✓			✓	
7. Method blank included and <1/2RL?	✓			✓	
8. MS and MSD included in batch?	✓			✓	
9. PDS analyzed and recovery 75-125%?	✓			✓	
10. Manual calculations documented properly and checked?	✓			✓	
11. Are non-conformances documented on an NCM?	✓			✓	
12. Is the appropriate raw data included?	✓			✓	
13. Are all results manually entered into LIMS verified? Are all electronic data files archived to the appropriate network locations?	✓			✓	
14. Were special client requirements met?	✓			✓	

1st Level Reviewer: _____ Date: 4/19/11

2nd Level Reviewer: Yongming Li Date: 4/19/11

METALS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Batch Number: 61884 Batch Start Date: 04/15/11 07:30 Batch Analyst: Niman, Katie M

Batch Method: 3010A Batch End Date: 04/15/11 12:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ICP SPK 2A 00024	ICP SPK 3A 00026	
MB 280-61884/1		3010A, 6010B			50 mL	50 mL			
LCS 280-61884/2		3010A, 6010B			50 mL	50 mL	0.5 mL	0.5 mL	
280-14464-A-1	FWG-LL4MW-198C-0100-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14464-A-1 DU	FWG-LL4MW-198C-0100-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14464-A-1 MS	FWG-LL4MW-198C-0100-GF	3010A, 6010B	T	<2	50 mL	50 mL	0.5 mL	0.5 mL	
280-14464-A-2	FWG-LL4MW-195C-0070-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14464-A-3	FWG-LL4MW-196C-0080-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14464-A-4	FWG-LL4MW-197C-0090-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14464-A-5	FWG-LL4MW-199C-0110-GF	3010A, 6010B	T	<2	50 mL	50 mL			

Batch Notes	
Lot # of hydrochloric acid	J46037
Lot # of Nitric Acid	K09041
Hot Block ID number	02
Oven, Bath or Block Temperature 1	95 Degrees C
Oven, Bath or Block Temperature 2	95 Degrees C
Pipette ID	MET-007
Person who witnessed spiking	KMN
ID number of the thermometer	908001558
Digestion Tube/Cup Lot #	1010191
Uncorrected Temperature	95 Degrees C
Uncorrected Temperature 2	95 Degrees C

Basis	Basis Description
T	Total/NA

METALS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-14464-1

SDG No.: A1D050441

Batch Number: 61885 Batch Start Date: 04/15/11 15:30 Batch Analyst: Mooney, Joseph C

Batch Method: 3020A Batch End Date: 04/15/11 20:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MS CALSTD-1 00037	MS CALSTD-2 00036	
MB 280-61885/1		3020A, 6020			50 mL	50 mL			
LCS 280-61885/2		3020A, 6020			50 mL	50 mL	0.1 mL	0.1 mL	
280-14464-A-1	FWG-LL4MW-198C-0100-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14464-A-1 DU	FWG-LL4MW-198C-0100-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14464-A-1 MS	FWG-LL4MW-198C-0100-GF	3020A, 6020	T	<2	50 mL	50 mL	0.1 mL	0.1 mL	
280-14464-A-2	FWG-LL4MW-195C-0070-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14464-A-3	FWG-LL4MW-196C-0080-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14464-A-4	FWG-LL4MW-197C-0090-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14464-A-5	FWG-LL4MW-199C-0110-GF	3020A, 6020	T	<2	50 mL	50 mL			

Batch Notes	
Lot # of Nitric Acid	K09041
Hot Block ID number	06
Oven, Bath or Block Temperature 1	94 Degrees C
Oven, Bath or Block Temperature 2	94 Degrees C
Pipette ID	MET-015
ID number of the thermometer	14859
Digestion Tube/Cup Lot #	1010191

Basis	Basis Description
T	Total/NA

Shipping and Receiving Documents

North Canton

2.6°, 3.1°

TestAmerica Laboratories, Inc.

SAMPLE ANALYSIS REQUISTION

Laboratory **TestAmerica Denver**
4955 Yarrow Street

Arvada, CO 80002

Lab Request SR126369

Report Package: **Expanded Deliverables**

Need Analytical Report 2011-04-19

Client Code: 1434673

Project Manager: MARK LOEB

Sample I.D.	Work Order Number	Client Sample ID	Sampling Date	Analysis Required
A1D050441-2	MGJ2K	FWG-LL4mw-198C-0100-GF	2011-04-04 15:22	WATER, 6020, Uranium by ICP/MS (Denver)
A1D050441-2	MGJ2K	FWG-LL4mw-198C-0100-GF	2011-04-04 15:22	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D050441-4	MGJ2W	FWG-LL4mw-195C-0070-GF	2011-04-04 16:05	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D050441-4	MGJ2W	FWG-LL4mw-195C-0070-GF	2011-04-04 16:05	WATER, 6020, Uranium by ICP/MS (Denver)
A1D050441-6	MGJ20	FWG-LL4mw-196C-0080-GF	2011-04-04 14:11	WATER, 6020, Uranium by ICP/MS (Denver)
A1D050441-6	MGJ20	FWG-LL4mw-196C-0080-GF	2011-04-04 14:11	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D050441-8	MGJ24	FWG-LL4mw-197C-0090-GF	2011-04-04 12:35	WATER, 6020, Uranium by ICP/MS (Denver)
A1D050441-8	MGJ24	FWG-LL4mw-197C-0090-GF	2011-04-04 12:35	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D050441-10	MGJ26	FWG-LL4mw-199C-0110-GF	2011-04-04 13:33	WATER, 6020, Uranium by ICP/MS (Denver)
A1D050441-10	MGJ26	FWG-LL4mw-199C-0110-GF	2011-04-04 13:33	WATER, 6010B, Metals B Li Mo Si (Denver)

1XL

Page 764 of 764

Please use Client Sample ID for report

Call MARK LOEB with questions at 330-497-9396

at the TAL North Canton Laboratory

Shipping Method: FED-EX

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: _____ Date/Time: 4/7/11 3:00pm

Relinquished by: _____ Date/Time: _____

Received for lab by: _____ Date/Time: 4/8/11 10 00

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

801

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END OF REPORT

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ANALYTICAL REPORT

PROJECT NO. GR11NJ00D5WRV00

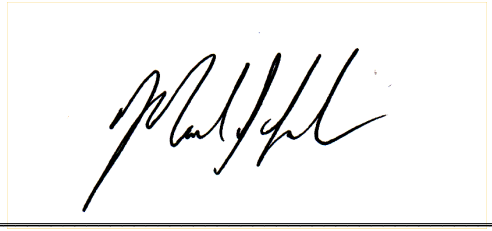
RAVENNA OH

Lot #: A1D060449

Gary L. Cottrell

U.S. Geological Survey (USGS)
Building 95, MS-407
Denver, CO 80225

TESTAMERICA LABORATORIES, INC.



Approved for release.
Mark J. Loeb
Project Manager II
6/23/2011 10:11 AM

Mark J. Loeb
Project Manager
mark.loeb@testamericainc.com

June 23, 2011

Laboratory Job No: A10960449

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION

Data reviewer: Gary Cottrell Review date: 6/27/11

Office, Project, & Account #: OK; Ravenna

2.0 DATA DELIVERABLES

Date of Lab analytical report: 6/23/11 Number of copies: bound 0 unbound 0

No. of CD copies of raw-data report: 2 Remarks:

Raw-data report reviewed? Yes / No ____ Electronic data files on CD? Yes / No ____

EDD file format: QWDATA ____ TAL QUA08 / ERPIMS ____ Other ____

Date rec'd data deliverables: 6/27/11 Date sent deliverables to USGS office 6/27/11

3.0 INVOICE STATUS FOR LOT: OK

4.0 SAMPLE INFORMATION *(Page #'s listed in this worksheet refer to lab analytical report)*

Sample collection date(s): 4/5/11 Sample matrix:

No. of sample types in lot: Environmental 5 Trip blank ____ Equip. blank ____

MS/MSD ____ Other:

Date samples received at laboratory: 4/6/11

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes ____ No /

If yes, list TAT period and if completed:

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES / NO ____

If **no**, list missing or cancelled analyses and reason for non-performance:

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes / No ____

If **no**, list sample/lab IDs, and associated problems or reference lab report case narrative:

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes ✓ No ____

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

4.5 Did surrogate recoveries meet QC acceptance criteria? Yes _____ No _____ NA ✓

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s:_____

4.6 Were dilution factors greater than 1 for ***organic*** analyses? Yes____ No____ NA ✓

If **yes**, list analytical methods and reason for raised dilution factors: dilution _____

high-analyte levels _____ matrix interferences _____ other _____

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes ✓ No____ NA_____

If **yes**, list analytical methods and reason for raised dilution factors:

high-analyte levels ✓ matrix interferences _____ other _____

SO_4 = x2; P19, 20

4.8 Additional comments about sample analyses: _____

Laboratory Job No: A10080449

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Were any target analytes detected in the **Laboratory Method Blanks**? Yes ____ No ✓

If **yes**, list method, analytes, prep batch #, report page #s: _____

5.2 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes ✓ No ____

If **no**, list method, analytes, LCS/LCSD, prep batch #, report page #s: _____

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes ____ No ✓ NA ____

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

If **no**, list method, analytes; MS, MSD or RPD; and lab report page #:

F - Low Recovery - P31 + P35

Ortho P - Low Recovery - P32 + P35

Ortho P - High Recovery - P37 + P39

U - High Recovery - P58

NOTE: Cl spike P39 overwhelmed by Sample Concentration

5.4 Did the **lab-sample duplicate** results meet RPD acceptance criteria? Yes ___ No ___ NA ___

If **no**, list method, analytes, prep batch #, report page #s, _____

5.5 Additional comments about QC results: _____

Laboratory Job No:_____

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

_____ VOCs by GC/MS--method 8260B/ 524.2 *[water (W) or solids (S) analysis holding-time (HT) of 14 days]*

_____ Gasoline Range Organics (GRO)+BTEX-method 8015B(GRO)/ 8021 *[W and S: analysis HT 14 days]*

_____ Diesel Range Organics-method 8015B-DRO *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

_____ Pesticides by GC--method 8081A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

_____ PCBs by GC--method 8082 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Pesticides by GC--method 8141A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

_____ Herbicides by GC--method 8151A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ SVOCs by GC/MS--method 8270C *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Dioxins and Furans--methods 8280/ 8290/ 1613 *[W and S: prep HT 30 days; analysis HT 45 days]*

_____ PAHs by HPLC method 8310 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Explosives by HPLC method 8330 or 8321A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Hexane extractable materials (HEM and SGT-HEM)-method 1664/ 9071B *[W/S: analysis HT 28 days]*

_____ Total organic carbon (TOC) or DOC--methods 415.1 or 9060 or 5310B *[W: analysis HT 28 days]*

_____ Perchlorate--methods 314.0 or 6850 LC/MS/MS or 6860 IC/MS/MS *[W: analysis HT 28 days]*

_____ Metals by ICP--method 6010B or 200.7 *[W and S: analysis HT 180 days]*

_____ Metals by ICP/MS--method 6020 or 200.8 *[W and S: analysis HT 180 days]*

_____ Mercury by CVAA--method 7470A (W) and 7471A (S) *[W and S: analysis HT 28 days]*

_____ Inorganic anions-method 300/ 9056 *[W: analysis HT **48 hours**-* NO_2, NO_3, ortho-P*; HT 28 days--*Br,Cl ,F, SO_4*]*

_____ Total dissolved solids (TDS)--method 2540C and(or) TSS--method 2540D *[W: analysis HT 7 days]*

_____ Alkalinity--method 310.1 (Total, OH, HCO_3, and CO_3) *[W: analysis HT 14 days]*

_____ Nitrogen, ammonia--method ~~350.1~~ 350.2 *[W: analysis HT 28 days]*

_____ Nitrogen, TKN--method 351.2 *[W: analysis HT 28 days]*

_____ Nitrogen, nitrate + nitrite--method 353.2 *[W: analysis HT 28 days]* NO_3 or NO_2 only *[HT **48 hours**]*

_____ Nitrogen, nitrite--method 353.2 or 354.1 *[W: analysis HT **48 hours**]*

_____ Phosphorus-method 365.3 and ortho P by 365.3 *[Phosphorus.: W: analysis HT 28 days, ortho P **48 hours**]*

_____ Phosphorus-method 365.1 and ortho P by 365.1 *[Phosphorus: W: analysis HT 28 days, ortho P **48 hours**]*

_____ Cyanide, total, dissolved, or amenable--methods 9012A/ 335.4 *[W and S: analysis HT 14 days]*

_____MBAS surfactants – method 425.1 ***(HT 48 hours)***

_____ Moisture content--methods D2216 or 160.3M

_____ BOD--method 405.1 *(HT 48 hours)* or COD--method 410.4

_____ Turbidity--method 180.1 ***(HT 48 hours)*** ; Hardness 2340B

_____ Physical properties: pH--method 4500 H B; specific conductance—method 2510B

_____Other analyses:_____

_____

TestAmerica
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CASE NARRATIVE

CASE NARRATIVE

A1D060449

The following report contains the analytical results for five water samples submitted to TestAmerica North Canton by U.S. Geological Survey (USGS) from the RAVENNA OH Site, project number GR11NJ00D5W2100. The samples were received April 06, 2011, according to documented sample acceptance procedures.

The 6010B Metals (B Li Mo Si) and 6020 Uranium by ICP/MS analyses were performed at the TestAmerica Denver laboratory.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Mark J. Loeb, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

CASE NARRATIVE (continued)

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 1.8°C.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

Matrix spike recovery and relative percent difference (RPD) data were not calculated for some analytes for batch(es) 1097311 due to the sample concentration reading greater than four times the spike amount. See the Matrix Spike Report for the affected analytes which will be flagged with "NC, MSB".

The matrix spike/matrix spike duplicate(s) for FWGSCFMW-004-0180-GW had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 1097318 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called Quality Control Batches (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, a Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair or a Matrix Spike/Sample Duplicate (MS/DU) pair.
For 600 series/CWA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, where appropriate, a Matrix Spike (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch, with the exception of poor performing analytes. A list of these analytes is listed below. No corrective action is taken if these analytes do not meet criteria.Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

Poor performers

Method 8270 Water and Solid:	
4-Nitrophenol	3,3' – Dichlorobenzidine
Benzoic Acid	2,4,6 - Tribromophenol
Phenol 2	,4-Dinitrophenol
Phenol-d5 P	entachlorophenol
4,6-Dinitro-2-methylphenol	Hexachlorocyclopentadiene (LCG only)
Benzyl Alcohol	4-Chloroaniline
Method 8151 Solid	
Dinoseb	
Method 8260 Water and Solid	
Dichlorodifluoromethane H	exachlorobutadiene
Trichlorofluoromethane Na	phthalene
Chloroethane 1	,2,3-Trichlorobenzene
Acetone 1	,2,4-Trichlorobenzene
Bromomethane 2	,2-Dichloropropane
Bromoform C	hloromethane

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be ten fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results do not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate or Matrix Spike/Sample Duplicate.

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), DoD ELAP (ADE-1437) USDA Soil Permit (P33-08-00123)

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A1D060449

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FWGSCFMW-004-0180-GW 04/05/11 10:02 001				
Nitrogen, as Ammonia	7.2	2.0	mg/L	MCAWW 350.2
Chloride	2.1	1.0	mg/L	MCAWW 300.0A
Sulfate	334	2.0	mg/L	MCAWW 300.0A
Fluoride	0.039 B	1.0	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	0.25 B	0.50	mg/L	MCAWW 300.0A
FWGSCFMW-005-0190-GW 04/05/11 15:08 003				
Nitrogen, as Ammonia	2.8	2.0	mg/L	MCAWW 350.2
Chloride	2.9	1.0	mg/L	MCAWW 300.0A
Sulfate	232	2.0	mg/L	MCAWW 300.0A
Fluoride	0.060 B	1.0	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	0.22 B	0.50	mg/L	MCAWW 300.0A
FWGLL1MW-081C-0010-GW 04/05/11 11:23 005				
Chloride	1.7	1.0	mg/L	MCAWW 300.0A
Sulfate	129	1.0	mg/L	MCAWW 300.0A
Fluoride	0.059 B	1.0	mg/L	MCAWW 300.0A
FWGLL1MW-082C-0020-GW 04/05/11 09:23 007				
Chloride	0.91 B	1.0	mg/L	MCAWW 300.0A
Sulfate	63.7	1.0	mg/L	MCAWW 300.0A
Fluoride	0.061 B	1.0	mg/L	MCAWW 300.0A
FWGLL1MW-084C-0030-GW 04/05/11 13:25 009				
Chloride	0.95 B	1.0	mg/L	MCAWW 300.0A
Sulfate	122	1.0	mg/L	MCAWW 300.0A
Fluoride	0.033 B	1.0	mg/L	MCAWW 300.0A
Nitrate as N	0.86	0.10	mg/L	MCAWW 300.0A

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A1D060449

PARAMETER	ANALYTICAL METHOD
Ammonia Nitrogen	MCAWW 350.2
Bromide	MCAWW 300.0A
Chloride	MCAWW 300.0A
Fluoride	MCAWW 300.0A
Nitrate as N	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A
Sulfate	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

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SAMPLE SUMMARY

SAMPLE SUMMARY

A1D060449

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MGLNF	001	FWGSCFMW-004-0180-GW	04/05/11	10:02
MGLQQ	003	FWGSCFMW-005-0190-GW	04/05/11	15:08
MGLQT	005	FWGLL1MW-081C-0010-GW	04/05/11	11:23
MGLQW	007	FWGLL1MW-082C-0020-GW	04/05/11	09:23
MGLQ0	009	FWGLL1MW-084C-0030-GW	04/05/11	13:25

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.

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SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica
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TestAmerica Laboratory location: Canton
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager:	Site Contact:	Lab Contact:	COC No:
Company Name: U.S. Geological Survey	Ralph Haefner	Brian Mailot	Ken Kuzior	019552
Address: 6480 Doubletree Ave.	Telephone: 614-430-7709	Telephone: 614-430-7747	Telephone: 330-966-9374	1 of 1 COCs
City/State/Zip: Columbus, OH 43229	Email: rhaefner@usgs.gov	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only
Phone: 614-430-7700		TAT if different from below Contract		Walk-in client
Project Name: Ravenna OH	Method of Shipment/Carrier: lab pickup	☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab sampling
Project Number: GRIINJ00D5WZ100	Shipping/Tracking No:			Job/SDG No:
PO#				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Field Filtered Sample	Perform MS/MSD	Metals 6010/6020	Anions/nutrients 300.0A	Ammonia 350.1	Sample Specific Notes / Special Instructions:
FWGSCFmw-004-018U-GW	4/5/11	10:02		X				X					X		N	G		X	X	A300
FWGSCFmw-004-018U-GF	4/5/11	10:02		X					X						Y	G	X			A300
FWGSCFmw-005-019U-GW	4/5/11	15:08		X				X					X		N	G		X	X	A300
FWGSCFmw-005-019U-GF	4/5/11	15:09		X					X						Y	G	X			A300
~~kt~~ FWGLL1mw-081C-001U-GW	4/5/11	11:23		X				1					1		N	G		X	X	A300
FWGLL1mw-081C-001U-GF	4/5/11	11:23		X					1						Y	G	X			A300
FWGLL1mw-082C-002U-GW	4/5/11	09:23		X				1					1		N	G		X	X	A300
FWGLL1mw-082C-002U-GF	4/5/11	09:23		X					1						Y	G	X			A300
FWGLL1mw-084C-003U-GW	4/5/11	13:25		X				1					1		N	G		X	X	A300
FWGLL1mw-084C-003U-GF	4/5/11	13:25		X					1						Y	G	X			A300

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Metals - 6010 (B, Li, Mo, Si) 6020 (U) filtered
Anions (nutrients - 300.0A (Br, Cl, F, SO_4) nitrite, orthophosphate
Nitrogen, ammonia - 350.1

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian E Mailot	USGS	4/5/11 18:33	TC	TAL-XIC	4/5/11 1833
TC	TAL-XIC	4/5/11 1952		Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
				CA NC	4/6/11 0700

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North Canton

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: 41D060449

Client US. Geological Survey Project Ravenna By: [signature] (Signature)
Cooler Received on 4-6-11 Opened on 4-6-11
FedEx ☒ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☒ Other _____
TestAmerica Cooler # A300 Multiple Coolers ☐ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity _____ Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☐ No ☒
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt 1.8 °C See back of form for multiple coolers/temps ☐
   METHOD: IR ☒ Other ☐ _____
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☐ NA ☒
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☒ Were VOAs on the COC? Yes ☐ No ☒

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 100110-HNO_3; *Sulfuric Acid Lot#* 110410-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
18U GW	<2	4-6-11	[initials]
19U	<2		
001U	<2		
002U	<2		
003U	<2		
18U GF	<2		
19U	<2		
001U	<2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
0020 GF	≤2	4-6-11	MP
0030 ↓	≤2	↓	↓

Cooler #	Temp. °C	Method	Coolant

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GENERAL CHEMISTRY DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGSCFMW-004-0180-GW

General Chemistry

Lot-Sample #...: A1D060449-001 **Work Order #...:** MGLNF **Matrix.....:** WG
Date Sampled...: 04/05/11 10:02 **Date Received..:** 04/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1				
Chloride	**2.1**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097311**
		Dilution Factor: 1				
Fluoride	**0.039 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097310**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1				
Nitrogen, as Ammonia	**7.2**	**2.0**	**mg/L**	**MCAWW 350.2**	**04/08/11**	**1098085**
		Dilution Factor: 1				
Phosphate as P, Ortho	**0.25 B**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097318**
		Dilution Factor: 1				
Sulfate	**334**	**2.0**	**mg/L**	**MCAWW 300.0A**	**04/07/11**	**1098197**
		Dilution Factor: 2				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGSCFMW-005-0190-GW

General Chemistry

Lot-Sample #...: A1D060449-003 **Work Order #...:** MGLQQ **Matrix.....:** WG
Date Sampled...: 04/05/11 15:08 **Date Received..:** 04/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1				
Chloride	**2.9**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097311**
		Dilution Factor: 1				
Fluoride	**0.060 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097310**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1				
Nitrogen, as Ammonia	**2.8**	**2.0**	**mg/L**	**MCAWW 350.2**	**04/08/11**	**1098085**
		Dilution Factor: 1				
Phosphate as P, Ortho	**0.22 B**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097318**
		Dilution Factor: 1				
Sulfate	**232**	**2.0**	**mg/L**	**MCAWW 300.0A**	**04/07/11**	**1098207**
		Dilution Factor: 2				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1MW-081C-0010-GW

General Chemistry

Lot-Sample #...: A1D060449-005 **Work Order #...:** MGLQT **Matrix.....:** WG
Date Sampled...: 04/05/11 11:23 **Date Received..:** 04/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1				
Chloride	**1.7**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097311**
		Dilution Factor: 1				
Fluoride	**0.059 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097310**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Sulfate	**129**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097320**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1MW-082C-0020-GW

General Chemistry

Lot-Sample #...: A1D060449-007 **Work Order #...:** MGLQW **Matrix.....:** WG
Date Sampled...: 04/05/11 09:23 **Date Received..:** 04/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1				
Chloride	**0.91 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097311**
		Dilution Factor: 1				
Fluoride	**0.061 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097310**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Sulfate	**63.7**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097320**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1MW-084C-0030-GW

General Chemistry

Lot-Sample #...: A1D060449-009 **Work Order #...:** MGLQ0 **Matrix.....:** WG
Date Sampled...: 04/05/11 13:25 **Date Received..:** 04/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1				
Chloride	**0.95 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097311**
		Dilution Factor: 1				
Fluoride	**0.033 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097310**
		Dilution Factor: 1				
Nitrate as N	**0.86**	**0.10**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097317**
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Sulfate	**122**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/06/11**	**1097320**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #: MGPC81AA		MB Lot-Sample #:	A1D070000-315	
	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1				
Chloride		Work Order #: MGPC01AA		MB Lot-Sample #:	A1D070000-311	
	ND	1.0	mg/L	MCAWW 300.0A	04/06/11	1097311
		Dilution Factor: 1				
Fluoride		Work Order #: MGPCV1AA		MB Lot-Sample #:	A1D070000-310	
	ND	1.0	mg/L	MCAWW 300.0A	04/06/11	1097310
		Dilution Factor: 1				
Nitrate as N		Work Order #: MGPDC1AA		MB Lot-Sample #:	A1D070000-317	
	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1				
Nitrite as N		Work Order #: MGPC41AA		MB Lot-Sample #:	A1D070000-314	
	ND	0.10	mg/L	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1				
Nitrogen, as Ammonia		Work Order #: MGQQH1AA		MB Lot-Sample #:	A1D080000-085	
	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho		Work Order #: MGPDG1AA		MB Lot-Sample #:	A1D070000-318	
	ND	0.50	mg/L	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1				
Sulfate		Work Order #: MGPDM1AA		MB Lot-Sample #:	A1D070000-320	
	ND	1.0	mg/L	MCAWW 300.0A	04/06/11	1097320
		Dilution Factor: 1				
Sulfate		Work Order #: MGQL91AA		MB Lot-Sample #:	A1D080000-197	
	ND	1.0	mg/L	MCAWW 300.0A	04/07/11	1098197
		Dilution Factor: 1				
Sulfate		Work Order #: MGQM41AA		MB Lot-Sample #:	A1D080000-207	
	ND	1.0	mg/L	MCAWW 300.0A	04/07/11	1098207
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A1D060449 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#:MGPC81AC-LCS/MGPC81AD-LCSD LCS Lot-Sample#: A1D070000-315					
	98	(90 - 110)			MCAWW 300.0A	04/06/11	1097315
	98	(90 - 110)	0.49	(0-20)	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1					
Chloride		WO#:MGPC01AC-LCS/MGPC01AD-LCSD LCS Lot-Sample#: A1D070000-311					
	100	(90 - 110)			MCAWW 300.0A	04/06/11	1097311
	100	(90 - 110)	0.04	(0-20)	MCAWW 300.0A	04/06/11	1097311
		Dilution Factor: 1					
Fluoride		WO#:MGPCV1AC-LCS/MGPCV1AD-LCSD LCS Lot-Sample#: A1D070000-310					
	95	(90 - 110)			MCAWW 300.0A	04/06/11	1097310
	95	(90 - 110)	0.04	(0-20)	MCAWW 300.0A	04/06/11	1097310
		Dilution Factor: 1					
Nitrate as N		WO#:MGPDC1AC-LCS/MGPDC1AD-LCSD LCS Lot-Sample#: A1D070000-317					
	96	(90 - 110)			MCAWW 300.0A	04/06/11	1097317
	96	(90 - 110)	0.12	(0-20)	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1					
Nitrite as N		WO#:MGPC41AC-LCS/MGPC41AD-LCSD LCS Lot-Sample#: A1D070000-314					
	98	(90 - 110)			MCAWW 300.0A	04/06/11	1097314
	98	(90 - 110)	0.73	(0-20)	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#:MGPDG1AC-LCS/MGPDG1AD-LCSD LCS Lot-Sample#: A1D070000-318					
	98	(90 - 110)			MCAWW 300.0A	04/06/11	1097318
	99	(90 - 110)	1.2	(0-20)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1					
Sulfate		WO#:MGPDM1AC-LCS/MGPDM1AD-LCSD LCS Lot-Sample#: A1D070000-320					
	96	(90 - 110)			MCAWW 300.0A	04/06/11	1097320
	95	(90 - 110)	0.79	(0-20)	MCAWW 300.0A	04/06/11	1097320
		Dilution Factor: 1					
Sulfate		WO#:MGQL91AC-LCS/MGQL91AD-LCSD LCS Lot-Sample#: A1D080000-197					
	94	(90 - 110)			MCAWW 300.0A	04/07/11	1098197
	94	(90 - 110)	0.04	(0-20)	MCAWW 300.0A	04/07/11	1098197
		Dilution Factor: 1					

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A1D060449 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#:MGQM41AC-LCS/MGQM41AD-LCSD			LCS Lot-Sample#: A1D080000-207		
	94	(90 - 110)			MCAWW 300.0A	04/07/11	1098207
	94	(90 - 110)	0.04	(0-20)	MCAWW 300.0A	04/07/11	1098207

Dilution Factor: 1

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A1D060449 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#:MGPC81AC-LCS/MGPC81AD-LCSD LCS Lot-Sample#: A1D070000-315						
	10.0	9.8	mg/L	98		MCAWW 300.0A	04/06/11	1097315
	10.0	9.8	mg/L	98	0.49	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1						
Chloride		WO#:MGPC01AC-LCS/MGPC01AD-LCSD LCS Lot-Sample#: A1D070000-311						
	50.0	49.9	mg/L	100		MCAWW 300.0A	04/06/11	1097311
	50.0	49.9	mg/L	100	0.04	MCAWW 300.0A	04/06/11	1097311
		Dilution Factor: 1						
Fluoride		WO#:MGPCV1AC-LCS/MGPCV1AD-LCSD LCS Lot-Sample#: A1D070000-310						
	2.5	2.4	mg/L	95		MCAWW 300.0A	04/06/11	1097310
	2.5	2.4	mg/L	95	0.04	MCAWW 300.0A	04/06/11	1097310
		Dilution Factor: 1						
Nitrate as N		WO#:MGPDC1AC-LCS/MGPDC1AD-LCSD LCS Lot-Sample#: A1D070000-317						
	2.5	2.4	mg/L	96		MCAWW 300.0A	04/06/11	1097317
	2.5	2.4	mg/L	96	0.12	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1						
Nitrite as N		WO#:MGPC41AC-LCS/MGPC41AD-LCSD LCS Lot-Sample#: A1D070000-314						
	2.5	2.5	mg/L	98		MCAWW 300.0A	04/06/11	1097314
	2.5	2.4	mg/L	98	0.73	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1						
Phosphate as P, Ortho		WO#:MGPDG1AC-LCS/MGPDG1AD-LCSD LCS Lot-Sample#: A1D070000-318						
	2.5	2.5	mg/L	98		MCAWW 300.0A	04/06/11	1097318
	2.5	2.5	mg/L	99	1.2	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1						
Sulfate		WO#:MGPDM1AC-LCS/MGPDM1AD-LCSD LCS Lot-Sample#: A1D070000-320						
	50.0	48.0	mg/L	96		MCAWW 300.0A	04/06/11	1097320
	50.0	47.6	mg/L	95	0.79	MCAWW 300.0A	04/06/11	1097320
		Dilution Factor: 1						
Sulfate		WO#:MGQL91AC-LCS/MGQL91AD-LCSD LCS Lot-Sample#: A1D080000-197						
	50.0	46.8	mg/L	94		MCAWW 300.0A	04/07/11	1098197
	50.0	46.8	mg/L	94	0.04	MCAWW 300.0A	04/07/11	1098197
		Dilution Factor: 1						

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LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A1D060449 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate	WO#:MGQM41AC-LCS/MGQM41AD-LCSD LCS Lot-Sample#: A1D080000-207							
	50.0	46.8	mg/L	94		MCAWW 300.0A	04/07/11	1098207
	50.0	46.8	mg/L	94	0.04	MCAWW 300.0A	04/07/11	1098207

Dilution Factor: 1

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia		Work Order #: MGQQH1AC	LCS Lot-Sample#: A1D080000-085		
	94	(85 - 114)	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	Work Order #: MGQQH1AC				LCS Lot-Sample#: A1D080000-085		
	14	13	mg/L	94	MCAWW 350.2	04/08/11	1098085
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WG
Date Sampled...: 04/05/11 13:25 **Date Received..:** 04/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#: MGLNF1AR-MS/MGLNF1AT-MSD				MS Lot-Sample #: A1D060449-001	
	88	(80 - 120)			MCAWW 300.0A	04/06/11	1097315
	91	(80 - 120)	3.1	(0-20)	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1					
Bromide		WO#: MGLQ01AR-MS/MGLQ01AT-MSD				MS Lot-Sample #: A1D060449-009	
	88	(80 - 120)			MCAWW 300.0A	04/06/11	1097315
	90	(80 - 120)	2.0	(0-20)	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1					
Chloride		WO#: MGLNF1AM-MS/MGLNF1AN-MSD				MS Lot-Sample #: A1D060449-001	
	96	(80 - 120)			MCAWW 300.0A	04/06/11	1097311
	99	(80 - 120)	2.9	(0-20)	MCAWW 300.0A	04/06/11	1097311
		Dilution Factor: 1					
Chloride		WO#: MGLQ01AM-MS/MGLQ01AN-MSD				MS Lot-Sample #: A1D060449-009	
	94	(80 - 120)			MCAWW 300.0A	04/06/11	1097311
	97	(80 - 120)	2.7	(0-20)	MCAWW 300.0A	04/06/11	1097311
		Dilution Factor: 1					
Fluoride		WO#: MGLNF1AK-MS/MGLNF1AL-MSD				MS Lot-Sample #: A1D060449-001	
	73 N	(80 - 120)			MCAWW 300.0A	04/06/11	1097310
	75 N	(80 - 120)	2.5	(0-20)	MCAWW 300.0A	04/06/11	1097310
		Dilution Factor: 1					
Fluoride		WO#: MGLQ01AK-MS/MGLQ01AL-MSD				MS Lot-Sample #: A1D060449-009	
	85	(80 - 120)			MCAWW 300.0A	04/06/11	1097310
	87	(80 - 120)	2.1	(0-20)	MCAWW 300.0A	04/06/11	1097310
		Dilution Factor: 1					
Nitrate as N		WO#: MGLNF1AU-MS/MGLNF1AV-MSD				MS Lot-Sample #: A1D060449-001	
	89	(80 - 120)			MCAWW 300.0A	04/06/11	1097317
	92	(80 - 120)	2.6	(0-20)	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1					
Nitrate as N		WO#: MGLQ01AU-MS/MGLQ01AV-MSD				MS Lot-Sample #: A1D060449-009	
	90	(80 - 120)			MCAWW 300.0A	04/06/11	1097317
	93	(80 - 120)	2.2	(0-20)	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1					
Nitrite as N		WO#: MGLNF1AP-MS/MGLNF1AQ-MSD				MS Lot-Sample #: A1D060449-001	
	108	(80 - 120)			MCAWW 300.0A	04/06/11	1097314
	109	(80 - 120)	0.25	(0-20)	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1					

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MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WG
Date Sampled...: 04/05/11 13:25 **Date Received..:** 04/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite as N		WO#: MGLQ01AP-MS/MGLQ01AQ-MSD				MS Lot-Sample #: A1D060449-009	
	108	(80 - 120)			MCAWW 300.0A	04/06/11	1097314
	109	(80 - 120)	0.91	(0-20)	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#: MGLNF1AW-MS/MGLNF1AX-MSD				MS Lot-Sample #: A1D060449-001	
	53 N	(80 - 120)			MCAWW 300.0A	04/06/11	1097318
	60 N	(80 - 120)	10	(0-20)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#: MGLQ01AW-MS/MGLQ01AX-MSD				MS Lot-Sample #: A1D060449-009	
	103	(80 - 120)			MCAWW 300.0A	04/06/11	1097318
	109	(80 - 120)	5.7	(0-20)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1					
Sulfate		WO#: MGLQQ1AR-MS/MGLQQ1AT-MSD				MS Lot-Sample #: A1D060449-003	
	91	(80 - 120)			MCAWW 300.0A	04/07/11	1098207
	85	(80 - 120)	1.0	(0-20)	MCAWW 300.0A	04/07/11	1098207
		Dilution Factor: 1					
Sulfate		WO#: MGLQ01A0-MS/MGLQ01A1-MSD				MS Lot-Sample #: A1D060449-009	
	107	(80 - 120)			MCAWW 300.0A	04/06/11	1097320
	113	(80 - 120)	1.7	(0-20)	MCAWW 300.0A	04/06/11	1097320
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WG
Date Sampled...: 04/05/11 13:25 **Date Received..:** 04/06/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide			WO#: MGLNF1AR-MS/MGLNF1AT-MSD				MS Lot-Sample #: A1D060449-001		
	ND	10.0	8.8	mg/L	88		MCAWW 300.0A	04/06/11	1097315
	ND	10.0	9.1	mg/L	91	3.1	MCAWW 300.0A	04/06/11	1097315
			Dilution Factor: 1						
Bromide			WO#: MGLQ01AR-MS/MGLQ01AT-MSD				MS Lot-Sample #: A1D060449-009		
	ND	10.0	8.8	mg/L	88		MCAWW 300.0A	04/06/11	1097315
	ND	10.0	9.0	mg/L	90	2.0	MCAWW 300.0A	04/06/11	1097315
			Dilution Factor: 1						
Chloride			WO#: MGLNF1AM-MS/MGLNF1AN-MSD				MS Lot-Sample #: A1D060449-001		
	2.1	50.0	50.0	mg/L	96		MCAWW 300.0A	04/06/11	1097311
	2.1	50.0	51.4	mg/L	99	2.9	MCAWW 300.0A	04/06/11	1097311
			Dilution Factor: 1						
Chloride			WO#: MGLQ01AM-MS/MGLQ01AN-MSD				MS Lot-Sample #: A1D060449-009		
	0.95	50.0	48.1	mg/L	94		MCAWW 300.0A	04/06/11	1097311
	0.95	50.0	49.4	mg/L	97	2.7	MCAWW 300.0A	04/06/11	1097311
			Dilution Factor: 1						
Fluoride			WO#: MGLNF1AK-MS/MGLNF1AL-MSD				MS Lot-Sample #: A1D060449-001		
	0.039	2.5	1.9 N	mg/L	73		MCAWW 300.0A	04/06/11	1097310
	0.039	2.5	1.9 N	mg/L	75	2.5	MCAWW 300.0A	04/06/11	1097310
			Dilution Factor: 1						
Fluoride			WO#: MGLQ01AK-MS/MGLQ01AL-MSD				MS Lot-Sample #: A1D060449-009		
	0.033	2.5	2.2	mg/L	85		MCAWW 300.0A	04/06/11	1097310
	0.033	2.5	2.2	mg/L	87	2.1	MCAWW 300.0A	04/06/11	1097310
			Dilution Factor: 1						
Nitrate as N			WO#: MGLNF1AU-MS/MGLNF1AV-MSD				MS Lot-Sample #: A1D060449-001		
	ND	2.5	2.2	mg/L	89		MCAWW 300.0A	04/06/11	1097317
	ND	2.5	2.3	mg/L	92	2.6	MCAWW 300.0A	04/06/11	1097317
			Dilution Factor: 1						
Nitrate as N			WO#: MGLQ01AU-MS/MGLQ01AV-MSD				MS Lot-Sample #: A1D060449-009		
	0.86	2.5	3.1	mg/L	90		MCAWW 300.0A	04/06/11	1097317
	0.86	2.5	3.2	mg/L	93	2.2	MCAWW 300.0A	04/06/11	1097317
			Dilution Factor: 1						
Nitrite as N			WO#: MGLNF1AP-MS/MGLNF1AQ-MSD				MS Lot-Sample #: A1D060449-001		
	ND	2.5	2.7	mg/L	108		MCAWW 300.0A	04/06/11	1097314
	ND	2.5	2.7	mg/L	109	0.25	MCAWW 300.0A	04/06/11	1097314
			Dilution Factor: 1						

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MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WG
Date Sampled...: 04/05/11 13:25 **Date Received..:** 04/06/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite as N			WO#: MGLQ01AP-MS/MGLQ01AQ-MSD				MS Lot-Sample #: A1D060449-009		
	ND	2.5	2.7	mg/L	108		MCAWW 300.0A	04/06/11	1097314
	ND	2.5	2.7	mg/L	109	0.91	MCAWW 300.0A	04/06/11	1097314
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGLNF1AW-MS/MGLNF1AX-MSD				MS Lot-Sample #: A1D060449-001		
	0.25	2.5	1.6 N	mg/L	53		MCAWW 300.0A	04/06/11	1097318
	0.25	2.5	1.7 N	mg/L	60	10	MCAWW 300.0A	04/06/11	1097318
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGLQ01AW-MS/MGLQ01AX-MSD				MS Lot-Sample #: A1D060449-009		
	ND	2.5	2.6	mg/L	103		MCAWW 300.0A	04/06/11	1097318
	ND	2.5	2.7	mg/L	109	5.7	MCAWW 300.0A	04/06/11	1097318
			Dilution Factor: 1						
Sulfate			WO#: MGLQQ1AR-MS/MGLQQ1AT-MSD				MS Lot-Sample #: A1D060449-003		
	232	50.0	277	mg/L	91		MCAWW 300.0A	04/07/11	1098207
	232	50.0	274	mg/L	85	1.0	MCAWW 300.0A	04/07/11	1098207
			Dilution Factor: 1						
Sulfate			WO#: MGLQ01A0-MS/MGLQ01A1-MSD				MS Lot-Sample #: A1D060449-009		
	122	50.0	176	mg/L	107		MCAWW 300.0A	04/06/11	1097320
	122	50.0	179	mg/L	113	1.7	MCAWW 300.0A	04/06/11	1097320
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WG
Date Sampled...: 04/05/11 10:02 **Date Received..:** 04/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: MGLNF1AR		MS Lot-Sample #: A1D060449-001	
	88	(80 - 120)	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1			
Bromide		Work Order #...: MGLQ01AR		MS Lot-Sample #: A1D060449-009	
	88	(80 - 120)	MCAWW 300.0A	04/06/11	1097315
		Dilution Factor: 1			
Chloride		Work Order #...: MGLNF1AM		MS Lot-Sample #: A1D060449-001	
	96	(80 - 120)	MCAWW 300.0A	04/06/11	1097311
		Dilution Factor: 1			
Chloride		Work Order #...: MGLQ01AM		MS Lot-Sample #: A1D060449-009	
	94	(80 - 120)	MCAWW 300.0A	04/06/11	1097311
		Dilution Factor: 1			
Fluoride		Work Order #...: MGLNF1AK		MS Lot-Sample #: A1D060449-001	
	73 N	(80 - 120)	MCAWW 300.0A	04/06/11	1097310
		Dilution Factor: 1			
Fluoride		Work Order #...: MGLQ01AK		MS Lot-Sample #: A1D060449-009	
	85	(80 - 120)	MCAWW 300.0A	04/06/11	1097310
		Dilution Factor: 1			
Nitrate as N		Work Order #...: MGLNF1AU		MS Lot-Sample #: A1D060449-001	
	89	(80 - 120)	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1			
Nitrate as N		Work Order #...: MGLQ01AU		MS Lot-Sample #: A1D060449-009	
	90	(80 - 120)	MCAWW 300.0A	04/06/11	1097317
		Dilution Factor: 1			
Nitrite as N		Work Order #...: MGLNF1AP		MS Lot-Sample #: A1D060449-001	
	108	(80 - 120)	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1			
Nitrite as N		Work Order #...: MGLQ01AP		MS Lot-Sample #: A1D060449-009	
	108	(80 - 120)	MCAWW 300.0A	04/06/11	1097314
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGLNF1AW		MS Lot-Sample #: A1D060449-001	
	53 N	(80 - 120)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1			

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WG
Date Sampled...: 04/05/11 10:02 **Date Received..:** 04/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho		Work Order #...: MGLQ01AW		MS Lot-Sample #:	A1D060449-009
	103	(80 - 120)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1			
Sulfate		Work Order #...: MGLQQ1AR		MS Lot-Sample #:	A1D060449-003
	91	(80 - 120)	MCAWW 300.0A	04/07/11	1098207
		Dilution Factor: 1			
Sulfate		Work Order #...: MGLQ01A0		MS Lot-Sample #:	A1D060449-009
	107	(80 - 120)	MCAWW 300.0A	04/06/11	1097320
		Dilution Factor: 1			

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WATER
Date Sampled...: 03/29/11 14:50 **Date Received..:** 03/31/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	WO#: MGAA51AU-MS/MGAA51AV-MSD					MS Lot-Sample #: A1C290455-001	
	104	(75 - 125)			MCAWW 350.2	04/08/11	1098085
	97	(75 - 125)	1.2	(0-20)	MCAWW 350.2	04/08/11	1098085
	Dilution Factor: 1						
Phosphate as P, Ortho	WO#: MGJ2A1AK-MS/MGJ2A1AL-MSD					MS Lot-Sample #: A1D050441-001	
	152 N	(80 - 120)			MCAWW 300.0A	04/06/11	1097318
	153 N	(80 - 120)	0.26	(0-20)	MCAWW 300.0A	04/06/11	1097318
	Dilution Factor: 1						
Phosphate as P, Ortho	WO#: MGJ221A0-MS/MGJ221A1-MSD					MS Lot-Sample #: A1D050441-007	
	162 N	(80 - 120)			MCAWW 300.0A	04/06/11	1097318
	174 N	(80 - 120)	7.5	(0-20)	MCAWW 300.0A	04/06/11	1097318
	Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WATER
Date Sampled...: 03/29/11 14:50 **Date Received..:** 03/31/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia			WO#: MGAA51AU-MS/MGAA51AV-MSD				MS Lot-Sample #: A1C290455-001		
	19	4.0	23	mg/L	104		MCAWW 350.2	04/08/11	1098085
	19	4.0	23	mg/L	97	1.2	MCAWW 350.2	04/08/11	1098085
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGJ2A1AK-MS/MGJ2A1AL-MSD				MS Lot-Sample #: A1D050441-001		
	ND	2.5	3.8 N	mg/L	152		MCAWW 300.0A	04/06/11	1097318
	ND	2.5	3.8 N	mg/L	153	0.26	MCAWW 300.0A	04/06/11	1097318
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGJ221A0-MS/MGJ221A1-MSD				MS Lot-Sample #: A1D050441-007		
	ND	2.5	4.0 N	mg/L	162		MCAWW 300.0A	04/06/11	1097318
	ND	2.5	4.4 N	mg/L	174	7.5	MCAWW 300.0A	04/06/11	1097318
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WATER
Date Sampled...: 04/04/11 15:22 **Date Received..:** 04/05/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MGDVA1AE		MS Lot-Sample #: A1C300577-001	
	112	(80 - 120)	MCAWW 300.0A	04/06/11	1097311
		Dilution Factor: 1			
Chloride		Work Order #...: MGEVM1AE		MS Lot-Sample #: A1C310476-007	
	NC,MSB	(80 - 120)	MCAWW 300.0A	04/07/11	1097311
		Dilution Factor: 20			
Nitrogen, as Ammonia		Work Order #...: MGAA51AU		MS Lot-Sample #: A1C290455-001	
	104	(75 - 125)	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGJ2A1AK		MS Lot-Sample #: A1D050441-001	
	152 N	(80 - 120)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGJ221A0		MS Lot-Sample #: A1D050441-007	
	162 N	(80 - 120)	MCAWW 300.0A	04/06/11	1097318
		Dilution Factor: 1			
Sulfate		Work Order #...: MGDVA1AF		MS Lot-Sample #: A1C300577-001	
	98	(80 - 120)	MCAWW 300.0A	04/06/11	1097320
		Dilution Factor: 1			
Sulfate		Work Order #...: MGEVM1AF		MS Lot-Sample #: A1C310476-007	
	82	(80 - 120)	MCAWW 300.0A	04/07/11	1097320
		Dilution Factor: 20			
Sulfate		Work Order #...: MGMJ71AW		MS Lot-Sample #: A1D060583-006	
	98	(80 - 120)	MCAWW 300.0A	04/07/11	1098198
		Dilution Factor: 1			

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D060449 **Matrix.....:** WATER
Date Sampled...: 03/28/11 09:50 **Date Received..:** 03/30/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	PREPARATION-METHOD	ANALYSIS DATE	PREP BATCH #
Chloride			Work Order #...: MGDVA1AE			MS Lot-Sample #: A1C300577-001		
	77.2	50.0	133	mg/L	112	MCAWW 300.0A	04/06/11	1097311
			Dilution Factor: 1					
Chloride			Work Order #...: MGEVM1AE			MS Lot-Sample #: A1C310476-007		
	1290	50.0	1260	mg/L		MCAWW 300.0A	04/07/11	1097311
			Qualifiers: NC,MSB					
			Dilution Factor: 20					
Sulfate			Work Order #...: MGDVA1AF			MS Lot-Sample #: A1C300577-001		
	9.3	50.0	58.1	mg/L	98	MCAWW 300.0A	04/06/11	1097320
			Dilution Factor: 1					
Sulfate			Work Order #...: MGEVM1AF			MS Lot-Sample #: A1C310476-007		
	53.7	50.0	94.8	mg/L	82	MCAWW 300.0A	04/07/11	1097320
			Dilution Factor: 20					
Sulfate			Work Order #...: MGMJ71AW			MS Lot-Sample #: A1D060583-006		
	10.4	50.0	59.6	mg/L	98	MCAWW 300.0A	04/07/11	1098198
			Dilution Factor: 1					

NOTE(S):

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

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD may be outside control limits because the sample amount was greater than 4X the spike amount.

DENVER DATA

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-14463-1

SDG Number: A1D060449

Job Description: USGS RVAAP

For:
TestAmerica Laboratories, Inc.
4101 Shuffel Street NW
North Canton, OH 44720

Attention: Mr. Mark J. Loeb

Approved for release.
DiLea Griego
Project Manager I
4/21/2011 9:58 AM

DiLea Griego
Project Manager I
dilea.griego@testamericainc.com
04/21/2011

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

CASE NARRATIVE

Client: TestAmerica Laboratories, Inc.

Project: USGS RVAAP

Report Number: 280-14463-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 04/08/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 2.6 C and 3.1 C.

TOTAL METALS - METHOD 6010B
No difficulties were encountered.

TOTAL METALS - METHOD 6020
The matrix spike / matrix spike duplicate (MS/MSD) samples associated with prep batch 61784 were performed on FWGSCFMW-004-0180-GF (280-14463-1). The matrix spike (MS) exhibited recoveries outside control limits for Uranium. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other difficulties were encountered.

DATA REPORTING QUALIFIERS

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Lab Section	Qualifier	Description
Metals		
	F	MS or MSD exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

SAMPLE SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-14463-1	FWGSCFMW-004-0180-GF	Water	04/05/2011 1002	04/08/2011 1000
280-14463-1MS	FWGSCFMW-004-0180-GF	Water	04/05/2011 1002	04/08/2011 1000
280-14463-1DU	FWGSCFMW-004-0180-GF	Water	04/05/2011 1002	04/08/2011 1000
280-14463-2	FWGSCFMW-005-0190-GF	Water	04/05/2011 1508	04/08/2011 1000
280-14463-3	FWGLL1MW-081C-0010-GF	Water	04/05/2011 1123	04/08/2011 1000
280-14463-4	FWGLL1MW-082C-0020-GF	Water	04/05/2011 0923	04/08/2011 1000
280-14463-5	FWGLL1MW-084C-0030-GF	Water	04/05/2011 1325	04/08/2011 1000

EXECUTIVE SUMMARY - Detections

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Lab Sample ID / Analyte	Client Sample ID / Result / Qualifier		Reporting Limit	Units	Method
280-14463-1	**FWGSCFMW-004-0180-GF**				
Boron	110		100	ug/L	6010B
Lithium	15		10	ug/L	6010B
SiO2, Silica	13000		500	ug/L	6010B
280-14463-2	**FWGSCFMW-005-0190-GF**				
Boron	28	J	100	ug/L	6010B
Lithium	14		10	ug/L	6010B
Molybdenum	5.8	J	20	ug/L	6010B
SiO2, Silica	16000		500	ug/L	6010B
Uranium	0.21	J	1.0	ug/L	6020
280-14463-3	**FWGLL1MW-081C-0010-GF**				
Boron	66	J	100	ug/L	6010B
SiO2, Silica	9600		500	ug/L	6010B
Uranium	0.31	J	1.0	ug/L	6020
280-14463-4	**FWGLL1MW-082C-0020-GF**				
Boron	47	J	100	ug/L	6010B
SiO2, Silica	18000		500	ug/L	6010B
Uranium	0.055	J	1.0	ug/L	6020
280-14463-5	**FWGLL1MW-084C-0030-GF**				
Boron	83	J	100	ug/L	6010B
SiO2, Silica	10000		500	ug/L	6010B
Uranium	0.47	J	1.0	ug/L	6020

METHOD SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A

Lab References:

TAL DEN = TestAmerica Denver

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Method	Analyst	Analyst ID
SW846 6010B	Bowen, Heidi E	HEB
SW846 6020	Diaz, Luis R	LRD

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Client Sample ID: **FWGSCFMW-004-0180-GF**

Lab Sample ID: 280-14463-1
Client Matrix: Water

Date Sampled: 04/05/2011 1002
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1813			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	110		4.4	100
Lithium	15		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	13000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	156AREF.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0211			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	ND		0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Client Sample ID: **FWGSCFMW-005-0190-GF**

Lab Sample ID: 280-14463-2
Client Matrix: Water

Date Sampled: 04/05/2011 1508
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1820			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	28	J	4.4	100
Lithium	14		2.6	10
Molybdenum	5.8	J	3.1	20
SiO2, Silica	16000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	159SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0219			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.21	J	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Client Sample ID: **FWGLL1MW-081C-0010-GF**

Lab Sample ID: 280-14463-3
Client Matrix: Water

Date Sampled: 04/05/2011 1123
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1823			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	66	J	4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	9600		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	160SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0222			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.31	J	0.020	1.0

North Carleton

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Client Sample ID: **FWGLL1MW-082C-0020-GF**

Lab Sample ID: 280-14463-4
Client Matrix: Water

Date Sampled: 04/05/2011 0923
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1825			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	47	J	4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	18000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	161SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0225			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.055	J	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Client Sample ID: **FWGLL1MW-084C-0030-GF**

Lab Sample ID: 280-14463-5
Client Matrix: Water

Date Sampled: 04/05/2011 1325
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1827			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	83	J	4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	10000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	162SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0227			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.47	J	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Method Blank - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	MB 280-61780/1-A	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1736	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Boron	ND		4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	ND		74	500

Lab Control Sample - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	LCS 280-61780/2-A	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1739	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Boron	1000	999	100	86 - 110	
Lithium	1000	1030	103	90 - 112	
Molybdenum	1000	1100	110	90 - 110	
SiO2, Silica	21400	22100	103	90 - 110	

Matrix Spike - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14463-1	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1818	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Boron	110	1000	1090	99	87 - 113	
Lithium	15	1000	1030	102	89 - 114	
Molybdenum	ND	1000	1090	109	83 - 109	
SiO2, Silica	13000	21400	34900	100	75 - 141	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Serial Dilution - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14462-A-1-A SD ^5	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1743	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Boron	270		271	2.2	10	J
Lithium	ND		ND	NC	10	
Molybdenum	5.5	J	ND	NC	10	
SiO2, Silica	15000		14800	1.2	10	

Duplicate - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14463-1	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1816	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Boron	110	105	0.2	25	
Lithium	15	16.5	11	25	
Molybdenum	ND	ND	NC	25	
SiO2, Silica	13000	13600	0.7	20	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Method Blank - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	MB 280-61784/1-A	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	141_BLK.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0129	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Uranium	ND		0.020	1.0

Lab Control Sample - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	LCS 280-61784/2-A	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	142_LCS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0132	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	40.0	42.0	105	85 - 119	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Post Digestion Spike - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14462-A-1-D PDS	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	145PDS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0140	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	1.3	200	214	107	75 - 125	

Matrix Spike - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14463-1	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	158_MS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0216	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	ND	40.0	48.2	121	85 - 119	F

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

Serial Dilution - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14462-A-1-D SD ^5	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	144SDIL.D
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0138	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Uranium	1.3	1.25	1.7	10	J

Duplicate - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14463-1	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	157_DU.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0213	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Uranium	ND	ND	NC	20	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-61780					
LCS 280-61780/2-A	Lab Control Sample	T	Water	3010A	
MB 280-61780/1-A	Method Blank	T	Water	3010A	
280-14463-1	FWGSCFMW-004-0180-GF	T	Water	3010A	
280-14463-1DU	Duplicate	T	Water	3010A	
280-14463-1MS	Matrix Spike	T	Water	3010A	
280-14463-2	FWGSCFMW-005-0190-GF	T	Water	3010A	
280-14463-3	FWGLL1MW-081C-0010-GF	T	Water	3010A	
280-14463-4	FWGLL1MW-082C-0020-GF	T	Water	3010A	
280-14463-5	FWGLL1MW-084C-0030-GF	T	Water	3010A	
Prep Batch: 280-61784					
LCS 280-61784/2-A	Lab Control Sample	T	Water	3020A	
MB 280-61784/1-A	Method Blank	T	Water	3020A	
280-14463-1	FWGSCFMW-004-0180-GF	T	Water	3020A	
280-14463-1DU	Duplicate	T	Water	3020A	
280-14463-1MS	Matrix Spike	T	Water	3020A	
280-14463-2	FWGSCFMW-005-0190-GF	T	Water	3020A	
280-14463-3	FWGLL1MW-081C-0010-GF	T	Water	3020A	
280-14463-4	FWGLL1MW-082C-0020-GF	T	Water	3020A	
280-14463-5	FWGLL1MW-084C-0030-GF	T	Water	3020A	
Analysis Batch:280-62167					
LCS 280-61780/2-A	Lab Control Sample	T	Water	6010B	280-61780
MB 280-61780/1-A	Method Blank	T	Water	6010B	280-61780
280-14463-1	FWGSCFMW-004-0180-GF	T	Water	6010B	280-61780
280-14463-1DU	Duplicate	T	Water	6010B	280-61780
280-14463-1MS	Matrix Spike	T	Water	6010B	280-61780
280-14463-2	FWGSCFMW-005-0190-GF	T	Water	6010B	280-61780
280-14463-3	FWGLL1MW-081C-0010-GF	T	Water	6010B	280-61780
280-14463-4	FWGLL1MW-082C-0020-GF	T	Water	6010B	280-61780
280-14463-5	FWGLL1MW-084C-0030-GF	T	Water	6010B	280-61780
Analysis Batch:280-62295					
LCS 280-61784/2-A	Lab Control Sample	T	Water	6020	280-61784
MB 280-61784/1-A	Method Blank	T	Water	6020	280-61784
280-14463-1	FWGSCFMW-004-0180-GF	T	Water	6020	280-61784
280-14463-1DU	Duplicate	T	Water	6020	280-61784
280-14463-1MS	Matrix Spike	T	Water	6020	280-61784
280-14463-2	FWGSCFMW-005-0190-GF	T	Water	6020	280-61784
280-14463-3	FWGLL1MW-081C-0010-GF	T	Water	6020	280-61784
280-14463-4	FWGLL1MW-082C-0020-GF	T	Water	6020	280-61784
280-14463-5	FWGLL1MW-084C-0030-GF	T	Water	6020	280-61784

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
Sdg Number: A1D060449

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis
T = Total

Certification Summary

Client: TestAmerica Laboratories, Inc.
Project/Site: USGS RVAAP

TestAmerica Job ID: 280-14463-1
SDG: A1D060449

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Denver		USDA		P330-08-00036
TestAmerica Denver	A2LA	DoD ELAP	0	2907.01
TestAmerica Denver	A2LA	ISO/IEC 17025	0	2907.01
TestAmerica Denver	Alabama	State Program	4	
TestAmerica Denver	Alaska	Alaska UST	10	UST-30
TestAmerica Denver	Arizona	State Program	9	AZ0713
TestAmerica Denver	Arkansas	State Program	6	88-0687
TestAmerica Denver	California	State Program	9	2513
TestAmerica Denver	Colorado	State Program	8	N/A
TestAmerica Denver	Connecticut	State Program	1	PH-0686
TestAmerica Denver	Florida	NELAC	4	E87667
TestAmerica Denver	Georgia	State Program	4	N/A
TestAmerica Denver	Idaho	State Program	10	CO00026
TestAmerica Denver	Illinois	NELAC	5	200017
TestAmerica Denver	Iowa	State Program	7	370
TestAmerica Denver	Kansas	NELAC	7	E-10166
TestAmerica Denver	Louisiana	NELAC	6	30785
TestAmerica Denver	Maine	State Program	1	CO0002
TestAmerica Denver	Maryland	State Program	3	268
TestAmerica Denver	Minnesota	NELAC	5	8-999-405
TestAmerica Denver	Nevada	State Program	9	CO0026
TestAmerica Denver	New Hampshire	NELAC	1	205310
TestAmerica Denver	New Jersey	NELAC	2	CO004
TestAmerica Denver	New Mexico	State Program	6	N/A
TestAmerica Denver	New York	NELAC	2	11964
TestAmerica Denver	North Carolina	North Carolina DENR	4	358
TestAmerica Denver	North Dakota	State Program	8	R-034
TestAmerica Denver	Oklahoma	State Program	6	8614
TestAmerica Denver	Oregon	NELAC	10	CO200001
TestAmerica Denver	Pennsylvania	NELAC	3	68-00664
TestAmerica Denver	South Carolina	State Program	4	72002
TestAmerica Denver	Tennessee	State Program	4	TN02944
TestAmerica Denver	Texas	NELAC	6	T104704183-08-TX
TestAmerica Denver	Utah	NELAC	8	QUAN5
TestAmerica Denver	Washington	State Program	10	C1284
TestAmerica Denver	West Virginia	West Virginia DEP	3	354
TestAmerica Denver	Wisconsin	State Program	5	999615430

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG No.: A1D060449

Project: USGS RVAAP

Client Sample ID	Lab Sample ID
FWGSCFMW-004-0180-GF	280-14463-1
FWGSCFMW-005-0190-GF	280-14463-2
FWGLL1MW-081C-0010-GF	280-14463-3
FWGLL1MW-082C-0020-GF	280-14463-4
FWGLL1MW-084C-0030-GF	280-14463-5

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGSCFMW-004-0180-GF
Lab Sample ID: 280-14463-1
Lab Name: TestAmerica Denver
Job No.: 280-14463-1
SDG ID.: A1D060449
Matrix: Water
Date Sampled: 04/05/2011 10:02
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	110	100	4.4	ug/L			1	6010B
7439-93-2	Lithium	15	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	13000	500	74	ug/L			1	6010B
7440-61-1	Uranium	ND	1.0	0.020	ug/L			1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGSCFMW-005-0190-GF
Lab Sample ID: 280-14463-2
Lab Name: TestAmerica Denver
Job No.: 280-14463-1
SDG ID.: A1D060449
Matrix: Water
Date Sampled: 04/05/2011 15:08
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	28	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	14	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	5.8	20	3.1	ug/L	J		1	6010B
14808-60-7	SiO2, Silica	16000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.21	1.0	0.020	ug/L	J		1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGLL1MW-081C-0010-GF
Lab Sample ID: 280-14463-3
Lab Name: TestAmerica Denver
Job No.: 280-14463-1
SDG ID.: A1D060449
Matrix: Water
Date Sampled: 04/05/2011 11:23
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	66	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	ND	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	9600	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.31	1.0	0.020	ug/L	J		1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGLL1MW-082C-0020-GF
Lab Sample ID: 280-14463-4
Lab Name: TestAmerica Denver
Job No.: 280-14463-1
SDG ID.: A1D060449
Matrix: Water
Date Sampled: 04/05/2011 09:23
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	47	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	ND	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	18000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.055	1.0	0.020	ug/L	J		1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGLL1MW-084C-0030-GF
Lab Sample ID: 280-14463-5
Lab Name: TestAmerica Denver
Job No.: 280-14463-1
SDG ID.: A1D060449
Matrix: Water
Date Sampled: 04/05/2011 13:25
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	83	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	ND	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	10000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.47	1.0	0.020	ug/L	J		1	6020

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

ICV Source: ICP ICVL_00049 Concentration Units: ug/L

CCV Source: ICP CCVL_00150

Analyte	ICV 280-62167/7 04/13/2011 12:36				CCV 280-62167/106 04/13/2011 17:30				CCV 280-62167/120 04/13/2011 18:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Boron	261		250	105	487		500	97	490		500	98
Lithium	259		250	104	982		1000	98	992		1000	99
Molybdenum	243		250	97	533		500	107	535		500	107
SiO2, Silica	4300		4280	101	10700		10700	100	10800		10700	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

ICV Source: ICP ICVL_00049 Concentration Units: ug/L

CCV Source: ICP CCVL_00150

Analyte	CCV 280-62167/133 04/13/2011 18:32											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Boron	487		500	97								
Lithium	987		1000	99								
Molybdenum	539		500	108								
SiO2, Silica	10700		10700	100								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

ICV Source: MS ICV_00314 Concentration Units: ug/L

CCV Source: MS CCV_00315

Analyte	ICV 280-62295/5 04/13/2011 19:14				CCV 280-62295/17 04/13/2011 19:46				CCV 280-62295/50 04/14/2011 01:21			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Uranium	40.6		40.0	101	50.0		50.0	100	50.6		50.0	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

ICV Source: MS ICV_00314 Concentration Units: ug/L

CCV Source: MS CCV_00315

Analyte	CCV 280-62295/63 04/14/2011 01:57				CCV 280-62295/75 04/14/2011 02:30							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Uranium	51.0		50.0	102	54.0		50.0	108				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Analysis Method: 6010B Instrument ID: MT_026

Lab Sample ID: CRI 280-62167/12 Concentration Units: ug/L

CRQL Check Standard Source: ICP RL STD_00346

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Boron	100	108		108	50-150
Lithium	10.0	9.61	J	96	50-150
Molybdenum	10.0	10.1	J	101	50-150
SiO2, Silica	1070	1120		105	50-150

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Analysis Method: 6020 Instrument ID: MT_024

Lab Sample ID: CRI 280-62295/9 Concentration Units: ug/L

CRQL Check Standard Source: MS RL STD_00324

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Uranium	1.00	1.02		102	50-150

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Concentration Units: ug/L

Analyte	RL	ICB 280-62167/11 04/13/2011 12:45		CCB 280-62167/107 04/13/2011 17:32		CCB 280-62167/121 04/13/2011 18:04		CCB 280-62167/134 04/13/2011 18:34	
		Found	C	Found	C	Found	C	Found	C
Boron	100	ND		ND		ND		ND	
Lithium	10	ND		ND		ND		ND	
Molybdenum	20	ND		ND		ND		ND	
SiO2, Silica	1100	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Concentration Units: ug/L

Analyte	RL	ICB 280-62295/8 04/13/2011 19:22		CCB 280-62295/19 04/13/2011 19:52		CCB 280-62295/52 04/14/2011 01:27		CCB 280-62295/64 04/14/2011 02:00	
		Found	C	Found	C	Found	C	Found	C
Uranium	1.0	ND		0.0425	J	ND		0.0382	J

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Concentration Units: ug/L

Analyte	RL	CCB 280-62295/76 04/14/2011 02:33							
		Found	C	Found	C	Found	C	Found	C
Uranium	1.0	0.0381	J						

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Concentration Units: ug/L Lab Sample ID: MB 280-61780/1-A

Instrument Code: MT_026 Batch No.: 62167

CAS No.	Analyte	Concentration	C	Q	Method
7440-42-8	Boron	ND			6010B
7439-93-2	Lithium	ND			6010B
7439-98-7	Molybdenum	ND			6010B
14808-60-7	SiO2, Silica	ND			6010B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Concentration Units: ug/L Lab Sample ID: MB 280-61784/1-A

Instrument Code: MT_024 Batch No.: 62295

CAS No.	Analyte	Concentration	C	Q	Method
7440-61-1	Uranium	ND			6020

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Lab Sample ID: ICSA 280-62167/13 Instrument ID: MT_026

Lab File ID: 26b041311.asc ICS Source: ICP ICSA_00037

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Boron		**-0.730**	
Lithium		**-0.360**	
Molybdenum		**-1.53**	
SiO2, Silica		**13.4**	
Aluminum	*500000*	*507950*	*102*
Antimony		*15.6*	
Arsenic		*4.05*	
Barium		*1.10*	
Beryllium		*-0.0700*	
Bismuth		*33.1*	
Cadmium		*-0.460*	
Calcium	*500000*	*460710*	*92*
Chromium		*2.02*	
Cobalt		*-1.29*	
Copper		*4.64*	
Iron	*200000*	*186030*	*93*
Lead		*-4.82*	
Magnesium	*500000*	*498380*	*100*
Manganese		*2.32*	
Nickel		*0.850*	
Phosphorus		*-0.280*	
Potassium		*139*	
Selenium		*2.43*	
Silicon		*6.24*	
Silver		*0.0200*	
Sodium		*137*	
Strontium		*-2.43*	
Thallium		*-1.93*	
Thorium		*19.1*	
Tin		*-0.340*	
Titanium		*-2.93*	
Vanadium		*3.28*	
Zinc		*5.95*	
Zirconium		*4.68*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Lab Sample ID: ICSAB 280-62167/14 Instrument ID: MT_026

Lab File ID: 26b041311.asc ICS Source: ICP ICSAB_00029

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Boron	**2000**	**1946**	**97**
Lithium	**1000**	**1014**	**101**
Molybdenum	**1000**	**984**	**98**
SiO2, Silica	**21400**	**21582**	**101**
Aluminum	*500000*	*513280*	*103*
Antimony	*1000*	*1033*	*103*
Arsenic	*2000*	*2088*	*104*
Barium	*500*	*501*	*100*
Beryllium	*500*	*486*	*97*
Bismuth	*1000*	*1047*	*105*
Cadmium	*1000*	*1039*	*104*
Calcium	*500000*	*470530*	*94*
Chromium	*500*	*500*	*100*
Cobalt	*500*	*481*	*96*
Copper	*500*	*528*	*106*
Iron	*200000*	*188470*	*94*
Lead	*1000*	*984*	*98*
Magnesium	*500000*	*499350*	*100*
Manganese	*500*	*513*	*103*
Nickel	*1000*	*967*	*97*
Phosphorus	*2000*	*2054*	*103*
Potassium	*50000*	*51462*	*103*
Selenium	*5000*	*4709*	*94*
Silicon	*10000*	*10085*	*101*
Silver	*1000*	*1077*	*108*
Sodium	*50000*	*50149*	*100*
Strontium	*1000*	*976*	*98*
Thallium	*10000*	*9091*	*91*
Thorium	*2000*	*2109*	*105*
Tin	*10000*	*9510*	*95*
Titanium	*1000*	*1013*	*101*
Vanadium	*500*	*513*	*103*
Zinc	*1000*	*1017*	*102*
Zirconium	*1000*	*976*	*98*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Lab Sample ID: ICSA 280-62295/11 Instrument ID: MT_024

Lab File ID: 011ICSA.D ICS Source: MS ICSA_00314

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Found Percent Recovery
Uranium		**0.0064**	
Antimony		*0.256*	
Arsenic		*0.216*	
Barium		*0.173*	
Beryllium		*0.0044*	
Cadmium		*0.348*	
Chromium		*2.71*	
Cobalt		*0.0280*	
Copper		*0.219*	
Lead		*0.127*	
Manganese		*0.582*	
Molybdenum	*2000*	*2209*	*110*
Nickel		*1.02*	
Selenium		*-0.0858*	
Silver		*0.0921*	
Thallium		*0.0312*	
Thorium		*0.375*	
Tin		*0.206*	
Vanadium		*0.0980*	
Zinc		*1.52*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Lab Sample ID: ICSAB 280-62295/12 Instrument ID: MT_024

Lab File ID: 012ICSB.D ICS Source: MS ICSAB_00316

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Uranium	**100**	**106**	**106**
Antimony	*100*	*99.6*	*100*
Arsenic	*100*	*102*	*102*
Barium	*100*	*107*	*106*
Beryllium	*100*	*91.8*	*92*
Cadmium	*100*	*95.0*	*95*
Chromium	*100*	*110*	*110*
Cobalt	*100*	*102*	*102*
Copper	*100*	*89.9*	*90*
Lead	*100*	*94.5*	*94*
Manganese	*100*	*103*	*103*
Molybdenum	*2100*	*2313*	*110*
Nickel	*100*	*95.4*	*95*
Selenium	*100*	*104*	*104*
Silver	*100*	*86.5*	*86*
Thallium	*100*	*98.1*	*98*
Thorium	*100*	*117*	*117*
Tin	*100*	*103*	*103*
Vanadium	*100*	*114*	*114*
Zinc	*100*	*95.5*	*96*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Lab Sample ID: ICSA 280-62295/43 Instrument ID: MT_024

Lab File ID: 103ICSA.D ICS Source: MS ICSA_00314

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Uranium		**0.0243**	
Antimony		*0.269*	
Arsenic		*0.337*	
Barium		*0.164*	
Beryllium		*0.0072*	
Cadmium		*0.230*	
Chromium		*2.62*	
Cobalt		*0.0591*	
Copper		*0.300*	
Lead		*0.127*	
Manganese		*0.663*	
Molybdenum	*2000*	*2204*	*110*
Nickel		*1.27*	
Selenium		*0.302*	
Silver		*0.0980*	
Thallium		*0.0263*	
Tin		*0.332*	
Vanadium		*0.0639*	
Zinc		*1.76*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Lab Sample ID: ICSAB 280-62295/44 Instrument ID: MT_024

Lab File ID: 104ICSB.D ICS Source: MS ICSAB_00316

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Uranium	**100**	**105**	**105**
Antimony	*100*	*104*	*104*
Arsenic	*100*	*104*	*104*
Barium	*100*	*109*	*109*
Beryllium	*100*	*94.7*	*95*
Cadmium	*100*	*97.5*	*97*
Chromium	*100*	*110*	*110*
Cobalt	*100*	*104*	*104*
Copper	*100*	*88.7*	*89*
Lead	*100*	*93.0*	*93*
Manganese	*100*	*103*	*103*
Molybdenum	*2100*	*2391*	*114*
Nickel	*100*	*97.5*	*98*
Selenium	*100*	*104*	*104*
Silver	*100*	*87.6*	*88*
Thallium	*100*	*98.9*	*99*
Thorium	*100*	*119*	*119*
Tin	*100*	*104*	*104*
Vanadium	*100*	*115*	*115*
Zinc	*100*	*101*	*101*

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

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: FWGSCFMW-004-0180-GF MS Lab ID: 280-14463-1 MS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Boron	1090		110		1000	99	87-113		6010B
Lithium	1030		15		1000	102	89-114		6010B
Molybdenum	1090		ND		1000	109	83-109		6010B
SiO2, Silica	34900		13000		21400	100	75-141		6010B
Uranium	48.2		ND		40.0	121	85-119	F	6020

SSR = Spiked Sample Result

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

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: _____ Lab ID: 280-14462-A-1-D PDS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Uranium	214		1.3		200	107	75-125		6020

SSR = Spiked Sample Result

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

FORM VB - IN

6-IN
DUPLICATES
METALS

Client ID: FWGSCFMW-004-0180-GF DU Lab ID: 280-14463-1 DU

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

% Solids for Sample: % Solids for Duplicate:

Matrix: Water Concentration Units: ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Boron	100	110		105		0.2		6010B
Lithium	10	15		16.5		11		6010B
Molybdenum	20	ND		ND		NC		6010B
SiO2, Silica	500	13000		13600		0.7		6010B
Uranium	1.0	ND		ND		NC		6020

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

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-61780/2-A

Lab Name: TestAmerica Denver Job No.: 280-14463-1

Sample Matrix: Water LCS Source: ICP SPK 2A_00024

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Boron	1000	999		100	86	110		6010B
Lithium	1000	1030		103	90	112		6010B
Molybdenum	1000	1100		110	90	110		6010B
SiO2, Silica	21400	22100		103	90	110		6010B

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-61784/2-A

Lab Name: TestAmerica Denver Job No.: 280-14463-1

Sample Matrix: Water LCS Source: MS CALSTD-1_00037

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Uranium	40.0	42.0		105	85	119		6020

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

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-14462-A-1-A SD ^5

SDG No: A1D060449

Lab Name: TestAmerica Denver Job No: 280-14463-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Boron	270		271	J	2.2		6010B
Lithium	ND		ND		NC		6010B
Molybdenum	5.5	J	ND		NC		6010B
SiO2, Silica	15000		14800		1.2		6010B

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-14462-A-1-D SD ^5

SDG No: A1D060449

Lab Name: TestAmerica Denver Job No: 280-14463-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Uranium	1.3		1.25	J	1.7		6020

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

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG Number: A1D060449

Matrix: Water Instrument ID: MT_026

Analysis Method: 6010B MDL Date: 02/23/2011 08:42

Prep Method: 3010A

Leach Method:

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Boron	208.9	100	4.37
Lithium	670.7	10	2.61
Molybdenum	202	20	3.13
SiO2, Silica	288.1	500	74.3

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG Number: A1D060449

Matrix: Water Instrument ID: MT_026

Analysis Method: 6010B XMDL Date: 02/23/2011 08:43

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Boron		100	4.37
Lithium		10	2.61
Molybdenum		20	3.13
SiO2, Silica		1100	74.3

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG Number: A1D060449

Matrix: Water Instrument ID: MT_024

Analysis Method: 6020 MDL Date: 04/26/2010 12:11

Prep Method: 3020A

Leach Method:

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Uranium	238	1	0.02

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG Number: A1D060449

Matrix: Water Instrument ID: MT_024

Analysis Method: 6020 XMDL Date: 04/26/2010 12:12

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Uranium		1	0.02

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG No.: A1D060449

ICP-AES Instrument ID: MT_026 Date: 01/21/2011

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Aluminum	167.079													0.002220	
Aluminum	309.271														
Antimony	206.833		-0.000005						-0.000008			0.016260		0.000032	
Arsenic	189.042		-0.000022									-0.001070			
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061										-0.002850			-0.000021	
Boron	208.959														
Cadmium	228.802			0.004243							0.000016				
Calcium	317.933														
Chromium	205.552						-0.002780								
Cobalt	228.616					-0.000228									
Copper	324.754														
Iron	259.940														
Iron	271.441										0.109000				
Lead	220.353		-0.000060										0.000046	0.000036	
Lithium	670.784								0.000010						
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090								-0.000009					0.000004	
Silicon	288.158											0.000027			
Silver	328.068														
Sodium	589.592														
Sodium	818.326														
Strontium	407.771								0.000010						
Sulfur	182.034														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG No.: A1D060449

ICP-AES Instrument ID: MT_026 Date: 01/21/2011

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	K
Thallium	190.856										0.001988	0.000241			
Thorium	283.730		-0.000012							-0.00071		-0.000233		0.000920	
Tin	189.989														
Titanium	334.904											0.000169			
Uranium	370.152				0.001355							-0.002090		0.000661	
Vanadium	292.402											-0.007969			
Zinc	206.200											-0.001730			
Zirconium	339.198													-0.000026	

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG No.: A1D060449

ICP-AES Instrument ID: MT_026 Date: 01/21/2011

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	SiO2	Sn
Aluminum	309.271		0.003939												
Aluminum	167.079														
Antimony	206.833				-0.007803										
Arsenic	189.042				-0.000564										
Barium	455.403														
Beryllium	313.042														
Bismuth	223.061														
Boron	208.959				0.053817										
Cadmium	228.802														
Calcium	317.933														
Chromium	205.552				0.000100		0.000046								
Cobalt	228.616				-0.001154		0.000049								
Copper	324.754														
Iron	259.940														
Iron	271.441														
Lead	220.353		0.000001		-0.001630		0.000200					0.000013	0.000074		
Lithium	670.784		0.000008												
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090			0.000468											
Silicon	288.158				-0.005890										0.001650
Silver	328.068				-.0003080										
Sodium	818.326														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034			0.005840	0.000664										

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG No.: A1D060449

ICP-AES Instrument ID: MT_026 Date: 01/21/2011

Analyte	Wave Length	Li	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Si	SiO2	Sn
Thallium	190.856			0.000720	-0.000286										
Thorium	283.730		-0.000026		0.000415		0.000139								
Tin	189.989														
Titanium	334.904		0.000009		0.000999										
Uranium	370.152				0.001220										
Vanadium	292.402			-0.005746											
Zinc	206.200														
Zirconium	339.198				0.000494								0.000018		

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG No.: A1D060449

ICP-AES Instrument ID: MT_026 Date: 01/21/2011

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	W	Zn						
Aluminum	167.079														
Aluminum	309.271														
Antimony	206.833					-0.001080									
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042			-0.000233											
Bismuth	223.061		-0.004222	-0.004040		-0.000669									
Boron	208.959														
Cadmium	228.802														
Calcium	317.933		-0.013090												
Chromium	205.552					0.000035									
Cobalt	228.616			0.001858											
Copper	324.754		0.002944	-0.001777											
Iron	259.940														
Iron	271.441						-0.456000								
Lead	220.353			-0.000765		0.000568									
Lithium	670.784														
Magnesium	279.079		-0.028160			-0.006850									
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Phosphorus	178.284														
Potassium	766.490														
Selenium	196.090					-0.001609									
Silicon	288.158														
Silver	328.068		-0.000491			0.001560									
Sodium	589.592														
Sodium	818.326														
Strontium	407.771														
Sulfur	182.034														

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14463-1

SDG No.: A1D060449

ICP-AES Instrument ID: MT_026 Date: 01/21/2011

Analyte	Wave Length	Sr	Th	Ti	Tl	U	V	W	Zn						
Thallium	190.856			-0.000928		-0.000656	-0.002258								
Thorium	283.730					0.024550									
Tin	189.989			-0.000896											
Titanium	334.904		0.008581			-0.000660									
Uranium	370.152		-0.004100	0.006150											
Vanadium	292.402		0.001332	0.000957		-0.000553									
Zinc	206.200														
Zirconium	339.198		0.076500												

11-IN
ICP-AES AND ICP-MS LINEAR RANGES
METALS

Lab Name: TestAmerica Denver Job No: 280-14463-1

SDG No.: A1D060449

Instrument ID: MT_026 Date: 02/18/2011 13:57

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Boron		100	6010B
Lithium		25	6010B
Molybdenum		20	6010B
SiO2, Silica		428	6010B

11-IN
ICP-AES AND ICP-MS LINEAR RANGES
METALS

Lab Name: TestAmerica Denver Job No: 280-14463-1

SDG No.: A1D060449

Instrument ID: MT_024 Date: 04/12/2011 16:49

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Uranium		4000	6020

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Preparation Method: 3010A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-61780/1-A	04/13/2011 08:00	61780		50	50
LCS 280-61780/2-A	04/13/2011 08:00	61780		50	50
280-14463-1	04/13/2011 08:00	61780		50	50
280-14463-1 DU	04/13/2011 08:00	61780		50	50
280-14463-1 MS	04/13/2011 08:00	61780		50	50
280-14463-2	04/13/2011 08:00	61780		50	50
280-14463-3	04/13/2011 08:00	61780		50	50
280-14463-4	04/13/2011 08:00	61780		50	50
280-14463-5	04/13/2011 08:00	61780		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Preparation Method: 3020A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-61784/1-A	04/13/2011 08:00	61784		50	50
LCS 280-61784/2-A	04/13/2011 08:00	61784		50	50
280-14463-1	04/13/2011 08:00	61784		50	50
280-14463-1 DU	04/13/2011 08:00	61784		50	50
280-14463-1 MS	04/13/2011 08:00	61784		50	50
280-14463-2	04/13/2011 08:00	61784		50	50
280-14463-3	04/13/2011 08:00	61784		50	50
280-14463-4	04/13/2011 08:00	61784		50	50
280-14463-5	04/13/2011 08:00	61784		50	50

North Canton

62295 – 6020 Water
62297 – 200.8
62300 – Soil

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Denver

ICP/MS Technical Data Review Checklist

Lab Project ID Number(s): see attached cover sheet Check Method/SOP Used: ☐6020/DV-MT-0018 ☐200.8/DV-MT-0002

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments & Samples Affected
Tune					
1. Tune solution analyzed min. of 4 times for 6020 or 5 times for 200.8?	✓			✓	
2. Tune RSD <5%?	✓			✓	
2. Resolution ≤ 0.9 AMU full width at 10% peak height? **NOTE**: This also satisfies 200.8, 1.0 AMU at 5% peak height	✓			✓	
Initial Calibration					
1. Done with a minimum of 3 integrations of a high standard and blank?	✓			✓	
2. ICV/CCV run at beginning of run, 10% frequency, and end of run? Results with 10% of expected value?	✓			✓	
3. ICB/CCB run at beginning of run, 10% frequency, and end of run? Results +/- RL	✓			✓	
4. ICSA/AB analyzed at beginning of run and every 12 hours and results 80-120% of TV?	✓			✓	
5. RL Std analyzed at beginning of run and results +/- 50% of TV(for AFCEE 4.0, DoD V3 +/- 20% of true value)?	✓			✓	
Client Samples & QC Sample Results					
1. Were all samples within linear range, ≤ 90% of LDR for 200.8?	✓			✓	
2. Dilutions due to target elements? ____ Dilutions for other reasons? ✓	✓			✓	
3. All reported results bracketed by in control QC?	✓			✓	
4. All 6020 internal standards for all analyses 30-120% of intensities in blank or all 200.8 internal standards 60-125%?	✓			✓	
5. Was a 5X serial dilution analyzed for 6020 and, if so, are results ± 10% of original result, if original ≥ 100x MDL?	✓			✓	
6. LCS included in batch and within QC limits?	✓			✓	
7. Method blank included and <1/2RL?	✓			✓	
8. MS and MSD included in batch?	✓			✓	
9. PDS analyzed and recovery 75-125%?	✓			✓	
10. Manual calculations documented properly and checked?	✓			✓	
11. Are non-conformances documented on an NCM?	✓			✓	
12. Is the appropriate raw data included?	✓			✓	
13. Are all results manually entered into LIMS verified? Are all electronic data files archived to the appropriate network locations?	✓			✓	
14. Were special client requirements met?	✓			✓	

1st Level Reviewer: _____ Date: 4/15/11

2nd Level Reviewer: _____ Date: 4/18/11

L:\QA\Edit\FORMS\Data Review\ICPMS

Rev. 2, 6/12/08

METALS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Batch Number: 61780 Batch Start Date: 04/13/11 08:00 Batch Analyst: Niman, Katie M

Batch Method: 3010A Batch End Date: 04/13/11 13:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ICP SPK 2A 00024	ICP SPK 3A 00026	
MB 280-61780/1		3010A, 6010B			50 mL	50 mL			
LCS 280-61780/2		3010A, 6010B			50 mL	50 mL	0.5 mL	0.5 mL	
280-14463-A-1	FWGSCFMW-004-0180-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14463-A-1 DU	FWGSCFMW-004-0180-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14463-A-1 MS	FWGSCFMW-004-0180-GF	3010A, 6010B	T	<2	50 mL	50 mL	0.5 mL	0.5 mL	
280-14463-A-2	FWGSCFMW-005-0190-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14463-A-3	FWGLL1MW-081C-0010-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14463-A-4	FWGLL1MW-082C-0020-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14463-A-5	FWGLL1MW-084C-0030-GF	3010A, 6010B	T	<2	50 mL	50 mL			

Batch Notes	
Lot # of hydrochloric acid	J46037
Lot # of Nitric Acid	K09041
Hot Block ID number	05
Oven, Bath or Block Temperature 1	95 Degrees C
Oven, Bath or Block Temperature 2	95 Degrees C
Pipette ID	MET-007
Person who witnessed spiking	KMN
ID number of the thermometer	0908002329
Digestion Tube/Cup Lot #	1010191
Uncorrected Temperature	95 Degrees C
Uncorrected Temperature 2	95 Degrees C

Basis	Basis Description
T	Total/NA

METALS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-14463-1

SDG No.: A1D060449

Batch Number: 61784 Batch Start Date: 04/13/11 08:00 Batch Analyst: Niman, Katie M

Batch Method: 3020A Batch End Date: 04/13/11 13:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MS CALSTD-1 00037	MS CALSTD-2 00036	
MB 280-61784/1		3020A, 6020			50 mL	50 mL			
LCS 280-61784/2		3020A, 6020			50 mL	50 mL	0.1 mL	0.1 mL	
280-14463-A-1	FWGSCFMW-004-0180-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14463-A-1 DU	FWGSCFMW-004-0180-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14463-A-1 MS	FWGSCFMW-004-0180-GF	3020A, 6020	T	<2	50 mL	50 mL	0.1 mL	0.1 mL	
280-14463-A-2	FWGSCFMW-005-0190-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14463-A-3	FWGLL1MW-081C-0010-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14463-A-4	FWGLL1MW-082C-0020-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14463-A-5	FWGLL1MW-084C-0030-GF	3020A, 6020	T	<2	50 mL	50 mL			

Batch Notes	
Lot # of Nitric Acid	K09041
Hot Block ID number	09
Oven, Bath or Block Temperature 1	92 Degrees C
Oven, Bath or Block Temperature 2	95 Degrees C
Pipette ID	MET-015
ID number of the thermometer	3967
Digestion Tube/Cup Lot #	1010191

Basis	Basis Description
T	Total/NA

Shipping and Receiving Documents

Login Sample Receipt Checklist

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14463-1
SDG Number: A1D060449

Login Number: 14463
List Number: 1
Creator: Bindel, Aaron M

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

North Canton

26°; 3.1°

TestAmerica Laboratories, Inc.

SAMPLE ANALYSIS REQUISTION

Laboratory: **TestAmerica Denver**
4955 Yarrow Street
Arvada, CO 80002

Lab Request: SR126370

Report Package: **Expanded Deliverables**

Need Analytical Report: 2011-04-20

Client Code: 1434673

Project Manager: MARK LOEB

Sample I.D.	Work Order Number	Client Sample ID	Sampling Date	Analysis Required
A1D060449-2	MGLQM	FWGSCFMW-004-0180-GF	2011-04-05 10:02	WATER, 6020, Uranium by ICP/MS (Denver)
A1D060449-2	MGLQM	FWGSCFMW-004-0180-GF	2011-04-05 10:02	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D060449-4	MGLQR	FWGSCFMW-005-0190-GF	2011-04-05 15:08	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D060449-4	MGLQR	FWGSCFMW-005-0190-GF	2011-04-05 15:08	WATER, 6020, Uranium by ICP/MS (Denver)
A1D060449-6	MGLQV	FWGLL1MW-081C-0010-GF	2011-04-05 11:23	WATER, 6020, Uranium by ICP/MS (Denver)
A1D060449-6	MGLQV	FWGLL1MW-081C-0010-GF	2011-04-05 11:23	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D060449-8	MGLQX	FWGLL1MW-082C-0020-GF	2011-04-05 9:23	WATER, 6020, Uranium by ICP/MS (Denver)
A1D060449-8	MGLQX	FWGLL1MW-082C-0020-GF	2011-04-05 9:23	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D060449-10	MGLQ1	FWGLL1MW-084C-0030-GF	2011-04-05 13:25	WATER, 6020, Uranium by ICP/MS (Denver)
A1D060449-10	MGLQ1	FWGLL1MW-084C-0030-GF	2011-04-05 13:25	WATER, 6010B, Metals B Li Mo Si (Denver)

1 x 2

Page 581 of 581

Please use Client Sample ID for report

Call MARK LOEB with questions at 330-497-9396

at the TAL North Canton Laboratory

Shipping Method: FED-EX

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: _____ Date/Time: 4/7/11 3:00pm

Relinquished by: _____ Date/Time: _____

Received for lab by: _____ Date/Time: 4/8/11 1000

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

04/21/2011621

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

END OF REPORT

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. GR11NJ00D5WRV00

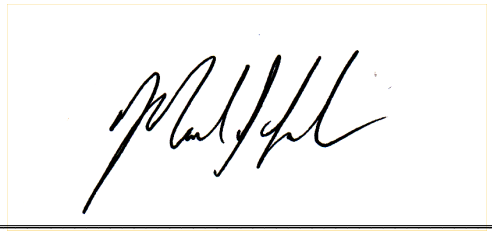
RAVENNA, OH

Lot #: A1D070566

Gary L. Cottrell

U.S. Geological Survey (USGS)
Building 95, MS-407
Denver, CO 80225

TESTAMERICA LABORATORIES, INC.



Approved for release.
Mark J. Loeb
Project Manager II
6/23/2011 2:22 PM

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June 23, 2011

TestAmerica Laboratories, Inc.
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ACCREDITED IN ACCORDANCE WITH nelac

Laboratory Job No: 410070566

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION

Data reviewer: Gary Cottrell Review date: 6/28/11

Office, Project, & Account #: OF, Ravenna

2.0 DATA DELIVERABLES

Date of Lab analytical report: 6/27/11 Number of copies: bound 0 unbound 0

No. of CD copies of raw-data report: 2 Remarks:

Raw-data report reviewed? Yes ✓ No ____ Electronic data files on CD? Yes ✓ No ____

EDD file format: QWDATA ____ TAL QUA08 ✓ ERPIMS ____ Other ____

Date rec'd data deliverables: 6/27/11 Date sent deliverables to USGS office 6/27/11

3.0 INVOICE STATUS FOR LOT: OK

4.0 SAMPLE INFORMATION *(Page #'s listed in this worksheet refer to lab analytical report)*

Sample collection date(s): 4/6/11 Sample matrix: water

No. of sample types in lot: Environmental 7 Trip blank ____ Equip. blank ____

MS/MSD ____ Other: ____

Date samples received at laboratory: 4/7/11

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes ____ No ✓

If yes, list TAT period and if completed:

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES ✓ NO ____

If **no**, list missing or cancelled analyses and reason for non-performance:

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes ✓ No ____

If **no**, list sample/lab IDs, and associated problems or reference lab report case narrative:

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes ✓ No ____

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

4.5 Did surrogate recoveries meet QC acceptance criteria? Yes ✓ No _____ NA_____

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s:_____

NOTE: Surrogate Low - R90 - LCS; Low R97 - MS

4.6 Were dilution factors greater than 1 for ***organic*** analyses? Yes____ No ✓ NA_____

If **yes**, list analytical methods and reason for raised dilution factors: dilution _____

high-analyte levels _____matrix interferences _____other _____

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes ____ No____ NA ✓

If **yes**, list analytical methods and reason for raised dilution factors:

high-analyte levels _____matrix interferences _____other _____

4.8 Additional comments about sample analyses: _____

Laboratory Job No: A1070560

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Were any target analytes detected in the **Laboratory Method Blanks**? Yes ✓ No ____

If **yes**, list method, analytes, prep batch #, report page #s:

bis(2-Ethylhexyl) phthalate = 4.0, ~~MDL~~ RL = 10; P57

NOTE: High Surrogate Recovery For This Blank

Zn = 5.9, RL = 10; P116; ~~Moly~~

5.2 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes ___ No ✓

If **no**, list method, analytes, LCS/LSCD, prep batch #, report page #s:

3-SVOC - P62+65

NOTE: Surrogate out - P104

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes ____ No ✓ NA ____

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

If **no**, list method, analytes; MS, MSD or RPD; and lab report page #:

Multiple SVOC - P68+69 - Most Low - Benzo(b)fluoranthene High

Multiple SVOC - P78 (Low) - Benzo(b)fluoranthene (High) - P79

~~At~~ Ortho P - P163 (Double Spiked one?) - P167

2+3 - P168 - Low - P170; Moly - High - P189

NOTE: Surrogate out - P108

5.4 Did the **lab-sample duplicate** results meet RPD acceptance criteria? Yes ✓ No ___ NA ___

If **no**, list method, analytes, prep batch #, report page #s,

5.5 Additional comments about QC results:

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

___✓___ VOCs by GC/MS--method 8260B/ 524.2 *[water (W) or solids (S) analysis holding-time (HT) of 14 days]*

_____ Gasoline Range Organics (GRO)+BTEX-method 8015B(GRO)/ 8021 *[W and S: analysis HT 14 days]*

_____ Diesel Range Organics-method 8015B-DRO *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

___✓___ Pesticides by GC--method 8081A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*

___✓___ PCBs by GC--method 8082 *[W: prep HT 7 days; S: prep HT14 days, analysis HT 40 days]*

_____ Pesticides by GC--method 8141A *[W: prep HT 7 days; S: prep HT 14 days, analysis HT 40 days]*

_____ Herbicides by GC--method 8151A *[W: prep HT 7 days; S: prep HT14 days, analysis HT 40 days]*

___✓___ SVOCs by GC/MS--method 8270C *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Dioxins and Furans--methods 8280/ 8290/ 1613 *[W and S: prep HT 30 days; analysis HT 45 days]*

_____ PAHs by HPLC method 8310 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

___✓___ Explosives by HPLC method 8330 or 8321A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*

_____ Hexane extractable materials (HEM and SGT-HEM)-method 1664/ 9071B *[W/S: analysis HT 28 days]*

_____ Total organic carbon (TOC) or DOC--methods 415.1 or 9060 or 5310B *[W: analysis HT 28 days]*

_____ Perchlorate--methods 314.0 or 6850 LC/MS/MS or 6860 IC/MS/MS *[W: analysis HT 28 days]*

___✓___ Metals by ICP--method 6010B or 200.7 *[W and S: analysis HT 180 days]*

___✓___ Metals by ICP/MS--method 6020 or 200.8 *[W and S: analysis HT 180 days]*

___✓___ Mercury by CVAA--method 7470A (W) and 7471A (S) *[W and S: analysis HT 28 days]*

___✓___ Inorganic anions-method 300/ 9056 *[W: analysis HT **48 hours**- NO_2, NO_3, ortho-P; HT 28 days--Br,Cl ,F, SO_4]*

_____ Total dissolved solids (TDS)--method 2540C and(or) TSS--method 2540D *[W: analysis HT 7 days]*

_____ Alkalinity--method 310.1 (Total, OH, HCO_3, and CO_3) *[W: analysis HT 14 days]*

___✓___ Nitrogen, ammonia--method ~~350.1~~ 350.2 *[W analysis HT 28 days]*

_____ Nitrogen, TKN--method 351.2 *[W: analysis HT 28 days]*

___✓___ Nitrogen, nitrate + nitrite--method 353.2 *[W: analysis HT 28 days]* NO_3 or NO_2 only *[HT **48 hours**]*

___✓___ Nitrogen, nitrite--method 353.2 or 354.1 *[W: analysis HT **48 hours**]*

_____ Phosphorus-method 365.3 and ortho P by 365.3 *[Phosphorus.: W: analysis HT 28 days, ortho P **48 hours**]*

_____ Phosphorus-method 365.1 and ortho P by 365.1 *[Phosphorus: W: analysis HT 28 days, ortho P **48 hours**]*

___✓___ Cyanide, total, dissolved, or amenable--methods 9012A/ 335.4 *[W and S: analysis HT 14 days]*

_____ MBAS surfactants – method 425.1 ***(HT 48 hours)***

_____ Moisture content--methods D2216 or 160.3M

_____ BOD--method 405.1 *(HT 48 hours)* or COD--method 410.4

_____ Turbidity--method 180.1 ***(HT 48 hours)*** ; Hardness 2340B

_____ Physical properties: pH--method 4500 H B; specific conductance—method 2510B

___✓___ Other analyses: Nitrocellulose

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A1D070566

The following report contains the analytical results for seven water samples submitted to TestAmerica North Canton by U.S. Geological Survey (USGS) from the RAVENNA, OH Site, project number GR11NJ00D5W2100. The samples were received April 07, 2011, according to documented sample acceptance procedures.

The 6010B Metals (B Li Mo Si) and 6020 Uranium by ICP/MS analyses were performed at the TestAmerica Denver laboratory.

The 8330 Explosives and Nitroguanidine analyses were performed at the TestAmerica West Sacramento laboratory. Refer to TestAmerica West Sacramento narrative included in their data package for additional information.

TestAmerica utilizes USEPA approved methods and Louisville Corps Guidelines version 5, where applicable, in all analytical reports. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

CASE NARRATIVE (continued)

If you have any questions, please call the Project Manager, Mark J. Loeb, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 0.8 and 1.3°C.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for batch(es) 1105156 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The LCS associated with batch(es) 1105156 was recovered high and outside of criteria for methylene chloride and carbon disulfide. Since the analyte was not detected in any of the samples above reporting limits, the results were accepted. Slight positive bias is not believed to have impacted data quality.

GC/MS SEMIVOLATILES

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "B". All target analytes in the Method Blank must be below the reporting limit (RL) or the associated sample(s) must be ND with the exception of common laboratory contaminants.

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

CASE NARRATIVE (continued)

GC/MS SEMIVOLATILES (continued)

The matrix spike/matrix spike duplicate(s) for batch(es) 1098032 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

3-Methylphenol (m-Cresol) and 4-Methylphenol (p-Cresol) co-elute and cannot be reported as separate analytes. When these analytes are requested, the reported result represents a probable combination of the two analytes.

The method blank associated with batch(es) 1098032 was double surrogated.

The LCS associated with batch(es) 1098032 had a Benzoic Acid recovery of 29.37%

PESTICIDES-8081

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

For the LCS associated with batch(es) 1099014, the recovery for one surrogate compound is outside acceptance criteria. Since LCG criterion is that one of two surrogate compounds must meet acceptance criteria, no corrective action was required. (Surrogate was below acceptance limit, but above 10%.)

POLYCHLORINATED BIPHENYLS-8082

The analytical results met the requirements of the laboratory's QA/QC program.

NITROAROMATICS AND NITRAMINES-8330

The analytical results met the requirements of the laboratory's QA/QC program.

CASE NARRATIVE (continued)

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

No ICP Trace or ICP MS Form IX was provided for batch(es) 1098019. The serial dilutions were performed on a different sample from the same QC batch(es).

The sample duplicate RPD was outside the acceptance limits for some analytes. The result is less than five times the reporting limit; therefore, no corrective action is required. Refer to the sample duplicate report for RPDS that exceed 20%.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The matrix spike/matrix spike duplicate(s) for FWGRQLMW-007C-0120-GW, FWGRQLMW-016C-0160-GW, and FWGB12MW-010C-0220-FB had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called Quality Control Batches (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, a Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair or a Matrix Spike/Sample Duplicate (MS/DU) pair.
For 600 series/CWA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, where appropriate, a Matrix Spike (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch, with the exception of poor performing analytes. A list of these analytes is listed below. No corrective action is taken if these analytes do not meet criteria.Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

Poor performers

Method 8270 Water and Solid:	
4-Nitrophenol	3,3' – Dichlorobenzidine
Benzoic Acid	2,4,6 - Tribromophenol
Phenol 2	,4-Dinitrophenol
Phenol-d5 P	entachlorophenol
4,6-Dinitro-2-methylphenol	Hexachlorocyclopentadiene (LCG only)
Benzyl Alcohol	4-Chloroaniline
Method 8151 Solid	
Dinoseb	
Method 8260 Water and Solid	
Dichlorodifluoromethane H	exachlorobutadiene
Trichlorofluoromethane Na	phthalene
Chloroethane 1	,2,3-Trichlorobenzene
Acetone 1	,2,4-Trichlorobenzene
Bromomethane 2	,2-Dichloropropane
Bromoform C	hloromethane

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be ten fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results do not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate or Matrix Spike/Sample Duplicate.

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), DoD ELAP (ADE-1437) USDA Soil Permit (P33-08-00123)

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A1D070566

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FWGRQLMW-007C-0120-GW 04/06/11 15:19	**001**			
Chloride	1.4	1.0	mg/L	MCAWW 300.0A
Sulfate	101	1.0	mg/L	MCAWW 300.0A
Fluoride	0.14 B	1.0	mg/L	MCAWW 300.0A
Nitrate as N	0.040 B	0.10	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	0.79	0.50	mg/L	MCAWW 300.0A
FWGRQLMW-008C-0130-GW 04/06/11 13:09	**003**			
Nitrogen, as Ammonia	0.84 B	2.0	mg/L	MCAWW 350.2
Chloride	1.3	1.0	mg/L	MCAWW 300.0A
Sulfate	62.6	1.0	mg/L	MCAWW 300.0A
Fluoride	0.30 B	1.0	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	0.17 B	0.50	mg/L	MCAWW 300.0A
FWGRQLMW-009C-0140-GW 04/06/11 15:31	**005**			
Chloride	1.1	1.0	mg/L	MCAWW 300.0A
Sulfate	13.4	1.0	mg/L	MCAWW 300.0A
Fluoride	0.11 B	1.0	mg/L	MCAWW 300.0A
Nitrate as N	0.071 B	0.10	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	1.3	0.50	mg/L	MCAWW 300.0A
FWGRQLMW-014C-0150-GW 04/06/11 09:16	**007**			
Chloride	5.0	1.0	mg/L	MCAWW 300.0A
Sulfate	50.0	1.0	mg/L	MCAWW 300.0A
Fluoride	0.11 B	1.0	mg/L	MCAWW 300.0A
FWGRQLMW-016C-0160-GW 04/06/11 11:03	**009**			
Chloride	6.7	1.0	mg/L	MCAWW 300.0A
Sulfate	1120	10.0	mg/L	MCAWW 300.0A
Fluoride	0.37 B	1.0	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	0.19 B	0.50	mg/L	MCAWW 300.0A

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

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PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FWGB12MW-010C-0220-FB 04/06/11 14:05	**011**			
beta-BHC	0.017 J	0.030	ug/L	SW846 8081A
Zinc	4.3 B,J	10.0	ug/L	SW846 6020
bis(2-Ethylhexyl) phthalate	2.2 J,B	10	ug/L	SW846 8270C
FWGSCFMW-003C-0170-GW 04/06/11 09:22	**013**			
Chloride	1.4	1.0	mg/L	MCAWW 300.0A
Sulfate	25.2	1.0	mg/L	MCAWW 300.0A
Fluoride	0.12 B	1.0	mg/L	MCAWW 300.0A

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METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A1D070566

PARAMETER	ANALYTICAL METHOD
Ammonia Nitrogen	MCAWW 350.2
Bromide	MCAWW 300.0A
Chloride	MCAWW 300.0A
Cyanide, Total	SW846 9012A
Fluoride	MCAWW 300.0A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
ICP-MS (6020)	SW846 6020
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Nitrate as N	MCAWW 300.0A
Nitrate-Nitrite	MCAWW 353.2
Nitrite as N	MCAWW 300.0A
Nitroaromatics and Nitramines by HPLC	SW846 8330
Nitrocellulose as N, WS-WC-0050 (Colorimetric)	TAL-SOP WS-WC-0050
Organics by UV/HPLC	SW846 8330 (Modified)
Organochlorine Pesticides	SW846 8081A
Phosphate as P, Ortho	MCAWW 300.0A
PCBs by SW-846 8082	SW846 8082
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Sulfate	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TAL-SOP TESTAMERICA LABORATORIES INC., LABORATORY STANDARD OPERATING PROCEDURE

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SAMPLE SUMMARY

SAMPLE SUMMARY

A1D070566

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MGPAF	001	FWGRQLMW-007C-0120-GW	04/06/11	15:19
MGPAR	003	FWGRQLMW-008C-0130-GW	04/06/11	13:09
MGPA1	005	FWGRQLMW-009C-0140-GW	04/06/11	15:31
MGPA4	007	FWGRQLMW-014C-0150-GW	04/06/11	09:16
MGPA7	009	FWGRQLMW-016C-0160-GW	04/06/11	11:03
MGPCC	011	FWGB12MW-010C-0220-FB	04/06/11	14:05
MGPCP	013	FWGSCFMW-003C-0170-GW	04/06/11	09:22

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.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SHIPPING AND RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: Canton
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: U.S. Geological Survey	Client Project Manager: Ralph Haefner	Site Contact: Brian Mailot	Lab Contact: Ken Kuzior	COC No: 019554
Address: 6480 Doubletree Ave.	Telephone: 614-430-7709	Telephone: 614-430-7747	Telephone: 330-966-9374	2 of 2 COCs
City/State/Zip: Columbus, OH 43229	Email: rhaefner@usgs.gov	Analysis Turnaround Time (in BUS days) TAT if different from below Contract ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		For lab use only: Walk-in client ☐ Lab pickup ☐ Lab sampling ☐ Job/SDG No:
Phone: 614-430-7700				
Project Name: Ravenna OH	Method of Shipment/Carrier: lab pickup			
Project Number: GR11NJ00D5W2100	Shipping/Tracking No:			
PO#				

Analyses: Metals 6010/6020; Anions/nutrient-300.0A; Ammonia 350.1

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C/Grab=G	Metals 6010/6020	Anions/nutrient-300.0A	Ammonia 350.1	Sample Specific Notes / Special Instructions: cooler #
FWGRQLmw-007C-012U-GW	4/6/11	15:19		X				1					1		N	G		X	X	L814
FWGRQLmw-007C-012U-GF	4/6/11	15:19		X					1						Y	G	X			L814
FWGRQLmw-008C-013U-GW	4/6/11	13:09		X				1					1		N	G		X	X	L814
FWGRQLmw-008C-013U-GF	4/6/11	13:09		X					1						Y	G	X			L814
FWGRQLmw-009C-014U-GW	4/6/11	15:31		X				1					1		N	G		X	X	L814
FWGRQLmw-009C-014U-GF	4/6/11	15:31		X					1						Y	G	X			L814
FWGRQLmw-014C-015U-GW	4/6/11	09:16		X				1					1		N	G		X	X	L814
FWGRQLmw-014C-015U-GF	4/6/11	09:16		X					1						Y	G	X			L814
FWGRQLmw-016C-016U-GW	4/6/11	11:03		X				1					1		N	G		X	X	L814
FWGRQLmw-016C-016U-GF	4/6/11	11:03		X					1						Y	G	X			L814

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Metals -6010 (B, Li, Mo, Si) 6020 (U) filtered
Anions/nutrients -300.0A (Br, Cl, F, SO4), nitrite, orthophosphate
Nitrogen, ammonia - 350.1

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian E Mailot	USGS	4/6/11 1830	RC Robin	TAL-NC	4/6/11 1830
RC Robin	TAL-NC	4/6/11 - 1944			
			Received in Laboratory by: JL Kuzior	TA NC	4/7/11 0700

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TAL 0018-1 (04/10)

North Canton

Chain of Custody Record

TestAmerica Laboratory location: Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: U.S. Geological Survey	Client Project Manager: Ralph Haefner	Site Contact: Brian Mailot	Lab Contact: Ken Kuzior	COC No: 019553
Address: 6480 Doubletree Ave.	Telephone: 614-430-7709	Telephone: 614-430-7747	Telephone: 330-966-9374	1 of 2 COCs
City/State/Zip: Columbus, OH 43229	Email: rhaefner@usgs.gov	Analysis Turnaround Time (In BUS days)		For lab use only
Phone: 614-430-7700		TAT if different from below Contract		Walk-in client: ☐ Lab pickup: ☐ Lab sampling: ☐
Project Name: Ravenna OH	Method of Shipment/Carrier: lab pickup	☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Job/SDG No:
Project Number: GRLLNJ500D5W2100	Shipping/Tracking No:			
PO#				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite/Grab	Analyses: VOC - 8260	SVOC - 8270	PCB - 8082	Explosives - 8330	8330 mod. Propellants WS-WC-0050	Metals - 6010/6020/7470	Cyanide - 9012	Anions - 300.0A	Nutrients - 353.2	Ammonia - 350.1	Sample Specific Notes / Special Instructions: Cooler #
FWGB12mw-010C-022U-FB	4/6/11	14:05		X						3			9		N	G	X	X	X	X	X						A708
FWGB12mw-010C-022U-FB	4/6/11	14:05		X				2	2		1		1		N	G						X	X	X	X	X	L814
FWGSCFmw-003-017U-GF	4/6/11	09:22		X					1						Y	G						X					L814
FWGSCFmw-003-017U-GW	4/6/11	09:22		X				1					1		N	G								X		X	L814

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:
FWGSCFmw-003-017U-GF metals 6010(B,Li,Mo,Si) 6020(U) filtered - no 7470 analysis

Relinquished by:	Company: USGS	Date/Time: 4/6/11 1830	Received by:	Company: TAL-NC	Date/Time: 4/6/11 1838
Relinquished by:	Company: TAL-NC	Date/Time: 4/6/11 1944	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TAL NC	Date/Time: 4/7/11 0700

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TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: ATD070566

Client US Geological Survey Project Ravenna Oh. By: _____ (Signature)
Cooler Received on 4-7-11 Opened on 4-7-11
FedEx ☐ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☑ Other _____
TestAmerica Cooler # _____ Multiple Coolers ☑ Foam Box ☐ Client Cooler ☐ Other _____

1. Were custody seals on the outside of the cooler(s)? Yes ☑ No ☐ Intact? Yes ☑ No ☐ NA ☐
   If YES, Quantity 2 Quantity Unsalvageable _____
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☑ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☑
   If YES, are there any exceptions? _____
2. Shippers' packing slip attached to the cooler(s)? Yes ☐ No ☑
3. Did custody papers accompany the sample(s)? Yes ☑ No ☐ Relinquished by client? Yes ☑ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☑ No ☐
5. Packing material used: Bubble Wrap ☑ Foam ☐ None ☐ Other _____
6. Cooler temperature upon receipt _____ °C See back of form for multiple coolers/temps ☑
   METHOD: IR ☑ Other ☐ _____
   COOLANT: Wet Ice ☑ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☑ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☑ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☑ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☑ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☑ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☑ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☑ Were VOAs on the COC? Yes ☑ No ☐

Contacted PM _____ Date _____ by _____ via Verbal ☐ Voice Mail ☐ Other ☐
Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 100110-HNO_3; *Sulfuric Acid Lot#* 110410-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
1519 GW	<2	4-7-11	JS
F	<2		
1309 W	<2		
F	<2		
1531 W	<2		
F	<2		
916 W	<2		
F	<2		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials
1103 GW	≤2		
F	≤2		
1405 FB	≤2 ≤2 ≤2 ≤2 ≤2 ≤2		
922 GF	≤2		
W	≤2		

Cooler #	Temp. °C	Method	Coolant
L708	1.3	IR	ICE
L814	0.8	1	1

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

GC/MS Volatiles

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1AA **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11
Prep Date.....: 04/15/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1105156
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromochloromethane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
m-Xylene & p-Xylene	ND	2.0	ug/L
Chloromethane	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Methylene chloride	ND	2.0	ug/L
Acetone	ND	10	ug/L
Carbon disulfide	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
2-Butanone	ND	10	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Benzene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	10	ug/L
2-Hexanone	ND	10	ug/L
Tetrachloroethene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L

(Continued on next page)

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

GC/MS Volatiles

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1AA **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Styrene	ND	1.0	ug/L
Xylenes (total)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	88	(50 - 150)
1,2-Dichloroethane-d4	86	(50 - 150)
Toluene-d8	78	(50 - 150)
4-Bromofluorobenzene	77	(50 - 150)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MG3AC1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D150000-156

Prep Date.....: 04/15/11 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/15/11 **Prep Batch #...:** 1105156
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	2.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Methylene chloride	**1.0 J**	**2.0**	**ug/L**	**SW846 8260B**
Acetone	ND	10	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	10	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B
2-Hexanone	ND	10	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	2.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MG3AC1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(50 - 150)
1,2-Dichloroethane-d4	82	(50 - 150)
Toluene-d8	79	(50 - 150)
4-Bromofluorobenzene	81	(50 - 150)

NOTE(S):

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

J Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MG3AC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D150000-156
Prep Date.....: 04/15/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1105156
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
m-Xylene & p-Xylene	103	(75 - 122)	SW846 8260B
o-Xylene	105	(75 - 118)	SW846 8260B
cis-1,2-Dichloroethene	102	(73 - 133)	SW846 8260B
trans-1,2-Dichloroethene	107	(75 - 134)	SW846 8260B
1,2-Dibromoethane	105	(75 - 127)	SW846 8260B
Bromochloromethane	103	(75 - 127)	SW846 8260B
Chloromethane	99	(58 - 135)	SW846 8260B
Bromomethane	102	(35 - 153)	SW846 8260B
Vinyl chloride	95	(73 - 134)	SW846 8260B
Chloroethane	107	(72 - 129)	SW846 8260B
Methylene chloride	130 a	(69 - 118)	SW846 8260B
Acetone	99	(51 - 157)	SW846 8260B
Carbon disulfide	130 a	(74 - 123)	SW846 8260B
1,1-Dichloroethene	116	(75 - 125)	SW846 8260B
1,1-Dichloroethane	105	(75 - 133)	SW846 8260B
1,2-Dichloroethene (total)	105	(85 - 111)	SW846 8260B
Chloroform	104	(74 - 127)	SW846 8260B
1,2-Dichloroethane	106	(67 - 132)	SW846 8260B
2-Butanone	108	(45 - 150)	SW846 8260B
1,1,1-Trichloroethane	104	(70 - 127)	SW846 8260B
Carbon tetrachloride	106	(71 - 132)	SW846 8260B
Bromodichloromethane	108	(70 - 130)	SW846 8260B
1,2-Dichloropropane	106	(75 - 127)	SW846 8260B
cis-1,3-Dichloropropene	105	(73 - 132)	SW846 8260B
Trichloroethene	100	(67 - 128)	SW846 8260B
Dibromochloromethane	106	(74 - 145)	SW846 8260B
1,1,2-Trichloroethane	106	(75 - 136)	SW846 8260B
Benzene	104	(75 - 126)	SW846 8260B
trans-1,3-Dichloropropene	116	(74 - 131)	SW846 8260B
Bromoform	108	(72 - 136)	SW846 8260B
4-Methyl-2-pentanone	116	(59 - 150)	SW846 8260B
2-Hexanone	115	(53 - 139)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MG3AC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D150000-156

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Tetrachloroethene	94	(75 - 129)	SW846 8260B
1,1,2,2-Tetrachloroethane	100	(68 - 129)	SW846 8260B
Toluene	102	(75 - 125)	SW846 8260B
Chlorobenzene	99	(75 - 127)	SW846 8260B
Ethylbenzene	102	(75 - 120)	SW846 8260B
Styrene	111	(75 - 130)	SW846 8260B
Xylenes (total)	104	(90 - 114)	SW846 8260B
n-Hexane	85	(69 - 129)	SW846 8260B
1,2-Dibromo-3-chloro-propane	71 a	(75 - 132)	SW846 8260B
1,2-Dichlorobenzene	98	(73 - 120)	SW846 8260B
1,3-Dichlorobenzene	95	(75 - 122)	SW846 8260B
1,4-Dichlorobenzene	95	(74 - 123)	SW846 8260B
Dichlorodifluoromethane	53 a	(59 - 134)	SW846 8260B
Freon 113	105	(50 - 150)	SW846 8260B
Isopropylbenzene	100	(75 - 126)	SW846 8260B
Methyl acetate	107	(60 - 140)	SW846 8260B
Methylcyclohexane	88	(60 - 140)	SW846 8260B
Methyl tert-butyl ether (MTBE)	104	(59 - 129)	SW846 8260B
1,2,4-Trichloro-benzene	57 a	(75 - 130)	SW846 8260B
Trichlorofluoromethane	130	(68 - 133)	SW846 8260B
Acrolein	127	(50 - 150)	SW846 8260B
Acrylonitrile	110	(50 - 150)	SW846 8260B
n-Butylbenzene	90	(75 - 126)	SW846 8260B
sec-Butylbenzene	87	(75 - 125)	SW846 8260B
tert-Butylbenzene	85	(75 - 125)	SW846 8260B
2-Chlorotoluene	89	(75 - 121)	SW846 8260B
4-Chlorotoluene	92	(73 - 127)	SW846 8260B
Dibromomethane	109	(76 - 132)	SW846 8260B
1,3-Dichloropropane	105	(75 - 133)	SW846 8260B
2,2-Dichloropropane	103	(62 - 134)	SW846 8260B
1,1-Dichloropropene	101	(75 - 135)	SW846 8260B
Hexachlorobutadiene	54 a	(75 - 133)	SW846 8260B
Iodomethane	137	(50 - 150)	SW846 8260B
p-Isopropyltoluene	92	(75 - 125)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MG3AC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D150000-156

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Naphthalene	**53 a**	**(65 - 149)**	**SW846 8260B**
n-Propylbenzene	**91**	**(75 - 127)**	**SW846 8260B**
1,1,1,2-Tetrachloroethane	**106**	**(75 - 127)**	**SW846 8260B**
1,2,3-Trichlorobenzene	**50 a**	**(75 - 133)**	**SW846 8260B**
1,2,3-Trichloropropane	**96**	**(65 - 139)**	**SW846 8260B**
1,1,2-Trichloro-1,2,2-trifluoroethane	**105**	**(50 - 150)**	**SW846 8260B**
1,2,4-Trimethylbenzene	**95**	**(75 - 123)**	**SW846 8260B**
1,3,5-Trimethylbenzene	**90**	**(75 - 121)**	**SW846 8260B**
Vinyl acetate	**135**	**(30 - 150)**	**SW846 8260B**
Bromobenzene	**89**	**(74 - 123)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	81	(50 - 150)
1,2-Dichloroethane-d4	81	(50 - 150)
Toluene-d8	82	(50 - 150)
4-Bromofluorobenzene	98	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MG3AC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D150000-156
Prep Date.....: 04/15/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1105156
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
m-Xylene & p-Xylene	20	21	ug/L	103	SW846 8260B
o-Xylene	10	11	ug/L	105	SW846 8260B
cis-1,2-Dichloroethene	10	10	ug/L	102	SW846 8260B
trans-1,2-Dichloroethene	10	11	ug/L	107	SW846 8260B
1,2-Dibromoethane	10	10	ug/L	105	SW846 8260B
Bromochloromethane	10	10	ug/L	103	SW846 8260B
Chloromethane	10	9.9	ug/L	99	SW846 8260B
Bromomethane	10	10	ug/L	102	SW846 8260B
Vinyl chloride	10	9.5	ug/L	95	SW846 8260B
Chloroethane	10	11	ug/L	107	SW846 8260B
Methylene chloride	10	13 a	ug/L	130	SW846 8260B
Acetone	20	20	ug/L	99	SW846 8260B
Carbon disulfide	10	13 a	ug/L	130	SW846 8260B
1,1-Dichloroethene	10	12	ug/L	116	SW846 8260B
1,1-Dichloroethane	10	10	ug/L	105	SW846 8260B
1,2-Dichloroethene (total)	20	21	ug/L	105	SW846 8260B
Chloroform	10	10	ug/L	104	SW846 8260B
1,2-Dichloroethane	10	11	ug/L	106	SW846 8260B
2-Butanone	20	22	ug/L	108	SW846 8260B
1,1,1-Trichloroethane	10	10	ug/L	104	SW846 8260B
Carbon tetrachloride	10	11	ug/L	106	SW846 8260B
Bromodichloromethane	10	11	ug/L	108	SW846 8260B
1,2-Dichloropropane	10	11	ug/L	106	SW846 8260B
cis-1,3-Dichloropropene	10	11	ug/L	105	SW846 8260B
Trichloroethene	10	10	ug/L	100	SW846 8260B
Dibromochloromethane	10	11	ug/L	106	SW846 8260B
1,1,2-Trichloroethane	10	11	ug/L	106	SW846 8260B
Benzene	10	10	ug/L	104	SW846 8260B
trans-1,3-Dichloropropene	10	12	ug/L	116	SW846 8260B
Bromoform	10	11	ug/L	108	SW846 8260B
4-Methyl-2-pentanone	20	23	ug/L	116	SW846 8260B
2-Hexanone	20	23	ug/L	115	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MG3AC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D150000-156

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Tetrachloroethene	10	9.4	ug/L	94	SW846 8260B
1,1,2,2-Tetrachloroethane	10	10	ug/L	100	SW846 8260B
Toluene	10	10	ug/L	102	SW846 8260B
Chlorobenzene	10	9.9	ug/L	99	SW846 8260B
Ethylbenzene	10	10	ug/L	102	SW846 8260B
Styrene	10	11	ug/L	111	SW846 8260B
Xylenes (total)	30	31	ug/L	104	SW846 8260B
n-Hexane	10	8.5	ug/L	85	SW846 8260B
1,2-Dibromo-3-chloro-propane	10	7.1 a	ug/L	71	SW846 8260B
1,2-Dichlorobenzene	10	9.8	ug/L	98	SW846 8260B
1,3-Dichlorobenzene	10	9.5	ug/L	95	SW846 8260B
1,4-Dichlorobenzene	10	9.5	ug/L	95	SW846 8260B
Dichlorodifluoromethane	10	5.3 a	ug/L	53	SW846 8260B
Freon 113	10	11	ug/L	105	SW846 8260B
Isopropylbenzene	10	10	ug/L	100	SW846 8260B
Methyl acetate	10	11	ug/L	107	SW846 8260B
Methylcyclohexane	10	8.8	ug/L	88	SW846 8260B
Methyl tert-butyl ether (MTBE)	10	10	ug/L	104	SW846 8260B
1,2,4-Trichloro-benzene	10	5.7 a	ug/L	57	SW846 8260B
Trichlorofluoromethane	10	13	ug/L	130	SW846 8260B
Acrolein	30	38	ug/L	127	SW846 8260B
Acrylonitrile	30	33	ug/L	110	SW846 8260B
n-Butylbenzene	10	9.0	ug/L	90	SW846 8260B
sec-Butylbenzene	10	8.7	ug/L	87	SW846 8260B
tert-Butylbenzene	10	8.5	ug/L	85	SW846 8260B
2-Chlorotoluene	10	8.9	ug/L	89	SW846 8260B
4-Chlorotoluene	10	9.2	ug/L	92	SW846 8260B
Dibromomethane	10	11	ug/L	109	SW846 8260B
1,3-Dichloropropane	10	10	ug/L	105	SW846 8260B
2,2-Dichloropropane	10	10	ug/L	103	SW846 8260B
1,1-Dichloropropene	10	10	ug/L	101	SW846 8260B
Hexachlorobutadiene	10	5.4 a	ug/L	54	SW846 8260B
Iodomethane	10	14	ug/L	137	SW846 8260B
p-Isopropyltoluene	10	9.2	ug/L	92	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MG3AC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D150000-156

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Naphthalene	**10**	**5.3 a**	**ug/L**	**53**	**SW846 8260B**
n-Propylbenzene	**10**	**9.1**	**ug/L**	**91**	**SW846 8260B**
1,1,1,2-Tetrachloroethane	**10**	**11**	**ug/L**	**106**	**SW846 8260B**
1,2,3-Trichlorobenzene	**10**	**5.0 a**	**ug/L**	**50**	**SW846 8260B**
1,2,3-Trichloropropane	**10**	**9.6**	**ug/L**	**96**	**SW846 8260B**
1,1,2-Trichloro-1,2,2-trifluoroethane	**10**	**11**	**ug/L**	**105**	**SW846 8260B**
1,2,4-Trimethylbenzene	**10**	**9.5**	**ug/L**	**95**	**SW846 8260B**
1,3,5-Trimethylbenzene	**10**	**9.0**	**ug/L**	**90**	**SW846 8260B**
Vinyl acetate	**10**	**13**	**ug/L**	**135**	**SW846 8260B**
Bromobenzene	**10**	**8.9**	**ug/L**	**89**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	81	(50 - 150)
1,2-Dichloroethane-d4	81	(50 - 150)
Toluene-d8	82	(50 - 150)
4-Bromofluorobenzene	98	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/15/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1105156
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,2-Dichloroethene	**101**	**(70 - 130)**			**SW846 8260B**
	101	**(70 - 130)**	**0.04**	**(0-30)**	**SW846 8260B**
trans-1,2-Dichloroethene	**106**	**(70 - 130)**			**SW846 8260B**
	105	**(70 - 130)**	**0.99**	**(0-30)**	**SW846 8260B**
1,2-Dibromoethane	**103**	**(70 - 130)**			**SW846 8260B**
	99	**(70 - 130)**	**3.5**	**(0-30)**	**SW846 8260B**
Bromochloromethane	**103**	**(70 - 130)**			**SW846 8260B**
	108	**(70 - 130)**	**3.8**	**(0-30)**	**SW846 8260B**
m-Xylene & p-Xylene	**99**	**(70 - 130)**			**SW846 8260B**
	91	**(70 - 130)**	**7.9**	**(0-30)**	**SW846 8260B**
o-Xylene	**101**	**(70 - 130)**			**SW846 8260B**
	95	**(70 - 130)**	**6.3**	**(0-30)**	**SW846 8260B**
Chloromethane	**82**	**(70 - 130)**			**SW846 8260B**
	91	**(70 - 130)**	**11**	**(0-30)**	**SW846 8260B**
Bromomethane	**76**	**(70 - 130)**			**SW846 8260B**
	69 a	**(70 - 130)**	**9.2**	**(0-30)**	**SW846 8260B**
Vinyl chloride	**100**	**(70 - 130)**			**SW846 8260B**
	101	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**
Chloroethane	**109**	**(70 - 130)**			**SW846 8260B**
	104	**(70 - 130)**	**4.4**	**(0-30)**	**SW846 8260B**
Methylene chloride	**121**	**(70 - 130)**			**SW846 8260B**
	119	**(70 - 130)**	**1.5**	**(0-30)**	**SW846 8260B**
Acetone	**103**	**(70 - 130)**			**SW846 8260B**
	107	**(70 - 130)**	**3.5**	**(0-30)**	**SW846 8260B**
Carbon disulfide	**151 a**	**(70 - 130)**			**SW846 8260B**
	142 a	**(70 - 130)**	**5.8**	**(0-30)**	**SW846 8260B**
1,1-Dichloroethene	**123**	**(70 - 130)**			**SW846 8260B**
	119	**(70 - 130)**	**3.0**	**(0-30)**	**SW846 8260B**
1,1-Dichloroethane	**103**	**(70 - 130)**			**SW846 8260B**
	103	**(70 - 130)**	**0.08**	**(0-30)**	**SW846 8260B**
1,2-Dichloroethene (total)	**103**	**(70 - 130)**			**SW846 8260B**
	103	**(70 - 130)**	**0.48**	**(0-30)**	**SW846 8260B**
Chloroform	**102**	**(70 - 130)**			**SW846 8260B**
	100	**(70 - 130)**	**2.1**	**(0-30)**	**SW846 8260B**
1,2-Dichloroethane	**106**	**(70 - 130)**			**SW846 8260B**
	104	**(70 - 130)**	**1.8**	**(0-30)**	**SW846 8260B**
2-Butanone	**111**	**(70 - 130)**			**SW846 8260B**
	115	**(70 - 130)**	**3.1**	**(0-30)**	**SW846 8260B**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1,1-Trichloroethane	104	(70 - 130)			SW846 8260B
	101	(70 - 130)	2.3	(0-30)	SW846 8260B
Carbon tetrachloride	105	(70 - 130)			SW846 8260B
	100	(70 - 130)	5.0	(0-30)	SW846 8260B
Bromodichloromethane	108	(70 - 130)			SW846 8260B
	105	(70 - 130)	3.2	(0-30)	SW846 8260B
1,2-Dichloropropane	102	(70 - 130)			SW846 8260B
	103	(70 - 130)	0.81	(0-30)	SW846 8260B
cis-1,3-Dichloropropene	96	(70 - 130)			SW846 8260B
	98	(70 - 130)	2.8	(0-30)	SW846 8260B
Trichloroethene	99	(70 - 130)			SW846 8260B
	97	(70 - 130)	1.5	(0-30)	SW846 8260B
Dibromochloromethane	104	(70 - 130)			SW846 8260B
	101	(70 - 130)	3.0	(0-30)	SW846 8260B
1,1,2-Trichloroethane	102	(70 - 130)			SW846 8260B
	98	(70 - 130)	4.0	(0-30)	SW846 8260B
Benzene	104	(70 - 130)			SW846 8260B
	102	(70 - 130)	2.0	(0-30)	SW846 8260B
trans-1,3-Dichloropropene	106	(70 - 130)			SW846 8260B
	103	(70 - 130)	2.4	(0-30)	SW846 8260B
Bromoform	102	(70 - 130)			SW846 8260B
	99	(70 - 130)	2.4	(0-30)	SW846 8260B
4-Methyl-2-pentanone	115	(70 - 130)			SW846 8260B
	116	(70 - 130)	1.1	(0-30)	SW846 8260B
2-Hexanone	113	(70 - 130)			SW846 8260B
	114	(70 - 130)	0.93	(0-30)	SW846 8260B
Tetrachloroethene	91	(70 - 130)			SW846 8260B
	82	(70 - 130)	10	(0-30)	SW846 8260B
1,1,2,2-Tetrachloroethane	96	(70 - 130)			SW846 8260B
	95	(70 - 130)	1.2	(0-30)	SW846 8260B
Toluene	98	(70 - 130)			SW846 8260B
	93	(70 - 130)	4.3	(0-30)	SW846 8260B
Chlorobenzene	94	(70 - 130)			SW846 8260B
	91	(70 - 130)	3.6	(0-30)	SW846 8260B
Ethylbenzene	98	(70 - 130)			SW846 8260B
	91	(70 - 130)	7.0	(0-30)	SW846 8260B
Styrene	105	(70 - 130)			SW846 8260B
	100	(70 - 130)	4.6	(0-30)	SW846 8260B
Xylenes (total)	99	(70 - 130)			SW846 8260B
	92	(70 - 130)	7.4	(0-30)	SW846 8260B
n-Hexane	70	(70 - 130)			SW846 8260B
	72	(70 - 130)	3.2	(0-30)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Cyclohexane	**92**	**(70 - 130)**			**SW846 8260B**
	86	**(70 - 130)**	**6.8**	**(0-30)**	**SW846 8260B**
1,2-Dibromo-3-chloro- propane	**76**	**(70 - 130)**			**SW846 8260B**
	75	**(70 - 130)**	**0.88**	**(0-30)**	**SW846 8260B**
1,2-Dichlorobenzene	**93**	**(70 - 130)**			**SW846 8260B**
	92	**(70 - 130)**	**1.7**	**(0-30)**	**SW846 8260B**
1,3-Dichlorobenzene	**89**	**(70 - 130)**			**SW846 8260B**
	87	**(70 - 130)**	**2.9**	**(0-30)**	**SW846 8260B**
1,4-Dichlorobenzene	**90**	**(70 - 130)**			**SW846 8260B**
	88	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**
Dichlorodifluoromethane	**49 a**	**(70 - 130)**			**SW846 8260B**
	49 a	**(70 - 130)**	**0.20**	**(0-30)**	**SW846 8260B**
Freon 113	**98**	**(70 - 130)**			**SW846 8260B**
	96	**(70 - 130)**	**2.0**	**(0-30)**	**SW846 8260B**
Isopropylbenzene	**93**	**(70 - 130)**			**SW846 8260B**
	87	**(70 - 130)**	**6.2**	**(0-30)**	**SW846 8260B**
Methyl acetate	**97**	**(70 - 130)**			**SW846 8260B**
	98	**(70 - 130)**	**0.83**	**(0-30)**	**SW846 8260B**
Methylcyclohexane	**78**	**(70 - 130)**			**SW846 8260B**
	75	**(70 - 130)**	**4.1**	**(0-30)**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**100**	**(70 - 130)**			**SW846 8260B**
	102	**(70 - 130)**	**2.5**	**(0-30)**	**SW846 8260B**
1,2,4-Trichloro- benzene	**54 a**	**(70 - 130)**			**SW846 8260B**
	54 a	**(70 - 130)**	**0.40**	**(0-30)**	**SW846 8260B**
Trichlorofluoromethane	**124**	**(70 - 130)**			**SW846 8260B**
	115	**(70 - 130)**	**7.8**	**(0-30)**	**SW846 8260B**
Acrolein	**122**	**(70 - 130)**			**SW846 8260B**
	125	**(70 - 130)**	**3.0**	**(0-30)**	**SW846 8260B**
Acrylonitrile	**112**	**(70 - 130)**			**SW846 8260B**
	112	**(70 - 130)**	**0.09**	**(0-30)**	**SW846 8260B**
Bromobenzene	**85**	**(70 - 130)**			**SW846 8260B**
	82	**(70 - 130)**	**3.2**	**(0-30)**	**SW846 8260B**
n-Butylbenzene	**78**	**(70 - 130)**			**SW846 8260B**
	76	**(70 - 130)**	**2.6**	**(0-30)**	**SW846 8260B**
sec-Butylbenzene	**80**	**(70 - 130)**			**SW846 8260B**
	75	**(70 - 130)**	**6.7**	**(0-30)**	**SW846 8260B**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
tert-Butylbenzene	79	(70 - 130)			SW846 8260B
	75	(70 - 130)	5.8	(0-30)	SW846 8260B
2-Chlorotoluene	85	(70 - 130)			SW846 8260B
	82	(70 - 130)	4.1	(0-30)	SW846 8260B
4-Chlorotoluene	87	(70 - 130)			SW846 8260B
	85	(70 - 130)	2.5	(0-30)	SW846 8260B
Dibromomethane	110	(70 - 130)			SW846 8260B
	112	(70 - 130)	1.4	(0-30)	SW846 8260B
trans-1,4-Dichloro-2-butene	188 a	(70 - 130)			SW846 8260B
	164 a	(70 - 130)	14	(0-30)	SW846 8260B
1,3-Dichloropropane	101	(70 - 130)			SW846 8260B
	97	(70 - 130)	4.5	(0-30)	SW846 8260B
2,2-Dichloropropane	96	(70 - 130)			SW846 8260B
	95	(70 - 130)	1.3	(0-30)	SW846 8260B
1,1-Dichloropropene	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.39	(0-30)	SW846 8260B
Ethyl methacrylate	0.0 a	(70 - 130)			SW846 8260B
	0.0 a	(70 - 130)	0.0	(0-30)	SW846 8260B
Hexachlorobutadiene	49 a	(70 - 130)			SW846 8260B
	47 a	(70 - 130)	4.6	(0-30)	SW846 8260B
Iodomethane	143 a	(70 - 130)			SW846 8260B
	139 a	(70 - 130)	2.4	(0-30)	SW846 8260B
p-Isopropyltoluene	85	(70 - 130)			SW846 8260B
	82	(70 - 130)	3.9	(0-30)	SW846 8260B
Naphthalene	49 a	(70 - 130)			SW846 8260B
	56 a	(70 - 130)	13	(0-30)	SW846 8260B
n-Propylbenzene	84	(70 - 130)			SW846 8260B
	81	(70 - 130)	4.5	(0-30)	SW846 8260B
1,1,1,2-Tetrachloroethane	102	(70 - 130)			SW846 8260B
	99	(70 - 130)	3.1	(0-30)	SW846 8260B
1,2,3-Trichlorobenzene	50 a	(70 - 130)			SW846 8260B
	53 a	(70 - 130)	5.9	(0-30)	SW846 8260B
1,2,3-Trichloropropane	98	(70 - 130)			SW846 8260B
	92	(70 - 130)	6.3	(0-30)	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	98	(70 - 130)			SW846 8260B
	96	(70 - 130)	2.0	(0-30)	SW846 8260B
1,2,4-Trimethylbenzene	90	(70 - 130)			SW846 8260B
	86	(70 - 130)	5.3	(0-30)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3,5-Trimethylbenzene	**86**	**(70 - 130)**			**SW846 8260B**
	80	**(70 - 130)**	**6.7**	**(0-30)**	**SW846 8260B**
Vinyl acetate	**118**	**(70 - 130)**			**SW846 8260B**
	106	**(70 - 130)**	**10**	**(0-30)**	**SW846 8260B**
tert-Butyl alcohol	**104**	**(70 - 130)**			**SW846 8260B**
	112	**(70 - 130)**	**6.8**	**(0-30)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(50 - 150)
	84	(50 - 150)
1,2-Dichloroethane-d4	86	(50 - 150)
	81	(50 - 150)
Toluene-d8	80	(50 - 150)
	81	(50 - 150)
4-Bromofluorobenzene	98	(50 - 150)
	95	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/15/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1105156
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
cis-1,2-Dichloroethene	**ND**	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**101**	**0.04**	**SW846 8260B**
trans-1,2-Dichloroethene	**ND**	**10**	**11**	**ug/L**	**106**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**105**	**0.99**	**SW846 8260B**
1,2-Dibromoethane	**ND**	**10**	**10**	**ug/L**	**103**		**SW846 8260B**
	ND	**10**	**9.9**	**ug/L**	**99**	**3.5**	**SW846 8260B**
Bromochloromethane	**ND**	**10**	**10**	**ug/L**	**103**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**108**	**3.8**	**SW846 8260B**
m-Xylene & p-Xylene	**ND**	**20**	**20**	**ug/L**	**99**		**SW846 8260B**
	ND	**20**	**18**	**ug/L**	**91**	**7.9**	**SW846 8260B**
o-Xylene	**ND**	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	ND	**10**	**9.5**	**ug/L**	**95**	**6.3**	**SW846 8260B**
Chloromethane	**ND**	**10**	**8.2**	**ug/L**	**82**		**SW846 8260B**
	ND	**10**	**9.1**	**ug/L**	**91**	**11**	**SW846 8260B**
Bromomethane	**ND**	**10**	**7.6**	**ug/L**	**76**		**SW846 8260B**
	ND	**10**	**6.9**	**ug/L**	**69 a**	**9.2**	**SW846 8260B**
Vinyl chloride	**ND**	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**101**	**1.4**	**SW846 8260B**
Chloroethane	**ND**	**10**	**11**	**ug/L**	**109**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**104**	**4.4**	**SW846 8260B**
Methylene chloride	**ND**	**10**	**12**	**ug/L**	**121**		**SW846 8260B**
	ND	**10**	**12**	**ug/L**	**119**	**1.5**	**SW846 8260B**
Acetone	**ND**	**20**	**21**	**ug/L**	**103**		**SW846 8260B**
	ND	**20**	**21**	**ug/L**	**107**	**3.5**	**SW846 8260B**
Carbon disulfide	**ND**	**10**	**15**	**ug/L**	**151 a**		**SW846 8260B**
	ND	**10**	**14**	**ug/L**	**142 a**	**5.8**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10**	**12**	**ug/L**	**123**		**SW846 8260B**
	ND	**10**	**12**	**ug/L**	**119**	**3.0**	**SW846 8260B**
1,1-Dichloroethane	**ND**	**10**	**10**	**ug/L**	**103**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**103**	**0.08**	**SW846 8260B**
1,2-Dichloroethene (total)	**ND**	**20**	**21**	**ug/L**	**103**		**SW846 8260B**
	ND	**20**	**21**	**ug/L**	**103**	**0.48**	**SW846 8260B**
Chloroform	**ND**	**10**	**10**	**ug/L**	**102**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**100**	**2.1**	**SW846 8260B**
1,2-Dichloroethane	**ND**	**10**	**11**	**ug/L**	**106**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**104**	**1.8**	**SW846 8260B**
2-Butanone	**ND**	**20**	**22**	**ug/L**	**111**		**SW846 8260B**
	ND	**20**	**23**	**ug/L**	**115**	**3.1**	**SW846 8260B**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1,1-Trichloroethane	ND	10	10	ug/L	104		SW846 8260B
	ND	10	10	ug/L	101	2.3	SW846 8260B
Carbon tetrachloride	ND	10	10	ug/L	105		SW846 8260B
	ND	10	10	ug/L	100	5.0	SW846 8260B
Bromodichloromethane	ND	10	11	ug/L	108		SW846 8260B
	ND	10	10	ug/L	105	3.2	SW846 8260B
1,2-Dichloropropane	ND	10	10	ug/L	102		SW846 8260B
	ND	10	10	ug/L	103	0.81	SW846 8260B
cis-1,3-Dichloropropene	ND	10	9.6	ug/L	96		SW846 8260B
	ND	10	9.8	ug/L	98	2.8	SW846 8260B
Trichloroethene	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	9.7	ug/L	97	1.5	SW846 8260B
Dibromochloromethane	ND	10	10	ug/L	104		SW846 8260B
	ND	10	10	ug/L	101	3.0	SW846 8260B
1,1,2-Trichloroethane	ND	10	10	ug/L	102		SW846 8260B
	ND	10	9.8	ug/L	98	4.0	SW846 8260B
Benzene	ND	10	10	ug/L	104		SW846 8260B
	ND	10	10	ug/L	102	2.0	SW846 8260B
trans-1,3-Dichloropropene	ND	10	11	ug/L	106		SW846 8260B
	ND	10	10	ug/L	103	2.4	SW846 8260B
Bromoform	ND	10	10	ug/L	102		SW846 8260B
	ND	10	9.9	ug/L	99	2.4	SW846 8260B
4-Methyl-2-pentanone	ND	20	23	ug/L	115		SW846 8260B
	ND	20	23	ug/L	116	1.1	SW846 8260B
2-Hexanone	ND	20	23	ug/L	113		SW846 8260B
	ND	20	23	ug/L	114	0.93	SW846 8260B
Tetrachloroethene	ND	10	9.1	ug/L	91		SW846 8260B
	ND	10	8.2	ug/L	82	10	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	10	9.6	ug/L	96		SW846 8260B
	ND	10	9.5	ug/L	95	1.2	SW846 8260B
Toluene	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.3	ug/L	93	4.3	SW846 8260B
Chlorobenzene	ND	10	9.4	ug/L	94		SW846 8260B
	ND	10	9.1	ug/L	91	3.6	SW846 8260B
Ethylbenzene	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.1	ug/L	91	7.0	SW846 8260B
Styrene	ND	10	10	ug/L	105		SW846 8260B
	ND	10	10	ug/L	100	4.6	SW846 8260B
Xylenes (total)	ND	30	30	ug/L	99		SW846 8260B
	ND	30	28	ug/L	92	7.4	SW846 8260B
n-Hexane	ND	10	7.0	ug/L	70		SW846 8260B
	ND	10	7.2	ug/L	72	3.2	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Cyclohexane	**ND**	**10**	**9.2**	**ug/L**	**92**		**SW846 8260B**
	ND	**10**	**8.6**	**ug/L**	**86**	**6.8**	**SW846 8260B**
1,2-Dibromo-3-chloro- propane	**ND**	**10**	**7.6**	**ug/L**	**76**		**SW846 8260B**
	ND	**10**	**7.5**	**ug/L**	**75**	**0.88**	**SW846 8260B**
1,2-Dichlorobenzene	**ND**	**10**	**9.3**	**ug/L**	**93**		**SW846 8260B**
	ND	**10**	**9.2**	**ug/L**	**92**	**1.7**	**SW846 8260B**
1,3-Dichlorobenzene	**ND**	**10**	**8.9**	**ug/L**	**89**		**SW846 8260B**
	ND	**10**	**8.7**	**ug/L**	**87**	**2.9**	**SW846 8260B**
1,4-Dichlorobenzene	**ND**	**10**	**9.0**	**ug/L**	**90**		**SW846 8260B**
	ND	**10**	**8.8**	**ug/L**	**88**	**1.4**	**SW846 8260B**
Dichlorodifluoromethane	**ND**	**10**	**4.9**	**ug/L**	**49 a**		**SW846 8260B**
	ND	**10**	**4.9**	**ug/L**	**49 a**	**0.20**	**SW846 8260B**
Freon 113	**ND**	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**9.6**	**ug/L**	**96**	**2.0**	**SW846 8260B**
Isopropylbenzene	**ND**	**10**	**9.3**	**ug/L**	**93**		**SW846 8260B**
	ND	**10**	**8.7**	**ug/L**	**87**	**6.2**	**SW846 8260B**
Methyl acetate	**ND**	**10**	**9.7**	**ug/L**	**97**		**SW846 8260B**
	ND	**10**	**9.8**	**ug/L**	**98**	**0.83**	**SW846 8260B**
Methylcyclohexane	**ND**	**10**	**7.8**	**ug/L**	**78**		**SW846 8260B**
	ND	**10**	**7.5**	**ug/L**	**75**	**4.1**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**ND**	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**102**	**2.5**	**SW846 8260B**
1,2,4-Trichloro- benzene	**ND**	**10**	**5.4**	**ug/L**	**54 a**		**SW846 8260B**
	ND	**10**	**5.4**	**ug/L**	**54 a**	**0.40**	**SW846 8260B**
Trichlorofluoromethane	**ND**	**10**	**12**	**ug/L**	**124**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**115**	**7.8**	**SW846 8260B**
Acrolein	**ND**	**30**	**36**	**ug/L**	**122**		**SW846 8260B**
	ND	**30**	**38**	**ug/L**	**125**	**3.0**	**SW846 8260B**
Acrylonitrile	**ND**	**30**	**34**	**ug/L**	**112**		**SW846 8260B**
	ND	**30**	**34**	**ug/L**	**112**	**0.09**	**SW846 8260B**
Bromobenzene	**ND**	**10**	**8.5**	**ug/L**	**85**		**SW846 8260B**
	ND	**10**	**8.2**	**ug/L**	**82**	**3.2**	**SW846 8260B**
n-Butylbenzene	**ND**	**10**	**7.8**	**ug/L**	**78**		**SW846 8260B**
	ND	**10**	**7.6**	**ug/L**	**76**	**2.6**	**SW846 8260B**
sec-Butylbenzene	**ND**	**10**	**8.0**	**ug/L**	**80**		**SW846 8260B**
	ND	**10**	**7.5**	**ug/L**	**75**	**6.7**	**SW846 8260B**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
tert-Butylbenzene	**ND**	**10**	**7.9**	**ug/L**	**79**		**SW846 8260B**
	ND	**10**	**7.5**	**ug/L**	**75**	**5.8**	**SW846 8260B**
2-Chlorotoluene	**ND**	**10**	**8.5**	**ug/L**	**85**		**SW846 8260B**
	ND	**10**	**8.2**	**ug/L**	**82**	**4.1**	**SW846 8260B**
4-Chlorotoluene	**ND**	**10**	**8.7**	**ug/L**	**87**		**SW846 8260B**
	ND	**10**	**8.5**	**ug/L**	**85**	**2.5**	**SW846 8260B**
Dibromomethane	**ND**	**10**	**11**	**ug/L**	**110**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**112**	**1.4**	**SW846 8260B**
trans-1,4-Dichloro-2-butene	**ND**	**10**	**19**	**ug/L**	**188 a**		**SW846 8260B**
	ND	**10**	**16**	**ug/L**	**164 a**	**14**	**SW846 8260B**
1,3-Dichloropropane	**ND**	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	ND	**10**	**9.7**	**ug/L**	**97**	**4.5**	**SW846 8260B**
2,2-Dichloropropane	**ND**	**10**	**9.6**	**ug/L**	**96**		**SW846 8260B**
	ND	**10**	**9.5**	**ug/L**	**95**	**1.3**	**SW846 8260B**
1,1-Dichloropropene	**ND**	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**100**	**0.39**	**SW846 8260B**
Ethyl methacrylate	**ND**	**10**	**0.0**	**ug/L**	**0.0 a**		**SW846 8260B**
	ND	**10**	**0.0**	**ug/L**	**0.0 a**	**0.0**	**SW846 8260B**
Hexachlorobutadiene	**ND**	**10**	**4.9**	**ug/L**	**49 a**		**SW846 8260B**
	ND	**10**	**4.7**	**ug/L**	**47 a**	**4.6**	**SW846 8260B**
Iodomethane	**ND**	**10**	**14**	**ug/L**	**143 a**		**SW846 8260B**
	ND	**10**	**14**	**ug/L**	**139 a**	**2.4**	**SW846 8260B**
p-Isopropyltoluene	**ND**	**10**	**8.5**	**ug/L**	**85**		**SW846 8260B**
	ND	**10**	**8.2**	**ug/L**	**82**	**3.9**	**SW846 8260B**
Naphthalene	**ND**	**10**	**4.9**	**ug/L**	**49 a**		**SW846 8260B**
	ND	**10**	**5.6**	**ug/L**	**56 a**	**13**	**SW846 8260B**
n-Propylbenzene	**ND**	**10**	**8.4**	**ug/L**	**84**		**SW846 8260B**
	ND	**10**	**8.1**	**ug/L**	**81**	**4.5**	**SW846 8260B**
1,1,1,2-Tetrachloroethane	**ND**	**10**	**10**	**ug/L**	**102**		**SW846 8260B**
	ND	**10**	**9.9**	**ug/L**	**99**	**3.1**	**SW846 8260B**
1,2,3-Trichlorobenzene	**ND**	**10**	**5.0**	**ug/L**	**50 a**		**SW846 8260B**
	ND	**10**	**5.3**	**ug/L**	**53 a**	**5.9**	**SW846 8260B**
1,2,3-Trichloropropane	**ND**	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**9.2**	**ug/L**	**92**	**6.3**	**SW846 8260B**
1,1,2-Trichloro-1,2,2-trifluoroethane	**ND**	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**9.6**	**ug/L**	**96**	**2.0**	**SW846 8260B**
1,2,4-Trimethylbenzene	**ND**	**10**	**9.0**	**ug/L**	**90**		**SW846 8260B**
	ND	**10**	**8.6**	**ug/L**	**86**	**5.3**	**SW846 8260B**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,3,5-Trimethylbenzene	**ND**	**10**	**8.6**	**ug/L**	**86**		**SW846 8260B**
	ND	**10**	**8.0**	**ug/L**	**80**	**6.7**	**SW846 8260B**
Vinyl acetate	**ND**	**10**	**12**	**ug/L**	**118**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**106**	**10**	**SW846 8260B**
tert-Butyl alcohol	**ND**	**200**	**210**	**ug/L**	**104**		**SW846 8260B**
	ND	**200**	**220**	**ug/L**	**112**	**6.8**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	86	(50 - 150)
	84	(50 - 150)
1,2-Dichloroethane-d4	86	(50 - 150)
	81	(50 - 150)
Toluene-d8	80	(50 - 150)
	81	(50 - 150)
4-Bromofluorobenzene	98	(50 - 150)
	95	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/15/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1105156
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,2-Dichloroethene	**96**	**(70 - 130)**			**SW846 8260B**
	101	**(70 - 130)**	**4.4**	**(0-30)**	**SW846 8260B**
trans-1,2-Dichloroethene	**103**	**(70 - 130)**			**SW846 8260B**
	103	**(70 - 130)**	**0.33**	**(0-30)**	**SW846 8260B**
1,2-Dibromoethane	**102**	**(70 - 130)**			**SW846 8260B**
	103	**(70 - 130)**	**0.89**	**(0-30)**	**SW846 8260B**
Bromochloromethane	**101**	**(70 - 130)**			**SW846 8260B**
	107	**(70 - 130)**	**6.2**	**(0-30)**	**SW846 8260B**
m-Xylene & p-Xylene	**92**	**(70 - 130)**			**SW846 8260B**
	93	**(70 - 130)**	**0.66**	**(0-30)**	**SW846 8260B**
o-Xylene	**97**	**(70 - 130)**			**SW846 8260B**
	96	**(70 - 130)**	**0.63**	**(0-30)**	**SW846 8260B**
Chloromethane	**88**	**(70 - 130)**			**SW846 8260B**
	90	**(70 - 130)**	**2.2**	**(0-30)**	**SW846 8260B**
Bromomethane	**88**	**(70 - 130)**			**SW846 8260B**
	89	**(70 - 130)**	**1.9**	**(0-30)**	**SW846 8260B**
Vinyl chloride	**95**	**(70 - 130)**			**SW846 8260B**
	99	**(70 - 130)**	**4.0**	**(0-30)**	**SW846 8260B**
Chloroethane	**104**	**(70 - 130)**			**SW846 8260B**
	107	**(70 - 130)**	**2.4**	**(0-30)**	**SW846 8260B**
Methylene chloride	**119**	**(70 - 130)**			**SW846 8260B**
	120	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**
Acetone	**102**	**(70 - 130)**			**SW846 8260B**
	108	**(70 - 130)**	**5.9**	**(0-30)**	**SW846 8260B**
Carbon disulfide	**135 a**	**(70 - 130)**			**SW846 8260B**
	136 a	**(70 - 130)**	**0.97**	**(0-30)**	**SW846 8260B**
1,1-Dichloroethene	**115**	**(70 - 130)**			**SW846 8260B**
	116	**(70 - 130)**	**1.7**	**(0-30)**	**SW846 8260B**
1,1-Dichloroethane	**99**	**(70 - 130)**			**SW846 8260B**
	101	**(70 - 130)**	**1.6**	**(0-30)**	**SW846 8260B**
1,2-Dichloroethene (total)	**100**	**(70 - 130)**			**SW846 8260B**
	102	**(70 - 130)**	**2.0**	**(0-30)**	**SW846 8260B**
Chloroform	**101**	**(70 - 130)**			**SW846 8260B**
	101	**(70 - 130)**	**0.75**	**(0-30)**	**SW846 8260B**
1,2-Dichloroethane	**103**	**(70 - 130)**			**SW846 8260B**
	104	**(70 - 130)**	**1.0**	**(0-30)**	**SW846 8260B**
2-Butanone	**109**	**(70 - 130)**			**SW846 8260B**
	113	**(70 - 130)**	**3.8**	**(0-30)**	**SW846 8260B**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1,1-Trichloroethane	100	(70 - 130)			SW846 8260B
	102	(70 - 130)	2.2	(0-30)	SW846 8260B
Carbon tetrachloride	103	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.9	(0-30)	SW846 8260B
Bromodichloromethane	106	(70 - 130)			SW846 8260B
	105	(70 - 130)	0.48	(0-30)	SW846 8260B
1,2-Dichloropropane	104	(70 - 130)			SW846 8260B
	105	(70 - 130)	0.35	(0-30)	SW846 8260B
cis-1,3-Dichloropropene	95	(70 - 130)			SW846 8260B
	98	(70 - 130)	3.2	(0-30)	SW846 8260B
Trichloroethene	96	(70 - 130)			SW846 8260B
	96	(70 - 130)	0.60	(0-30)	SW846 8260B
Dibromochloromethane	101	(70 - 130)			SW846 8260B
	103	(70 - 130)	1.8	(0-30)	SW846 8260B
1,1,2-Trichloroethane	99	(70 - 130)			SW846 8260B
	103	(70 - 130)	4.1	(0-30)	SW846 8260B
Benzene	100	(70 - 130)			SW846 8260B
	101	(70 - 130)	0.75	(0-30)	SW846 8260B
trans-1,3-Dichloropropene	107	(70 - 130)			SW846 8260B
	108	(70 - 130)	1.4	(0-30)	SW846 8260B
Bromoform	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	1.8	(0-30)	SW846 8260B
4-Methyl-2-pentanone	120	(70 - 130)			SW846 8260B
	123	(70 - 130)	3.1	(0-30)	SW846 8260B
2-Hexanone	119	(70 - 130)			SW846 8260B
	119	(70 - 130)	0.59	(0-30)	SW846 8260B
Tetrachloroethene	85	(70 - 130)			SW846 8260B
	84	(70 - 130)	0.46	(0-30)	SW846 8260B
1,1,2,2-Tetrachloroethane	91	(70 - 130)			SW846 8260B
	98	(70 - 130)	7.0	(0-30)	SW846 8260B
Toluene	94	(70 - 130)			SW846 8260B
	95	(70 - 130)	1.0	(0-30)	SW846 8260B
Chlorobenzene	92	(70 - 130)			SW846 8260B
	92	(70 - 130)	0.42	(0-30)	SW846 8260B
Ethylbenzene	94	(70 - 130)			SW846 8260B
	96	(70 - 130)	2.2	(0-30)	SW846 8260B
Styrene	98	(70 - 130)			SW846 8260B
	99	(70 - 130)	1.5	(0-30)	SW846 8260B
Xylenes (total)	94	(70 - 130)			SW846 8260B
	94	(70 - 130)	0.22	(0-30)	SW846 8260B
n-Hexane	72	(70 - 130)			SW846 8260B
	74	(70 - 130)	1.7	(0-30)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Cyclohexane	**87**	**(70 - 130)**			**SW846 8260B**
	84	**(70 - 130)**	**4.0**	**(0-30)**	**SW846 8260B**
1,2-Dibromo-3-chloro- propane	**72**	**(70 - 130)**			**SW846 8260B**
	71	**(70 - 130)**	**1.5**	**(0-30)**	**SW846 8260B**
1,2-Dichlorobenzene	**87**	**(70 - 130)**			**SW846 8260B**
	91	**(70 - 130)**	**3.9**	**(0-30)**	**SW846 8260B**
1,3-Dichlorobenzene	**82**	**(70 - 130)**			**SW846 8260B**
	87	**(70 - 130)**	**5.2**	**(0-30)**	**SW846 8260B**
1,4-Dichlorobenzene	**85**	**(70 - 130)**			**SW846 8260B**
	87	**(70 - 130)**	**3.1**	**(0-30)**	**SW846 8260B**
Dichlorodifluoromethane	**50 a**	**(70 - 130)**			**SW846 8260B**
	46 a	**(70 - 130)**	**8.8**	**(0-30)**	**SW846 8260B**
Freon 113	**98**	**(70 - 130)**			**SW846 8260B**
	99	**(70 - 130)**	**1.5**	**(0-30)**	**SW846 8260B**
Isopropylbenzene	**87**	**(70 - 130)**			**SW846 8260B**
	88	**(70 - 130)**	**0.80**	**(0-30)**	**SW846 8260B**
Methyl acetate	**99**	**(70 - 130)**			**SW846 8260B**
	95	**(70 - 130)**	**4.0**	**(0-30)**	**SW846 8260B**
Methylcyclohexane	**79**	**(70 - 130)**			**SW846 8260B**
	76	**(70 - 130)**	**5.0**	**(0-30)**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**103**	**(70 - 130)**			**SW846 8260B**
	104	**(70 - 130)**	**1.1**	**(0-30)**	**SW846 8260B**
1,2,4-Trichloro- benzene	**55 a**	**(70 - 130)**			**SW846 8260B**
	55 a	**(70 - 130)**	**0.05**	**(0-30)**	**SW846 8260B**
Trichlorofluoromethane	**117**	**(70 - 130)**			**SW846 8260B**
	118	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**
Acrolein	**118**	**(70 - 130)**			**SW846 8260B**
	117	**(70 - 130)**	**0.99**	**(0-30)**	**SW846 8260B**
Acrylonitrile	**114**	**(70 - 130)**			**SW846 8260B**
	114	**(70 - 130)**	**0.44**	**(0-30)**	**SW846 8260B**
Bromobenzene	**79**	**(70 - 130)**			**SW846 8260B**
	84	**(70 - 130)**	**5.6**	**(0-30)**	**SW846 8260B**
n-Butylbenzene	**74**	**(70 - 130)**			**SW846 8260B**
	76	**(70 - 130)**	**2.8**	**(0-30)**	**SW846 8260B**
sec-Butylbenzene	**72**	**(70 - 130)**			**SW846 8260B**
	75	**(70 - 130)**	**3.8**	**(0-30)**	**SW846 8260B**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
tert-Butylbenzene	**72**	**(70 - 130)**			**SW846 8260B**
	75	**(70 - 130)**	**3.4**	**(0-30)**	**SW846 8260B**
2-Chlorotoluene	**77**	**(70 - 130)**			**SW846 8260B**
	81	**(70 - 130)**	**5.1**	**(0-30)**	**SW846 8260B**
4-Chlorotoluene	**81**	**(70 - 130)**			**SW846 8260B**
	82	**(70 - 130)**	**1.1**	**(0-30)**	**SW846 8260B**
Dibromomethane	**109**	**(70 - 130)**			**SW846 8260B**
	111	**(70 - 130)**	**1.5**	**(0-30)**	**SW846 8260B**
trans-1,4-Dichloro- 2-butene	**176 a**	**(70 - 130)**			**SW846 8260B**
	185 a	**(70 - 130)**	**4.7**	**(0-30)**	**SW846 8260B**
1,3-Dichloropropane	**96**	**(70 - 130)**			**SW846 8260B**
	100	**(70 - 130)**	**3.6**	**(0-30)**	**SW846 8260B**
2,2-Dichloropropane	**91**	**(70 - 130)**			**SW846 8260B**
	94	**(70 - 130)**	**3.2**	**(0-30)**	**SW846 8260B**
1,1-Dichloropropene	**96**	**(70 - 130)**			**SW846 8260B**
	96	**(70 - 130)**	**0.11**	**(0-30)**	**SW846 8260B**
Ethyl methacrylate	**0.0 a**	**(70 - 130)**			**SW846 8260B**
	0.0 a	**(70 - 130)**	**0.0**	**(0-30)**	**SW846 8260B**
Hexachlorobutadiene	**49 a**	**(70 - 130)**			**SW846 8260B**
	52 a	**(70 - 130)**	**6.0**	**(0-30)**	**SW846 8260B**
Iodomethane	**137 a**	**(70 - 130)**			**SW846 8260B**
	144 a	**(70 - 130)**	**5.4**	**(0-30)**	**SW846 8260B**
p-Isopropyltoluene	**79**	**(70 - 130)**			**SW846 8260B**
	81	**(70 - 130)**	**2.3**	**(0-30)**	**SW846 8260B**
Naphthalene	**58 a**	**(70 - 130)**			**SW846 8260B**
	57 a	**(70 - 130)**	**1.7**	**(0-30)**	**SW846 8260B**
n-Propylbenzene	**77**	**(70 - 130)**			**SW846 8260B**
	79	**(70 - 130)**	**1.8**	**(0-30)**	**SW846 8260B**
1,1,1,2-Tetrachloroethane	**98**	**(70 - 130)**			**SW846 8260B**
	100	**(70 - 130)**	**1.2**	**(0-30)**	**SW846 8260B**
1,2,3-Trichlorobenzene	**55 a**	**(70 - 130)**			**SW846 8260B**
	53 a	**(70 - 130)**	**3.0**	**(0-30)**	**SW846 8260B**
1,2,3-Trichloropropane	**91**	**(70 - 130)**			**SW846 8260B**
	94	**(70 - 130)**	**4.2**	**(0-30)**	**SW846 8260B**
1,1,2-Trichloro- 1,2,2-trifluoroethane	**98**	**(70 - 130)**			**SW846 8260B**
	99	**(70 - 130)**	**1.5**	**(0-30)**	**SW846 8260B**
1,2,4-Trimethylbenzene	**84**	**(70 - 130)**			**SW846 8260B**
	86	**(70 - 130)**	**3.1**	**(0-30)**	**SW846 8260B**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3,5-Trimethylbenzene	**77**	**(70 - 130)**			**SW846 8260B**
	81	**(70 - 130)**	**4.9**	**(0-30)**	**SW846 8260B**
Vinyl acetate	**116**	**(70 - 130)**			**SW846 8260B**
	117	**(70 - 130)**	**1.1**	**(0-30)**	**SW846 8260B**
tert-Butyl alcohol	**115**	**(70 - 130)**			**SW846 8260B**
	112	**(70 - 130)**	**2.8**	**(0-30)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	84	(50 - 150)
	84	(50 - 150)
1,2-Dichloroethane-d4	80	(50 - 150)
	79	(50 - 150)
Toluene-d8	82	(50 - 150)
	79	(50 - 150)
4-Bromofluorobenzene	98	(50 - 150)
	95	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/15/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1105156
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
cis-1,2-Dichloroethene	ND	10	9.6	ug/L	96		SW846 8260B
	ND	10	10	ug/L	101	4.4	SW846 8260B
trans-1,2-Dichloroethene	ND	10	10	ug/L	103		SW846 8260B
	ND	10	10	ug/L	103	0.33	SW846 8260B
1,2-Dibromoethane	ND	10	10	ug/L	102		SW846 8260B
	ND	10	10	ug/L	103	0.89	SW846 8260B
Bromochloromethane	ND	10	10	ug/L	101		SW846 8260B
	ND	10	11	ug/L	107	6.2	SW846 8260B
m-Xylene & p-Xylene	ND	20	18	ug/L	92		SW846 8260B
	ND	20	19	ug/L	93	0.66	SW846 8260B
o-Xylene	ND	10	9.7	ug/L	97		SW846 8260B
	ND	10	9.6	ug/L	96	0.63	SW846 8260B
Chloromethane	ND	10	8.8	ug/L	88		SW846 8260B
	ND	10	9.0	ug/L	90	2.2	SW846 8260B
Bromomethane	ND	10	8.8	ug/L	88		SW846 8260B
	ND	10	8.9	ug/L	89	1.9	SW846 8260B
Vinyl chloride	ND	10	9.5	ug/L	95		SW846 8260B
	ND	10	9.9	ug/L	99	4.0	SW846 8260B
Chloroethane	ND	10	10	ug/L	104		SW846 8260B
	ND	10	11	ug/L	107	2.4	SW846 8260B
Methylene chloride	ND	10	12	ug/L	119		SW846 8260B
	ND	10	12	ug/L	120	1.4	SW846 8260B
Acetone	ND	20	20	ug/L	102		SW846 8260B
	ND	20	22	ug/L	108	5.9	SW846 8260B
Carbon disulfide	ND	10	14	ug/L	135 a		SW846 8260B
	ND	10	14	ug/L	136 a	0.97	SW846 8260B
1,1-Dichloroethene	ND	10	11	ug/L	115		SW846 8260B
	ND	10	12	ug/L	116	1.7	SW846 8260B
1,1-Dichloroethane	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	101	1.6	SW846 8260B
1,2-Dichloroethene (total)	ND	20	20	ug/L	100		SW846 8260B
	ND	20	20	ug/L	102	2.0	SW846 8260B
Chloroform	ND	10	10	ug/L	101		SW846 8260B
	ND	10	10	ug/L	101	0.75	SW846 8260B
1,2-Dichloroethane	ND	10	10	ug/L	103		SW846 8260B
	ND	10	10	ug/L	104	1.0	SW846 8260B
2-Butanone	ND	20	22	ug/L	109		SW846 8260B
	ND	20	23	ug/L	113	3.8	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1,1-Trichloroethane	ND	10	10	ug/L	100		SW846 8260B
	ND	10	10	ug/L	102	2.2	SW846 8260B
Carbon tetrachloride	ND	10	10	ug/L	103		SW846 8260B
	ND	10	10	ug/L	101	1.9	SW846 8260B
Bromodichloromethane	ND	10	11	ug/L	106		SW846 8260B
	ND	10	11	ug/L	105	0.48	SW846 8260B
1,2-Dichloropropane	ND	10	10	ug/L	104		SW846 8260B
	ND	10	10	ug/L	105	0.35	SW846 8260B
cis-1,3-Dichloropropene	ND	10	9.5	ug/L	95		SW846 8260B
	ND	10	9.8	ug/L	98	3.2	SW846 8260B
Trichloroethene	ND	10	9.6	ug/L	96		SW846 8260B
	ND	10	9.6	ug/L	96	0.60	SW846 8260B
Dibromochloromethane	ND	10	10	ug/L	101		SW846 8260B
	ND	10	10	ug/L	103	1.8	SW846 8260B
1,1,2-Trichloroethane	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	103	4.1	SW846 8260B
Benzene	ND	10	10	ug/L	100		SW846 8260B
	ND	10	10	ug/L	101	0.75	SW846 8260B
trans-1,3-Dichloropropene	ND	10	11	ug/L	107		SW846 8260B
	ND	10	11	ug/L	108	1.4	SW846 8260B
Bromoform	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	100	1.8	SW846 8260B
4-Methyl-2-pentanone	ND	20	24	ug/L	120		SW846 8260B
	ND	20	25	ug/L	123	3.1	SW846 8260B
2-Hexanone	ND	20	24	ug/L	119		SW846 8260B
	ND	20	24	ug/L	119	0.59	SW846 8260B
Tetrachloroethene	ND	10	8.5	ug/L	85		SW846 8260B
	ND	10	8.4	ug/L	84	0.46	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	10	9.1	ug/L	91		SW846 8260B
	ND	10	9.8	ug/L	98	7.0	SW846 8260B
Toluene	ND	10	9.4	ug/L	94		SW846 8260B
	ND	10	9.5	ug/L	95	1.0	SW846 8260B
Chlorobenzene	ND	10	9.2	ug/L	92		SW846 8260B
	ND	10	9.2	ug/L	92	0.42	SW846 8260B
Ethylbenzene	ND	10	9.4	ug/L	94		SW846 8260B
	ND	10	9.6	ug/L	96	2.2	SW846 8260B
Styrene	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.9	ug/L	99	1.5	SW846 8260B
Xylenes (total)	ND	30	28	ug/L	94		SW846 8260B
	ND	30	28	ug/L	94	0.22	SW846 8260B
n-Hexane	ND	10	7.2	ug/L	72		SW846 8260B
	ND	10	7.4	ug/L	74	1.7	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Cyclohexane	ND	10	8.7	ug/L	87		SW846 8260B
	ND	10	8.4	ug/L	84	4.0	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	10	7.2	ug/L	72		SW846 8260B
	ND	10	7.1	ug/L	71	1.5	SW846 8260B
1,2-Dichlorobenzene	ND	10	8.7	ug/L	87		SW846 8260B
	ND	10	9.1	ug/L	91	3.9	SW846 8260B
1,3-Dichlorobenzene	ND	10	8.2	ug/L	82		SW846 8260B
	ND	10	8.7	ug/L	87	5.2	SW846 8260B
1,4-Dichlorobenzene	ND	10	8.5	ug/L	85		SW846 8260B
	ND	10	8.7	ug/L	87	3.1	SW846 8260B
Dichlorodifluoromethane	ND	10	5.0	ug/L	50 a		SW846 8260B
	ND	10	4.6	ug/L	46 a	8.8	SW846 8260B
Freon 113	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.9	ug/L	99	1.5	SW846 8260B
Isopropylbenzene	ND	10	8.7	ug/L	87		SW846 8260B
	ND	10	8.8	ug/L	88	0.80	SW846 8260B
Methyl acetate	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	9.5	ug/L	95	4.0	SW846 8260B
Methylcyclohexane	ND	10	7.9	ug/L	79		SW846 8260B
	ND	10	7.6	ug/L	76	5.0	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	10	10	ug/L	103		SW846 8260B
	ND	10	10	ug/L	104	1.1	SW846 8260B
1,2,4-Trichloro-benzene	ND	10	5.5	ug/L	55 a		SW846 8260B
	ND	10	5.5	ug/L	55 a	0.05	SW846 8260B
Trichlorofluoromethane	ND	10	12	ug/L	117		SW846 8260B
	ND	10	12	ug/L	118	1.4	SW846 8260B
Acrolein	ND	30	36	ug/L	118		SW846 8260B
	ND	30	35	ug/L	117	0.99	SW846 8260B
Acrylonitrile	ND	30	34	ug/L	114		SW846 8260B
	ND	30	34	ug/L	114	0.44	SW846 8260B
Bromobenzene	ND	10	7.9	ug/L	79		SW846 8260B
	ND	10	8.4	ug/L	84	5.6	SW846 8260B
n-Butylbenzene	ND	10	7.4	ug/L	74		SW846 8260B
	ND	10	7.6	ug/L	76	2.8	SW846 8260B
sec-Butylbenzene	ND	10	7.2	ug/L	72		SW846 8260B
	ND	10	7.5	ug/L	75	3.8	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
tert-Butylbenzene	ND	10	7.2	ug/L	72		SW846 8260B
	ND	10	7.5	ug/L	75	3.4	SW846 8260B
2-Chlorotoluene	ND	10	7.7	ug/L	77		SW846 8260B
	ND	10	8.1	ug/L	81	5.1	SW846 8260B
4-Chlorotoluene	ND	10	8.1	ug/L	81		SW846 8260B
	ND	10	8.2	ug/L	82	1.1	SW846 8260B
Dibromomethane	ND	10	11	ug/L	109		SW846 8260B
	ND	10	11	ug/L	111	1.5	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	10	18	ug/L	176 a		SW846 8260B
	ND	10	18	ug/L	185 a	4.7	SW846 8260B
1,3-Dichloropropane	ND	10	9.6	ug/L	96		SW846 8260B
	ND	10	10	ug/L	100	3.6	SW846 8260B
2,2-Dichloropropane	ND	10	9.1	ug/L	91		SW846 8260B
	ND	10	9.4	ug/L	94	3.2	SW846 8260B
1,1-Dichloropropene	ND	10	9.6	ug/L	96		SW846 8260B
	ND	10	9.6	ug/L	96	0.11	SW846 8260B
Ethyl methacrylate	ND	10	0.0	ug/L	0.0 a		SW846 8260B
	ND	10	0.0	ug/L	0.0 a	0.0	SW846 8260B
Hexachlorobutadiene	ND	10	4.9	ug/L	49 a		SW846 8260B
	ND	10	5.2	ug/L	52 a	6.0	SW846 8260B
Iodomethane	ND	10	14	ug/L	137 a		SW846 8260B
	ND	10	14	ug/L	144 a	5.4	SW846 8260B
p-Isopropyltoluene	ND	10	7.9	ug/L	79		SW846 8260B
	ND	10	8.1	ug/L	81	2.3	SW846 8260B
Naphthalene	ND	10	5.8	ug/L	58 a		SW846 8260B
	ND	10	5.7	ug/L	57 a	1.7	SW846 8260B
n-Propylbenzene	ND	10	7.7	ug/L	77		SW846 8260B
	ND	10	7.9	ug/L	79	1.8	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	10	ug/L	100	1.2	SW846 8260B
1,2,3-Trichlorobenzene	ND	10	5.5	ug/L	55 a		SW846 8260B
	ND	10	5.3	ug/L	53 a	3.0	SW846 8260B
1,2,3-Trichloropropane	ND	10	9.1	ug/L	91		SW846 8260B
	ND	10	9.4	ug/L	94	4.2	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.9	ug/L	99	1.5	SW846 8260B
1,2,4-Trimethylbenzene	ND	10	8.4	ug/L	84		SW846 8260B
	ND	10	8.6	ug/L	86	3.1	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,3,5-Trimethylbenzene	**ND**	**10**	**7.7**	**ug/L**	**77**		**SW846 8260B**
	ND	**10**	**8.1**	**ug/L**	**81**	**4.9**	**SW846 8260B**
Vinyl acetate	**ND**	**10**	**12**	**ug/L**	**116**		**SW846 8260B**
	ND	**10**	**12**	**ug/L**	**117**	**1.1**	**SW846 8260B**
tert-Butyl alcohol	**ND**	**200**	**230**	**ug/L**	**115**		**SW846 8260B**
	ND	**200**	**220**	**ug/L**	**112**	**2.8**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	84	(50 - 150)
	84	(50 - 150)
1,2-Dichloroethane-d4	80	(50 - 150)
	79	(50 - 150)
Toluene-d8	82	(50 - 150)
	79	(50 - 150)
4-Bromofluorobenzene	98	(50 - 150)
	95	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Lot/SDG Number: **A1D070566**

Sample Control Chain of Custody - TAL North Canton
GC/MS Volatiles

Lot Number	Sample	Work Order	Analysis Type	Analysis Date	Analyst
A1D070566	11	MGPCC1AA	Volatile Organics, GC/MS (8260B)	04/15/11	Laura Evans

GCMS SEMIVOLATILE DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

GC/MS Semivolatiles

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1AC **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11
Prep Date.....: 04/08/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1098032
Dilution Factor: 1 **Initial Wgt/Vol:** 990 mL **Final Wgt/Vol..:** 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	0.20	ug/L
Acenaphthylene	ND	0.20	ug/L
Anthracene	ND	0.20	ug/L
Benzo(a)anthracene	ND	0.20	ug/L
Benzo(b)fluoranthene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.20	ug/L
Benzoic acid	ND	10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(a)pyrene	ND	0.20	ug/L
Benzyl alcohol	ND	5.0	ug/L
bis(2-Chloroethoxy) methane	ND	1.0	ug/L
bis(2-Chloroethyl)-ether	ND	1.0	ug/L
bis(2-Ethylhexyl) phthalate	**2.2 J,B**	**10**	**ug/L**
4-Bromophenyl phenyl ether	ND	2.0	ug/L
Butyl benzyl phthalate	ND	1.0	ug/L
4-Chloroaniline	ND	2.0	ug/L
4-Chloro-3-methylphenol	ND	2.0	ug/L
2-Chloronaphthalene	ND	1.0	ug/L
2-Chlorophenol	ND	1.0	ug/L
4-Chlorophenyl phenyl ether	ND	2.0	ug/L
Chrysene	ND	0.20	ug/L
Dibenz(a,h)anthracene	ND	0.20	ug/L
Dibenzofuran	ND	1.0	ug/L
Di-n-butyl phthalate	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
3,3'-Dichlorobenzidine	ND	5.0	ug/L
2,4-Dichlorophenol	ND	2.0	ug/L
Diethyl phthalate	ND	1.0	ug/L
2,4-Dimethylphenol	ND	2.0	ug/L
Dimethyl phthalate	ND	1.0	ug/L
Di-n-octyl phthalate	ND	1.0	ug/L

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U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

GC/MS Semivolatiles

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1AC **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4,6-Dinitro-2-methylphenol	ND	5.0	ug/L
2,4-Dinitrophenol	ND	5.0	ug/L
2,4-Dinitrotoluene	ND	5.0	ug/L
2,6-Dinitrotoluene	ND	5.0	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Hexachlorobenzene	ND	0.20	ug/L
Hexachlorobutadiene	ND	1.0	ug/L
Hexachlorocyclopenta-diene	ND	10	ug/L
Hexachloroethane	ND	1.0	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
Isophorone	ND	1.0	ug/L
2-Methylnaphthalene	ND	0.20	ug/L
2-Methylphenol	ND	1.0	ug/L
4-Methylphenol	ND	1.0	ug/L
Naphthalene	ND	0.20	ug/L
2-Nitroaniline	ND	2.0	ug/L
3-Nitroaniline	ND	2.0	ug/L
4-Nitroaniline	ND	2.0	ug/L
Nitrobenzene	ND	1.0	ug/L
2-Nitrophenol	ND	2.0	ug/L
4-Nitrophenol	ND	5.0	ug/L
N-Nitrosodi-n-propyl-amine	ND	1.0	ug/L
N-Nitrosodiphenylamine	ND	1.0	ug/L
Pentachlorophenol	ND	5.0	ug/L
Phenanthrene	ND	0.20	ug/L
Phenol	ND	1.0	ug/L
Pyrene	ND	0.20	ug/L
1,2,4-Trichloro-benzene	ND	1.0	ug/L
2,4,5-Trichloro-phenol	ND	5.0	ug/L
2,4,6-Trichloro-phenol	ND	5.0	ug/L
Carbazole	ND	1.0	ug/L
2,2'-oxybis (1-Chloropropane)	ND	1.0	ug/L

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U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

GC/MS Semivolatiles

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1AC **Matrix.....:** WQ

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	64	(50 - 150)
2-Fluorobiphenyl	67	(50 - 150)
Terphenyl-d14	77	(50 - 150)
Phenol-d5	72	(50 - 150)
2-Fluorophenol	70	(50 - 150)
2,4,6-Tribromophenol	64	(50 - 150)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D080000-032

Prep Date.....: 04/08/11 **Final Wgt/Vol..:** 2 mL
Analysis Date..: 04/19/11 **Prep Batch #...:** 1098032
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzoic acid	ND	10	ug/L	SW846 8270C
Acenaphthene	ND	0.20	ug/L	SW846 8270C
Acenaphthylene	ND	0.20	ug/L	SW846 8270C
Anthracene	ND	0.20	ug/L	SW846 8270C
Benzo(a)anthracene	ND	0.20	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	0.20	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	0.20	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	0.20	ug/L	SW846 8270C
Benzo(a)pyrene	ND	0.20	ug/L	SW846 8270C
Benzyl alcohol	ND	5.0	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	1.0	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	1.0	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	**4.0 J**	**10**	**ug/L**	**SW846 8270C**
4-Bromophenyl phenyl ether	ND	2.0	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	1.0	ug/L	SW846 8270C
4-Chloroaniline	ND	2.0	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	2.0	ug/L	SW846 8270C
2-Chloronaphthalene	ND	1.0	ug/L	SW846 8270C
2-Chlorophenol	ND	1.0	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	2.0	ug/L	SW846 8270C
Chrysene	ND	0.20	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	0.20	ug/L	SW846 8270C
Dibenzofuran	ND	1.0	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	1.0	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	5.0	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	2.0	ug/L	SW846 8270C
Diethyl phthalate	ND	1.0	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	2.0	ug/L	SW846 8270C
Dimethyl phthalate	ND	1.0	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	1.0	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	5.0	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	5.0	ug/L	SW846 8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-Dinitrotoluene	ND	5.0	ug/L	SW846 8270C
2,6-Dinitrotoluene	ND	5.0	ug/L	SW846 8270C
Fluoranthene	ND	0.20	ug/L	SW846 8270C
Fluorene	ND	0.20	ug/L	SW846 8270C
Hexachlorobenzene	ND	0.20	ug/L	SW846 8270C
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	1.0	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	SW846 8270C
Isophorone	ND	1.0	ug/L	SW846 8270C
2-Methylnaphthalene	ND	0.20	ug/L	SW846 8270C
2-Methylphenol	ND	1.0	ug/L	SW846 8270C
4-Methylphenol	ND	1.0	ug/L	SW846 8270C
Naphthalene	ND	0.20	ug/L	SW846 8270C
2-Nitroaniline	ND	2.0	ug/L	SW846 8270C
3-Nitroaniline	ND	2.0	ug/L	SW846 8270C
4-Nitroaniline	ND	2.0	ug/L	SW846 8270C
Nitrobenzene	ND	1.0	ug/L	SW846 8270C
2-Nitrophenol	ND	2.0	ug/L	SW846 8270C
4-Nitrophenol	ND	5.0	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	1.0	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	1.0	ug/L	SW846 8270C
Pentachlorophenol	ND	5.0	ug/L	SW846 8270C
Phenanthrene	ND	0.20	ug/L	SW846 8270C
Phenol	ND	1.0	ug/L	SW846 8270C
Pyrene	ND	0.20	ug/L	SW846 8270C
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	5.0	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	5.0	ug/L	SW846 8270C
Carbazole	ND	1.0	ug/L	SW846 8270C
2,2'-oxybis (1-Chloropropane)	ND	1.0	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	144	(50 - 150)
2-Fluorobiphenyl	146	(50 - 150)
Terphenyl-d14	171 *	(50 - 150)
Phenol-d5	163 *	(50 - 150)
2-Fluorophenol	155 *	(50 - 150)

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4,6-Tribromophenol	169 *	(50 - 150)		

NOTE(S):

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

J Estimated result. Result is less than RL.

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D080000-032
Prep Date.....: 04/08/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1098032
Dilution Factor: 1 **Final Wgt/Vol..:** 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2,4-Trichloro-benzene	73	(30 - 120)	SW846 8270C
Acenaphthene	79	(31 - 120)	SW846 8270C
2,4-Dinitrotoluene	83	(34 - 151)	SW846 8270C
Pyrene	77	(35 - 139)	SW846 8270C
N-Nitrosodi-n-propyl-amine	72	(30 - 132)	SW846 8270C
1,4-Dichlorobenzene	78	(30 - 115)	SW846 8270C
Pentachlorophenol	49	(30 - 150)	SW846 8270C
Phenol	84	(30 - 115)	SW846 8270C
2-Chlorophenol	82	(30 - 120)	SW846 8270C
4-Chloro-3-methylphenol	85	(31 - 121)	SW846 8270C
4-Nitrophenol	87	(30 - 138)	SW846 8270C
1,2-Dichlorobenzene	78	(30 - 120)	SW846 8270C
1,3-Dichlorobenzene	74	(30 - 120)	SW846 8270C
2,4,5-Trichloro-phenol	80	(36 - 135)	SW846 8270C
4-Methylphenol	81	(31 - 115)	SW846 8270C
4-Nitroaniline	72	(30 - 140)	SW846 8270C
Acenaphthylene	78	(37 - 115)	SW846 8270C
Anthracene	79	(45 - 118)	SW846 8270C
Benzo(a)anthracene	74	(43 - 138)	SW846 8270C
Benzo(a)pyrene	66	(38 - 144)	SW846 8270C
Benzo(b)fluoranthene	70	(31 - 146)	SW846 8270C
Benzo(ghi)perylene	79	(35 - 129)	SW846 8270C
Benzo(k)fluoranthene	91	(40 - 127)	SW846 8270C
bis(2-Chloroethoxy) methane	82	(30 - 115)	SW846 8270C
bis(2-Chloroethyl)-ether	78	(30 - 115)	SW846 8270C
bis(2-Chloroisopropyl) ether	78	(50 - 150)	SW846 8270C
bis(2-Ethylhexyl) phthalate	55	(30 - 154)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D080000-032

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,4,6-Trichloro-phenol	81	(39 - 115)	SW846 8270C
2,4-Dichlorophenol	82	(34 - 115)	SW846 8270C
2,4-Dimethylphenol	65	(31 - 120)	SW846 8270C
2,4-Dinitrophenol	36	(29 - 146)	SW846 8270C
2,6-Dinitrotoluene	82	(43 - 122)	SW846 8270C
2-Chloronaphthalene	77	(35 - 115)	SW846 8270C
2-Methylnaphthalene	91	(32 - 115)	SW846 8270C
2-Methylphenol	81	(30 - 116)	SW846 8270C
2-Nitroaniline	72	(36 - 140)	SW846 8270C
2-Nitrophenol	86	(33 - 115)	SW846 8270C
3,3'-Dichlorobenzidine	46	(30 - 160)	SW846 8270C
3-Nitroaniline	66	(30 - 138)	SW846 8270C
4,6-Dinitro-2-methylphenol	76	(42 - 144)	SW846 8270C
4-Bromophenyl phenyl ether	86	(43 - 118)	SW846 8270C
4-Chloroaniline	62	(30 - 133)	SW846 8270C
4-Chlorophenyl phenyl ether	79	(40 - 115)	SW846 8270C
Butyl benzyl phthalate	78	(37 - 136)	SW846 8270C
Carbazole	79	(49 - 126)	SW846 8270C
Chrysene	79	(42 - 142)	SW846 8270C
Dibenz(a,h)anthracene	74	(38 - 130)	SW846 8270C
Dibenzofuran	77	(40 - 115)	SW846 8270C
Diethyl phthalate	80	(43 - 132)	SW846 8270C
Dimethyl phthalate	80	(42 - 116)	SW846 8270C
Di-n-octyl phthalate	49	(36 - 151)	SW846 8270C
Fluoranthene	81	(47 - 132)	SW846 8270C
Fluorene	77	(41 - 115)	SW846 8270C
Hexachlorobenzene	85	(42 - 123)	SW846 8270C
Hexachlorobutadiene	74	(30 - 120)	SW846 8270C
Hexachloroethane	74	(30 - 120)	SW846 8270C
Isophorone	78	(33 - 115)	SW846 8270C
Naphthalene	77	(30 - 119)	SW846 8270C
Nitrobenzene	81	(31 - 115)	SW846 8270C
N-Nitrosodiphenylamine	70	(35 - 124)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D080000-032

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Phenanthrene	**79**	**(45 - 117)**	**SW846 8270C**
Indeno(1,2,3-cd)pyrene	**76**	**(37 - 130)**	**SW846 8270C**
Di-n-butyl phthalate	**82**	**(46 - 123)**	**SW846 8270C**
Hexachlorocyclopenta-diene	**41**	**(30 - 115)**	**SW846 8270C**
Benzoic acid	**29 a**	**(30 - 136)**	**SW846 8270C**
Benzyl alcohol	**83**	**(29 - 115)**	**SW846 8270C**
Atrazine	**84**	**(30 - 120)**	**SW846 8270C**
Acetophenone	**81**	**(30 - 120)**	**SW846 8270C**
1,1'-Biphenyl	**78**	**(30 - 120)**	**SW846 8270C**
Caprolactam	**80**	**(30 - 120)**	**SW846 8270C**
Benzaldehyde	**181 a**	**(30 - 120)**	**SW846 8270C**
Aniline	**56**	**(30 - 127)**	**SW846 8270C**
N-Nitrosodimethylamine	**75**	**(30 - 115)**	**SW846 8270C**
Pyridine	**21 a**	**(50 - 150)**	**SW846 8270C**
1,2-Diphenylhydrazine	**81**	**(50 - 150)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	76	(50 - 150)
2-Fluorobiphenyl	77	(50 - 150)
Terphenyl-d14	90	(50 - 150)
Phenol-d5	85	(50 - 150)
2-Fluorophenol	82	(50 - 150)
2,4,6-Tribromophenol	88	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D080000-032
Prep Date.....: 04/08/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1098032
Dilution Factor: 1 **Final Wgt/Vol..:** 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,2,4-Trichloro-benzene	20	15	ug/L	73	SW846 8270C
Acenaphthene	20	16	ug/L	79	SW846 8270C
2,4-Dinitrotoluene	20	17	ug/L	83	SW846 8270C
Pyrene	20	15	ug/L	77	SW846 8270C
N-Nitrosodi-n-propyl-amine	20	14	ug/L	72	SW846 8270C
1,4-Dichlorobenzene	20	16	ug/L	78	SW846 8270C
Pentachlorophenol	20	9.7	ug/L	49	SW846 8270C
Phenol	20	17	ug/L	84	SW846 8270C
2-Chlorophenol	20	16	ug/L	82	SW846 8270C
4-Chloro-3-methylphenol	20	17	ug/L	85	SW846 8270C
4-Nitrophenol	20	17	ug/L	87	SW846 8270C
1,2-Dichlorobenzene	20	16	ug/L	78	SW846 8270C
1,3-Dichlorobenzene	20	15	ug/L	74	SW846 8270C
2,4,5-Trichloro-phenol	20	16	ug/L	80	SW846 8270C
4-Methylphenol	40	33	ug/L	81	SW846 8270C
4-Nitroaniline	20	14	ug/L	72	SW846 8270C
Acenaphthylene	20	16	ug/L	78	SW846 8270C
Anthracene	20	16	ug/L	79	SW846 8270C
Benzo(a)anthracene	20	15	ug/L	74	SW846 8270C
Benzo(a)pyrene	20	13	ug/L	66	SW846 8270C
Benzo(b)fluoranthene	20	14	ug/L	70	SW846 8270C
Benzo(ghi)perylene	20	16	ug/L	79	SW846 8270C
Benzo(k)fluoranthene	20	18	ug/L	91	SW846 8270C
bis(2-Chloroethoxy) methane	20	16	ug/L	82	SW846 8270C
bis(2-Chloroethyl)-ether	20	16	ug/L	78	SW846 8270C
bis(2-Chloroisopropyl) ether	20	16	ug/L	78	SW846 8270C
bis(2-Ethylhexyl) phthalate	20	11	ug/L	55	SW846 8270C

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D080000-032

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,4,6-Trichloro-phenol	20	16	ug/L	81	SW846 8270C
2,4-Dichlorophenol	20	16	ug/L	82	SW846 8270C
2,4-Dimethylphenol	20	13	ug/L	65	SW846 8270C
2,4-Dinitrophenol	20	7.2	ug/L	36	SW846 8270C
2,6-Dinitrotoluene	20	16	ug/L	82	SW846 8270C
2-Chloronaphthalene	20	15	ug/L	77	SW846 8270C
2-Methylnaphthalene	20	18	ug/L	91	SW846 8270C
2-Methylphenol	20	16	ug/L	81	SW846 8270C
2-Nitroaniline	20	14	ug/L	72	SW846 8270C
2-Nitrophenol	20	17	ug/L	86	SW846 8270C
3,3'-Dichlorobenzidine	20	9.2	ug/L	46	SW846 8270C
3-Nitroaniline	20	13	ug/L	66	SW846 8270C
4,6-Dinitro-2-methylphenol	20	15	ug/L	76	SW846 8270C
4-Bromophenyl phenyl ether	20	17	ug/L	86	SW846 8270C
4-Chloroaniline	20	12	ug/L	62	SW846 8270C
4-Chlorophenyl phenyl ether	20	16	ug/L	79	SW846 8270C
Butyl benzyl phthalate	20	16	ug/L	78	SW846 8270C
Carbazole	20	16	ug/L	79	SW846 8270C
Chrysene	20	16	ug/L	79	SW846 8270C
Dibenz(a,h)anthracene	20	15	ug/L	74	SW846 8270C
Dibenzofuran	20	15	ug/L	77	SW846 8270C
Diethyl phthalate	20	16	ug/L	80	SW846 8270C
Dimethyl phthalate	20	16	ug/L	80	SW846 8270C
Di-n-octyl phthalate	20	9.9	ug/L	49	SW846 8270C
Fluoranthene	20	16	ug/L	81	SW846 8270C
Fluorene	20	15	ug/L	77	SW846 8270C
Hexachlorobenzene	20	17	ug/L	85	SW846 8270C
Hexachlorobutadiene	20	15	ug/L	74	SW846 8270C
Hexachloroethane	20	15	ug/L	74	SW846 8270C
Isophorone	20	16	ug/L	78	SW846 8270C
Naphthalene	20	15	ug/L	77	SW846 8270C
Nitrobenzene	20	16	ug/L	81	SW846 8270C
N-Nitrosodiphenylamine	20	14	ug/L	70	SW846 8270C

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGPXW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D080000-032

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Phenanthrene	**20**	**16**	**ug/L**	**79**	**SW846 8270C**
Indeno(1,2,3-cd)pyrene	**20**	**15**	**ug/L**	**76**	**SW846 8270C**
Di-n-butyl phthalate	**20**	**16**	**ug/L**	**82**	**SW846 8270C**
Hexachlorocyclopenta-diene	**20**	**8.3**	**ug/L**	**41**	**SW846 8270C**
Benzoic acid	**20**	**a**	**ug/L**	**29**	**SW846 8270C**
Benzyl alcohol	**20**	**17**	**ug/L**	**83**	**SW846 8270C**
Atrazine	**20**	**17**	**ug/L**	**84**	**SW846 8270C**
Acetophenone	**20**	**16**	**ug/L**	**81**	**SW846 8270C**
1,1'-Biphenyl	**20**	**16**	**ug/L**	**78**	**SW846 8270C**
Caprolactam	**20**	**16**	**ug/L**	**80**	**SW846 8270C**
Benzaldehyde	**20**	**36 a**	**ug/L**	**181**	**SW846 8270C**
Aniline	**20**	**11**	**ug/L**	**56**	**SW846 8270C**
N-Nitrosodimethylamine	**20**	**15**	**ug/L**	**75**	**SW846 8270C**
Pyridine	**20**	**4.2 a**	**ug/L**	**21**	**SW846 8270C**
1,2-Diphenylhydrazine	**20**	**16**	**ug/L**	**81**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	76	(50 - 150)
2-Fluorobiphenyl	77	(50 - 150)
Terphenyl-d14	90	(50 - 150)
Phenol-d5	85	(50 - 150)
2-Fluorophenol	82	(50 - 150)
2,4,6-Tribromophenol	88	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/08/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1098032
Dilution Factor: 1 **Initial Wgt/Vol:** 490 mL **Final Wgt/Vol..:** 2 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,2,4-Trichloro-benzene	**66**	**(45 - 135)**			**SW846 8270C**
	69	**(45 - 135)**	**4.5**	**(0-40)**	**SW846 8270C**
Acenaphthene	**74**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**2.0**	**(0-40)**	**SW846 8270C**
2,4-Dinitrotoluene	**76**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**3.8**	**(0-40)**	**SW846 8270C**
Pyrene	**71**	**(45 - 135)**			**SW846 8270C**
	72	**(45 - 135)**	**1.7**	**(0-40)**	**SW846 8270C**
N-Nitrosodi-n-propyl-amine	**67**	**(45 - 135)**			**SW846 8270C**
	69	**(45 - 135)**	**3.0**	**(0-40)**	**SW846 8270C**
1,4-Dichlorobenzene	**71**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**5.3**	**(0-40)**	**SW846 8270C**
Pentachlorophenol	**50**	**(45 - 135)**			**SW846 8270C**
	47	**(45 - 135)**	**6.6**	**(0-40)**	**SW846 8270C**
Phenol	**77**	**(45 - 135)**			**SW846 8270C**
	81	**(45 - 135)**	**5.1**	**(0-40)**	**SW846 8270C**
2-Chlorophenol	**76**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**3.8**	**(0-40)**	**SW846 8270C**
4-Chloro-3-methylphenol	**76**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**3.9**	**(0-40)**	**SW846 8270C**
4-Nitrophenol	**80**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**1.4**	**(0-40)**	**SW846 8270C**
Acenaphthylene	**72**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**3.4**	**(0-40)**	**SW846 8270C**
Anthracene	**71**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**4.8**	**(0-40)**	**SW846 8270C**
Benzo(a)anthracene	**67**	**(45 - 135)**			**SW846 8270C**
	68	**(45 - 135)**	**1.8**	**(0-40)**	**SW846 8270C**
Benzo(b)fluoranthene	**68**	**(45 - 135)**			**SW846 8270C**
	66	**(45 - 135)**	**4.2**	**(0-40)**	**SW846 8270C**
Benzo(k)fluoranthene	**78**	**(45 - 135)**			**SW846 8270C**
	91	**(45 - 135)**	**15**	**(0-40)**	**SW846 8270C**
Benzo(ghi)perylene	**74**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**1.6**	**(0-40)**	**SW846 8270C**
Benzo(a)pyrene	**59**	**(45 - 135)**			**SW846 8270C**
	64	**(45 - 135)**	**7.4**	**(0-40)**	**SW846 8270C**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
bis(2-Chloroethoxy) methane	**75**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**1.2**	**(0-40)**	**SW846 8270C**
bis(2-Chloroethyl)-ether	**71**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**9.4**	**(0-40)**	**SW846 8270C**
bis(2-Chloroisopropyl) ether	**71**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**5.8**	**(0-40)**	**SW846 8270C**
bis(2-Ethylhexyl) phthalate	**77**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**1.9**	**(0-40)**	**SW846 8270C**
4-Bromophenyl phenyl ether	**77**	**(45 - 135)**			**SW846 8270C**
	82	**(45 - 135)**	**6.6**	**(0-40)**	**SW846 8270C**
Butyl benzyl phthalate	**74**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**0.11**	**(0-40)**	**SW846 8270C**
Carbazole	**73**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**4.2**	**(0-40)**	**SW846 8270C**
4-Chloroaniline	**57**	**(45 - 135)**			**SW846 8270C**
	58	**(45 - 135)**	**2.6**	**(0-40)**	**SW846 8270C**
2-Chloronaphthalene	**73**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**2.0**	**(0-40)**	**SW846 8270C**
4-Chlorophenyl phenyl ether	**75**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**4.4**	**(0-40)**	**SW846 8270C**
Chrysene	**75**	**(45 - 135)**			**SW846 8270C**
	72	**(45 - 135)**	**4.9**	**(0-40)**	**SW846 8270C**
Dibenz(a,h)anthracene	**73**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**4.3**	**(0-40)**	**SW846 8270C**
Dibenzofuran	**72**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**4.2**	**(0-40)**	**SW846 8270C**
Di-n-butyl phthalate	**76**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**3.0**	**(0-40)**	**SW846 8270C**
1,2-Dichlorobenzene	**73**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**4.0**	**(0-40)**	**SW846 8270C**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3-Dichlorobenzene	**68**	**(45 - 135)**			**SW846 8270C**
	71	**(45 - 135)**	**4.3**	**(0-40)**	**SW846 8270C**
3,3'-Dichlorobenzidine	**29 a**	**(45 - 135)**			**SW846 8270C**
	27 a	**(45 - 135)**	**6.3**	**(0-40)**	**SW846 8270C**
2,4-Dichlorophenol	**76**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**3.3**	**(0-40)**	**SW846 8270C**
Diethyl phthalate	**75**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**4.3**	**(0-40)**	**SW846 8270C**
2,4-Dimethylphenol	**61**	**(45 - 135)**			**SW846 8270C**
	60	**(45 - 135)**	**1.7**	**(0-40)**	**SW846 8270C**
Dimethyl phthalate	**73**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**4.2**	**(0-40)**	**SW846 8270C**
4,6-Dinitro- 2-methylphenol	**71**	**(45 - 135)**			**SW846 8270C**
	71	**(45 - 135)**	**0.04**	**(0-40)**	**SW846 8270C**
2,4-Dinitrophenol	**35 a**	**(45 - 135)**			**SW846 8270C**
	35 a	**(45 - 135)**	**0.90**	**(0-40)**	**SW846 8270C**
2,6-Dinitrotoluene	**76**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**3.8**	**(0-40)**	**SW846 8270C**
Di-n-octyl phthalate	**69**	**(45 - 135)**			**SW846 8270C**
	71	**(45 - 135)**	**2.6**	**(0-40)**	**SW846 8270C**
Fluoranthene	**75**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**4.5**	**(0-40)**	**SW846 8270C**
Fluorene	**71**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**4.9**	**(0-40)**	**SW846 8270C**
Hexachlorobenzene	**76**	**(45 - 135)**			**SW846 8270C**
	80	**(45 - 135)**	**5.3**	**(0-40)**	**SW846 8270C**
Hexachlorobutadiene	**66**	**(45 - 135)**			**SW846 8270C**
	69	**(45 - 135)**	**5.1**	**(0-40)**	**SW846 8270C**
Hexachlorocyclopenta- diene	**38 a**	**(45 - 135)**			**SW846 8270C**
	41 a	**(45 - 135)**	**9.2**	**(0-40)**	**SW846 8270C**
Hexachloroethane	**66**	**(45 - 135)**			**SW846 8270C**
	70	**(45 - 135)**	**5.2**	**(0-40)**	**SW846 8270C**
Indeno(1,2,3-cd)pyrene	**71**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**4.3**	**(0-40)**	**SW846 8270C**
Isophorone	**71**	**(45 - 135)**			**SW846 8270C**
	73	**(45 - 135)**	**3.5**	**(0-40)**	**SW846 8270C**
2-Methylnaphthalene	**83**	**(45 - 135)**			**SW846 8270C**
	87	**(45 - 135)**	**4.9**	**(0-40)**	**SW846 8270C**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2-Methylphenol	**74**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**2.9**	**(0-40)**	**SW846 8270C**
4-Methylphenol	**75**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**4.3**	**(0-40)**	**SW846 8270C**
Naphthalene	**70**	**(45 - 135)**			**SW846 8270C**
	71	**(45 - 135)**	**2.2**	**(0-40)**	**SW846 8270C**
2-Nitroaniline	**66**	**(45 - 135)**			**SW846 8270C**
	69	**(45 - 135)**	**4.1**	**(0-40)**	**SW846 8270C**
3-Nitroaniline	**64**	**(45 - 135)**			**SW846 8270C**
	65	**(45 - 135)**	**1.5**	**(0-50)**	**SW846 8270C**
4-Nitroaniline	**67**	**(45 - 135)**			**SW846 8270C**
	69	**(45 - 135)**	**3.1**	**(0-40)**	**SW846 8270C**
Nitrobenzene	**72**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**3.7**	**(0-40)**	**SW846 8270C**
2-Nitrophenol	**75**	**(45 - 135)**			**SW846 8270C**
	81	**(45 - 135)**	**7.8**	**(0-40)**	**SW846 8270C**
N-Nitrosodiphenylamine	**61**	**(45 - 135)**			**SW846 8270C**
	62	**(45 - 135)**	**2.1**	**(0-40)**	**SW846 8270C**
Phenanthrene	**73**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**3.0**	**(0-40)**	**SW846 8270C**
2,4,5-Trichloro- phenol	**76**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**1.3**	**(0-40)**	**SW846 8270C**
2,4,6-Trichloro- phenol	**70**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**6.0**	**(0-40)**	**SW846 8270C**
Benzoic acid	**25 a**	**(45 - 135)**			**SW846 8270C**
	29 a	**(45 - 135)**	**15**	**(0-40)**	**SW846 8270C**
Benzyl alcohol	**80**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**5.2**	**(0-40)**	**SW846 8270C**
Atrazine	**76**	**(45 - 135)**			**SW846 8270C**
	81	**(45 - 135)**	**6.1**	**(0-40)**	**SW846 8270C**
Benzaldehyde	**159 a**	**(45 - 135)**			**SW846 8270C**
	168 a	**(45 - 135)**	**5.4**	**(0-40)**	**SW846 8270C**
Acetophenone	**75**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**6.0**	**(0-40)**	**SW846 8270C**
1,1'-Biphenyl	**73**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**2.8**	**(0-40)**	**SW846 8270C**
Caprolactam	**73**	**(45 - 135)**			**SW846 8270C**
	72	**(45 - 135)**	**1.6**	**(0-40)**	**SW846 8270C**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	69	(50 - 150)
	70	(50 - 150)
2-Fluorobiphenyl	72	(50 - 150)
	72	(50 - 150)
Terphenyl-d14	81	(50 - 150)
	83	(50 - 150)
Phenol-d5	77	(50 - 150)
	79	(50 - 150)
2-Fluorophenol	75	(50 - 150)
	76	(50 - 150)
2,4,6-Tribromophenol	79	(50 - 150)
	80	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/08/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1098032
Dilution Factor: 1 **Initial Wgt/Vol:** 490 mL **Final Wgt/Vol..:** 2 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,2,4-Trichloro-benzene	ND	41	27	ug/L	66		SW846 8270C
	ND	41	28	ug/L	69	4.5	SW846 8270C
Acenaphthene	ND	41	30	ug/L	74		SW846 8270C
	ND	41	31	ug/L	75	2.0	SW846 8270C
2,4-Dinitrotoluene	ND	41	31	ug/L	76		SW846 8270C
	ND	41	32	ug/L	79	3.8	SW846 8270C
Pyrene	ND	41	29	ug/L	71		SW846 8270C
	ND	41	30	ug/L	72	1.7	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	41	27	ug/L	67		SW846 8270C
	ND	41	28	ug/L	69	3.0	SW846 8270C
1,4-Dichlorobenzene	ND	41	29	ug/L	71		SW846 8270C
	ND	41	31	ug/L	75	5.3	SW846 8270C
Pentachlorophenol	ND	41	21	ug/L	50		SW846 8270C
	ND	41	19	ug/L	47	6.6	SW846 8270C
Phenol	ND	41	31	ug/L	77		SW846 8270C
	ND	41	33	ug/L	81	5.1	SW846 8270C
2-Chlorophenol	ND	41	31	ug/L	76		SW846 8270C
	ND	41	32	ug/L	79	3.8	SW846 8270C
4-Chloro-3-methylphenol	ND	41	31	ug/L	76		SW846 8270C
	ND	41	32	ug/L	79	3.9	SW846 8270C
4-Nitrophenol	ND	41	32	ug/L	80		SW846 8270C
	ND	41	32	ug/L	78	1.4	SW846 8270C
Acenaphthylene	ND	41	29	ug/L	72		SW846 8270C
	ND	41	30	ug/L	74	3.4	SW846 8270C
Anthracene	ND	41	29	ug/L	71		SW846 8270C
	ND	41	30	ug/L	75	4.8	SW846 8270C
Benzo(a)anthracene	ND	41	27	ug/L	67		SW846 8270C
	ND	41	28	ug/L	68	1.8	SW846 8270C
Benzo(b)fluoranthene	ND	41	28	ug/L	68		SW846 8270C
	ND	41	27	ug/L	66	4.2	SW846 8270C
Benzo(k)fluoranthene	ND	41	32	ug/L	78		SW846 8270C
	ND	41	37	ug/L	91	15	SW846 8270C
Benzo(ghi)perylene	ND	41	30	ug/L	74		SW846 8270C
	ND	41	30	ug/L	75	1.6	SW846 8270C
Benzo(a)pyrene	ND	41	24	ug/L	59		SW846 8270C
	ND	41	26	ug/L	64	7.4	SW846 8270C

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
bis(2-Chloroethoxy) methane	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**1.2**	**SW846 8270C**
bis(2-Chloroethyl)-ether	**ND**	**41**	**29**	**ug/L**	**71**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**79**	**9.4**	**SW846 8270C**
bis(2-Chloroisopropyl) ether	**ND**	**41**	**29**	**ug/L**	**71**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**5.8**	**SW846 8270C**
bis(2-Ethylhexyl) phthalate	**ND**	**41**	**31**	**ug/L**	**77**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**78**	**1.9**	**SW846 8270C**
4-Bromophenyl phenyl ether	**ND**	**41**	**31**	**ug/L**	**77**		**SW846 8270C**
	ND	**41**	**34**	**ug/L**	**82**	**6.6**	**SW846 8270C**
Butyl benzyl phthalate	**ND**	**41**	**30**	**ug/L**	**74**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**74**	**0.11**	**SW846 8270C**
Carbazole	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**4.2**	**SW846 8270C**
4-Chloroaniline	**ND**	**41**	**23**	**ug/L**	**57**		**SW846 8270C**
	ND	**41**	**24**	**ug/L**	**58**	**2.6**	**SW846 8270C**
2-Chloronaphthalene	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**74**	**2.0**	**SW846 8270C**
4-Chlorophenyl phenyl ether	**ND**	**41**	**30**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**78**	**4.4**	**SW846 8270C**
Chrysene	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**72**	**4.9**	**SW846 8270C**
Dibenz(a,h)anthracene	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**4.3**	**SW846 8270C**
Dibenzofuran	**ND**	**41**	**29**	**ug/L**	**72**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**4.2**	**SW846 8270C**
Di-n-butyl phthalate	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**78**	**3.0**	**SW846 8270C**
1,2-Dichlorobenzene	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**4.0**	**SW846 8270C**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,3-Dichlorobenzene	**ND**	**41**	**28**	**ug/L**	**68**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**71**	**4.3**	**SW846 8270C**
3,3'-Dichlorobenzidine	**ND**	**41**	**12**	**ug/L**	**29 a**		**SW846 8270C**
	ND	**41**	**11**	**ug/L**	**27 a**	**6.3**	**SW846 8270C**
2,4-Dichlorophenol	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**78**	**3.3**	**SW846 8270C**
Diethyl phthalate	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**78**	**4.3**	**SW846 8270C**
2,4-Dimethylphenol	**ND**	**41**	**25**	**ug/L**	**61**		**SW846 8270C**
	ND	**41**	**24**	**ug/L**	**60**	**1.7**	**SW846 8270C**
Dimethyl phthalate	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**4.2**	**SW846 8270C**
4,6-Dinitro- 2-methylphenol	**ND**	**41**	**29**	**ug/L**	**71**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**71**	**0.04**	**SW846 8270C**
2,4-Dinitrophenol	**ND**	**41**	**14**	**ug/L**	**35 a**		**SW846 8270C**
	ND	**41**	**14**	**ug/L**	**35 a**	**0.90**	**SW846 8270C**
2,6-Dinitrotoluene	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**79**	**3.8**	**SW846 8270C**
Di-n-octyl phthalate	**ND**	**41**	**28**	**ug/L**	**69**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**71**	**2.6**	**SW846 8270C**
Fluoranthene	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**78**	**4.5**	**SW846 8270C**
Fluorene	**ND**	**41**	**29**	**ug/L**	**71**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**4.9**	**SW846 8270C**
Hexachlorobenzene	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**33**	**ug/L**	**80**	**5.3**	**SW846 8270C**
Hexachlorobutadiene	**ND**	**41**	**27**	**ug/L**	**66**		**SW846 8270C**
	ND	**41**	**28**	**ug/L**	**69**	**5.1**	**SW846 8270C**
Hexachlorocyclopenta- diene	**ND**	**41**	**15**	**ug/L**	**38 a**		**SW846 8270C**
	ND	**41**	**17**	**ug/L**	**41 a**	**9.2**	**SW846 8270C**
Hexachloroethane	**ND**	**41**	**27**	**ug/L**	**66**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**70**	**5.2**	**SW846 8270C**
Indeno(1,2,3-cd)pyrene	**ND**	**41**	**29**	**ug/L**	**71**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**74**	**4.3**	**SW846 8270C**
Isophorone	**ND**	**41**	**29**	**ug/L**	**71**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**73**	**3.5**	**SW846 8270C**
2-Methylnaphthalene	**ND**	**41**	**34**	**ug/L**	**83**		**SW846 8270C**
	ND	**41**	**35**	**ug/L**	**87**	**4.9**	**SW846 8270C**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2-Methylphenol	**ND**	**41**	**30**	**ug/L**	**74**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**2.9**	**SW846 8270C**
4-Methylphenol	**ND**	**82**	**61**	**ug/L**	**75**		**SW846 8270C**
	ND	**82**	**64**	**ug/L**	**78**	**4.3**	**SW846 8270C**
Naphthalene	**ND**	**41**	**28**	**ug/L**	**70**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**71**	**2.2**	**SW846 8270C**
2-Nitroaniline	**ND**	**41**	**27**	**ug/L**	**66**		**SW846 8270C**
	ND	**41**	**28**	**ug/L**	**69**	**4.1**	**SW846 8270C**
3-Nitroaniline	**ND**	**41**	**26**	**ug/L**	**64**		**SW846 8270C**
	ND	**41**	**27**	**ug/L**	**65**	**1.5**	**SW846 8270C**
4-Nitroaniline	**ND**	**41**	**27**	**ug/L**	**67**		**SW846 8270C**
	ND	**41**	**28**	**ug/L**	**69**	**3.1**	**SW846 8270C**
Nitrobenzene	**ND**	**41**	**30**	**ug/L**	**72**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**3.7**	**SW846 8270C**
2-Nitrophenol	**ND**	**41**	**30**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**33**	**ug/L**	**81**	**7.8**	**SW846 8270C**
N-Nitrosodiphenylamine	**ND**	**41**	**25**	**ug/L**	**61**		**SW846 8270C**
	ND	**41**	**25**	**ug/L**	**62**	**2.1**	**SW846 8270C**
Phenanthrene	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**3.0**	**SW846 8270C**
2,4,5-Trichloro- phenol	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**1.3**	**SW846 8270C**
2,4,6-Trichloro- phenol	**ND**	**41**	**28**	**ug/L**	**70**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**74**	**6.0**	**SW846 8270C**
Benzoic acid	**ND**	**41**	**10**	**ug/L**	**25 a**		**SW846 8270C**
	ND	**41**	**12**	**ug/L**	**29 a**	**15**	**SW846 8270C**
Benzyl alcohol	**ND**	**41**	**33**	**ug/L**	**80**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**5.2**	**SW846 8270C**
Atrazine	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**33**	**ug/L**	**81**	**6.1**	**SW846 8270C**
Benzaldehyde	**ND**	**41**	**65**	**ug/L**	**159 a**		**SW846 8270C**
	ND	**41**	**68**	**ug/L**	**168 a**	**5.4**	**SW846 8270C**
Acetophenone	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**79**	**6.0**	**SW846 8270C**
1,1'-Biphenyl	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**2.8**	**SW846 8270C**
Caprolactam	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**72**	**1.6**	**SW846 8270C**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AG-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	69	(50 - 150)
	70	(50 - 150)
2-Fluorobiphenyl	72	(50 - 150)
	72	(50 - 150)
Terphenyl-d14	81	(50 - 150)
	83	(50 - 150)
Phenol-d5	77	(50 - 150)
	79	(50 - 150)
2-Fluorophenol	75	(50 - 150)
	76	(50 - 150)
2,4,6-Tribromophenol	79	(50 - 150)
	80	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/08/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1098032
Dilution Factor: 1 **Initial Wgt/Vol:** 490 mL **Final Wgt/Vol..:** 2 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,2,4-Trichloro-benzene	68	(45 - 135)			SW846 8270C
	68	(45 - 135)	1.1	(0-40)	SW846 8270C
Acenaphthene	76	(45 - 135)			SW846 8270C
	75	(45 - 135)	0.78	(0-40)	SW846 8270C
2,4-Dinitrotoluene	80	(45 - 135)			SW846 8270C
	78	(45 - 135)	1.9	(0-40)	SW846 8270C
Pyrene	72	(45 - 135)			SW846 8270C
	73	(45 - 135)	1.8	(0-40)	SW846 8270C
N-Nitrosodi-n-propyl-amine	67	(45 - 135)			SW846 8270C
	68	(45 - 135)	1.5	(0-40)	SW846 8270C
1,4-Dichlorobenzene	73	(45 - 135)			SW846 8270C
	72	(45 - 135)	0.73	(0-40)	SW846 8270C
Pentachlorophenol	71	(45 - 135)			SW846 8270C
	70	(45 - 135)	1.9	(0-40)	SW846 8270C
Phenol	78	(45 - 135)			SW846 8270C
	78	(45 - 135)	0.11	(0-40)	SW846 8270C
2-Chlorophenol	78	(45 - 135)			SW846 8270C
	77	(45 - 135)	0.30	(0-40)	SW846 8270C
4-Chloro-3-methylphenol	81	(45 - 135)			SW846 8270C
	83	(45 - 135)	2.7	(0-40)	SW846 8270C
4-Nitrophenol	83	(45 - 135)			SW846 8270C
	85	(45 - 135)	2.1	(0-40)	SW846 8270C
Acenaphthylene	74	(45 - 135)			SW846 8270C
	73	(45 - 135)	1.7	(0-40)	SW846 8270C
Anthracene	73	(45 - 135)			SW846 8270C
	72	(45 - 135)	1.5	(0-40)	SW846 8270C
Benzo(a)anthracene	67	(45 - 135)			SW846 8270C
	69	(45 - 135)	3.6	(0-40)	SW846 8270C
Benzo(b)fluoranthene	63	(45 - 135)			SW846 8270C
	67	(45 - 135)	6.7	(0-40)	SW846 8270C
Benzo(k)fluoranthene	78	(45 - 135)			SW846 8270C
	79	(45 - 135)	0.98	(0-40)	SW846 8270C
Benzo(ghi)perylene	70	(45 - 135)			SW846 8270C
	72	(45 - 135)	2.9	(0-40)	SW846 8270C
Benzo(a)pyrene	59	(45 - 135)			SW846 8270C
	61	(45 - 135)	3.9	(0-40)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
bis(2-Chloroethoxy) methane	**76**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**0.38**	**(0-40)**	**SW846 8270C**
bis(2-Chloroethyl)-ether	**77**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**2.7**	**(0-40)**	**SW846 8270C**
bis(2-Chloroisopropyl) ether	**73**	**(45 - 135)**			**SW846 8270C**
	73	**(45 - 135)**	**0.05**	**(0-40)**	**SW846 8270C**
bis(2-Ethylhexyl) phthalate	**67**	**(45 - 135)**			**SW846 8270C**
	73	**(45 - 135)**	**7.8**	**(0-40)**	**SW846 8270C**
4-Bromophenyl phenyl ether	**80**	**(45 - 135)**			**SW846 8270C**
	77	**(45 - 135)**	**3.7**	**(0-40)**	**SW846 8270C**
Butyl benzyl phthalate	**76**	**(45 - 135)**			**SW846 8270C**
	80	**(45 - 135)**	**5.2**	**(0-40)**	**SW846 8270C**
Carbazole	**76**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**1.2**	**(0-40)**	**SW846 8270C**
4-Chloroaniline	**53**	**(45 - 135)**			**SW846 8270C**
	54	**(45 - 135)**	**1.4**	**(0-40)**	**SW846 8270C**
2-Chloronaphthalene	**75**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**0.98**	**(0-40)**	**SW846 8270C**
4-Chlorophenyl phenyl ether	**79**	**(45 - 135)**			**SW846 8270C**
	77	**(45 - 135)**	**1.8**	**(0-40)**	**SW846 8270C**
Chrysene	**70**	**(45 - 135)**			**SW846 8270C**
	72	**(45 - 135)**	**3.4**	**(0-40)**	**SW846 8270C**
Dibenz(a,h)anthracene	**70**	**(45 - 135)**			**SW846 8270C**
	72	**(45 - 135)**	**2.3**	**(0-40)**	**SW846 8270C**
Dibenzofuran	**75**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**0.46**	**(0-40)**	**SW846 8270C**
Di-n-butyl phthalate	**79**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**1.6**	**(0-40)**	**SW846 8270C**
1,2-Dichlorobenzene	**74**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**1.2**	**(0-40)**	**SW846 8270C**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3-Dichlorobenzene	**69**	**(45 - 135)**			**SW846 8270C**
	70	**(45 - 135)**	**1.3**	**(0-40)**	**SW846 8270C**
3,3'-Dichlorobenzidine	**20 a**	**(45 - 135)**			**SW846 8270C**
	21 a	**(45 - 135)**	**1.5**	**(0-40)**	**SW846 8270C**
2,4-Dichlorophenol	**80**	**(45 - 135)**			**SW846 8270C**
	80	**(45 - 135)**	**0.15**	**(0-40)**	**SW846 8270C**
Diethyl phthalate	**79**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**2.6**	**(0-40)**	**SW846 8270C**
2,4-Dimethylphenol	**67**	**(45 - 135)**			**SW846 8270C**
	69	**(45 - 135)**	**2.4**	**(0-40)**	**SW846 8270C**
Dimethyl phthalate	**78**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**3.0**	**(0-40)**	**SW846 8270C**
4,6-Dinitro- 2-methylphenol	**73**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**2.1**	**(0-40)**	**SW846 8270C**
2,4-Dinitrophenol	**52**	**(45 - 135)**			**SW846 8270C**
	52	**(45 - 135)**	**1.0**	**(0-40)**	**SW846 8270C**
2,6-Dinitrotoluene	**80**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**1.3**	**(0-40)**	**SW846 8270C**
Di-n-octyl phthalate	**60**	**(45 - 135)**			**SW846 8270C**
	62	**(45 - 135)**	**3.9**	**(0-40)**	**SW846 8270C**
Fluoranthene	**77**	**(45 - 135)**			**SW846 8270C**
	77	**(45 - 135)**	**0.13**	**(0-40)**	**SW846 8270C**
Fluorene	**76**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**2.3**	**(0-40)**	**SW846 8270C**
Hexachlorobenzene	**76**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**2.2**	**(0-40)**	**SW846 8270C**
Hexachlorobutadiene	**69**	**(45 - 135)**			**SW846 8270C**
	69	**(45 - 135)**	**0.08**	**(0-40)**	**SW846 8270C**
Hexachlorocyclopenta- diene	**44 a**	**(45 - 135)**			**SW846 8270C**
	46	**(45 - 135)**	**4.8**	**(0-40)**	**SW846 8270C**
Hexachloroethane	**69**	**(45 - 135)**			**SW846 8270C**
	68	**(45 - 135)**	**1.1**	**(0-40)**	**SW846 8270C**
Indeno(1,2,3-cd)pyrene	**69**	**(45 - 135)**			**SW846 8270C**
	72	**(45 - 135)**	**4.0**	**(0-40)**	**SW846 8270C**
Isophorone	**72**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**2.6**	**(0-40)**	**SW846 8270C**
2-Methylnaphthalene	**86**	**(45 - 135)**			**SW846 8270C**
	86	**(45 - 135)**	**0.07**	**(0-40)**	**SW846 8270C**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2-Methylphenol	**75**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**1.2**	**(0-40)**	**SW846 8270C**
4-Methylphenol	**78**	**(45 - 135)**			**SW846 8270C**
	77	**(45 - 135)**	**0.96**	**(0-40)**	**SW846 8270C**
Naphthalene	**71**	**(45 - 135)**			**SW846 8270C**
	72	**(45 - 135)**	**0.83**	**(0-40)**	**SW846 8270C**
2-Nitroaniline	**68**	**(45 - 135)**			**SW846 8270C**
	69	**(45 - 135)**	**1.1**	**(0-40)**	**SW846 8270C**
3-Nitroaniline	**65**	**(45 - 135)**			**SW846 8270C**
	60	**(45 - 135)**	**8.5**	**(0-50)**	**SW846 8270C**
4-Nitroaniline	**70**	**(45 - 135)**			**SW846 8270C**
	67	**(45 - 135)**	**4.4**	**(0-40)**	**SW846 8270C**
Nitrobenzene	**75**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**1.4**	**(0-40)**	**SW846 8270C**
2-Nitrophenol	**79**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**0.57**	**(0-40)**	**SW846 8270C**
N-Nitrosodiphenylamine	**66**	**(45 - 135)**			**SW846 8270C**
	65	**(45 - 135)**	**1.9**	**(0-40)**	**SW846 8270C**
Phenanthrene	**75**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**0.82**	**(0-40)**	**SW846 8270C**
2,4,5-Trichloro- phenol	**82**	**(45 - 135)**			**SW846 8270C**
	78	**(45 - 135)**	**4.6**	**(0-40)**	**SW846 8270C**
2,4,6-Trichloro- phenol	**79**	**(45 - 135)**			**SW846 8270C**
	77	**(45 - 135)**	**2.1**	**(0-40)**	**SW846 8270C**
Benzoic acid	**64**	**(45 - 135)**			**SW846 8270C**
	62	**(45 - 135)**	**2.8**	**(0-40)**	**SW846 8270C**
Benzyl alcohol	**80**	**(45 - 135)**			**SW846 8270C**
	82	**(45 - 135)**	**2.9**	**(0-40)**	**SW846 8270C**
Atrazine	**79**	**(45 - 135)**			**SW846 8270C**
	79	**(45 - 135)**	**0.08**	**(0-40)**	**SW846 8270C**
Benzaldehyde	**160 a**	**(45 - 135)**			**SW846 8270C**
	147 a	**(45 - 135)**	**8.4**	**(0-40)**	**SW846 8270C**
Acetophenone	**77**	**(45 - 135)**			**SW846 8270C**
	76	**(45 - 135)**	**1.4**	**(0-40)**	**SW846 8270C**
1,1'-Biphenyl	**75**	**(45 - 135)**			**SW846 8270C**
	74	**(45 - 135)**	**1.2**	**(0-40)**	**SW846 8270C**
Caprolactam	**74**	**(45 - 135)**			**SW846 8270C**
	75	**(45 - 135)**	**1.5**	**(0-40)**	**SW846 8270C**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	70	(50 - 150)
	70	(50 - 150)
2-Fluorobiphenyl	76	(50 - 150)
	73	(50 - 150)
Terphenyl-d14	81	(50 - 150)
	82	(50 - 150)
Phenol-d5	79	(50 - 150)
	78	(50 - 150)
2-Fluorophenol	76	(50 - 150)
	75	(50 - 150)
2,4,6-Tribromophenol	86	(50 - 150)
	83	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/08/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1098032
Dilution Factor: 1 **Initial Wgt/Vol:** 490 mL **Final Wgt/Vol..:** 2 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,2,4-Trichloro-benzene	ND	41	28	ug/L	68		SW846 8270C
	ND	41	28	ug/L	68	1.1	SW846 8270C
Acenaphthene	ND	41	31	ug/L	76		SW846 8270C
	ND	41	31	ug/L	75	0.78	SW846 8270C
2,4-Dinitrotoluene	ND	41	32	ug/L	80		SW846 8270C
	ND	41	32	ug/L	78	1.9	SW846 8270C
Pyrene	ND	41	29	ug/L	72		SW846 8270C
	ND	41	30	ug/L	73	1.8	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	41	27	ug/L	67		SW846 8270C
	ND	41	28	ug/L	68	1.5	SW846 8270C
1,4-Dichlorobenzene	ND	41	30	ug/L	73		SW846 8270C
	ND	41	30	ug/L	72	0.73	SW846 8270C
Pentachlorophenol	ND	41	29	ug/L	71		SW846 8270C
	ND	41	29	ug/L	70	1.9	SW846 8270C
Phenol	ND	41	32	ug/L	78		SW846 8270C
	ND	41	32	ug/L	78	0.11	SW846 8270C
2-Chlorophenol	ND	41	32	ug/L	78		SW846 8270C
	ND	41	32	ug/L	77	0.30	SW846 8270C
4-Chloro-3-methylphenol	ND	41	33	ug/L	81		SW846 8270C
	ND	41	34	ug/L	83	2.7	SW846 8270C
4-Nitrophenol	ND	41	34	ug/L	83		SW846 8270C
	ND	41	35	ug/L	85	2.1	SW846 8270C
Acenaphthylene	ND	41	30	ug/L	74		SW846 8270C
	ND	41	30	ug/L	73	1.7	SW846 8270C
Anthracene	ND	41	30	ug/L	73		SW846 8270C
	ND	41	29	ug/L	72	1.5	SW846 8270C
Benzo(a)anthracene	ND	41	27	ug/L	67		SW846 8270C
	ND	41	28	ug/L	69	3.6	SW846 8270C
Benzo(b)fluoranthene	ND	41	26	ug/L	63		SW846 8270C
	ND	41	27	ug/L	67	6.7	SW846 8270C
Benzo(k)fluoranthene	ND	41	32	ug/L	78		SW846 8270C
	ND	41	32	ug/L	79	0.98	SW846 8270C
Benzo(ghi)perylene	ND	41	29	ug/L	70		SW846 8270C
	ND	41	29	ug/L	72	2.9	SW846 8270C
Benzo(a)pyrene	ND	41	24	ug/L	59		SW846 8270C
	ND	41	25	ug/L	61	3.9	SW846 8270C

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
bis(2-Chloroethoxy) methane	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**0.38**	**SW846 8270C**
bis(2-Chloroethyl)-ether	**ND**	**41**	**31**	**ug/L**	**77**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**74**	**2.7**	**SW846 8270C**
bis(2-Chloroisopropyl) ether	**ND**	**41**	**30**	**ug/L**	**73**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**73**	**0.05**	**SW846 8270C**
bis(2-Ethylhexyl) phthalate	**1.2**	**41**	**29**	**ug/L**	**67**		**SW846 8270C**
	1.2	**41**	**31**	**ug/L**	**73**	**7.8**	**SW846 8270C**
4-Bromophenyl phenyl ether	**ND**	**41**	**32**	**ug/L**	**80**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**77**	**3.7**	**SW846 8270C**
Butyl benzyl phthalate	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**33**	**ug/L**	**80**	**5.2**	**SW846 8270C**
Carbazole	**ND**	**41**	**31**	**ug/L**	**76**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**1.2**	**SW846 8270C**
4-Chloroaniline	**ND**	**41**	**22**	**ug/L**	**53**		**SW846 8270C**
	ND	**41**	**22**	**ug/L**	**54**	**1.4**	**SW846 8270C**
2-Chloronaphthalene	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**74**	**0.98**	**SW846 8270C**
4-Chlorophenyl phenyl ether	**ND**	**41**	**32**	**ug/L**	**79**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**77**	**1.8**	**SW846 8270C**
Chrysene	**ND**	**41**	**29**	**ug/L**	**70**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**72**	**3.4**	**SW846 8270C**
Dibenz(a,h)anthracene	**ND**	**41**	**29**	**ug/L**	**70**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**72**	**2.3**	**SW846 8270C**
Dibenzofuran	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**0.46**	**SW846 8270C**
Di-n-butyl phthalate	**ND**	**41**	**32**	**ug/L**	**79**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**78**	**1.6**	**SW846 8270C**
1,2-Dichlorobenzene	**ND**	**41**	**30**	**ug/L**	**74**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**75**	**1.2**	**SW846 8270C**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,3-Dichlorobenzene	ND	41	28	ug/L	69		SW846 8270C
	ND	41	29	ug/L	70	1.3	SW846 8270C
3,3'-Dichlorobenzidine	ND	41	8.4	ug/L	20 a		SW846 8270C
	ND	41	8.5	ug/L	21 a	1.5	SW846 8270C
2,4-Dichlorophenol	ND	41	32	ug/L	80		SW846 8270C
	ND	41	33	ug/L	80	0.15	SW846 8270C
Diethyl phthalate	ND	41	32	ug/L	79		SW846 8270C
	ND	41	31	ug/L	76	2.6	SW846 8270C
2,4-Dimethylphenol	ND	41	28	ug/L	67		SW846 8270C
	ND	41	28	ug/L	69	2.4	SW846 8270C
Dimethyl phthalate	ND	41	32	ug/L	78		SW846 8270C
	ND	41	31	ug/L	75	3.0	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	41	30	ug/L	73		SW846 8270C
	ND	41	31	ug/L	75	2.1	SW846 8270C
2,4-Dinitrophenol	ND	41	21	ug/L	52		SW846 8270C
	ND	41	21	ug/L	52	1.0	SW846 8270C
2,6-Dinitrotoluene	ND	41	33	ug/L	80		SW846 8270C
	ND	41	32	ug/L	79	1.3	SW846 8270C
Di-n-octyl phthalate	ND	41	24	ug/L	60		SW846 8270C
	ND	41	25	ug/L	62	3.9	SW846 8270C
Fluoranthene	ND	41	31	ug/L	77		SW846 8270C
	ND	41	31	ug/L	77	0.13	SW846 8270C
Fluorene	ND	41	31	ug/L	76		SW846 8270C
	ND	41	31	ug/L	75	2.3	SW846 8270C
Hexachlorobenzene	ND	41	31	ug/L	76		SW846 8270C
	ND	41	32	ug/L	78	2.2	SW846 8270C
Hexachlorobutadiene	ND	41	28	ug/L	69		SW846 8270C
	ND	41	28	ug/L	69	0.08	SW846 8270C
Hexachlorocyclopenta-diene	ND	41	18	ug/L	44 a		SW846 8270C
	ND	41	19	ug/L	46	4.8	SW846 8270C
Hexachloroethane	ND	41	28	ug/L	69		SW846 8270C
	ND	41	28	ug/L	68	1.1	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	41	28	ug/L	69		SW846 8270C
	ND	41	30	ug/L	72	4.0	SW846 8270C
Isophorone	ND	41	29	ug/L	72		SW846 8270C
	ND	41	30	ug/L	74	2.6	SW846 8270C
2-Methylnaphthalene	ND	41	35	ug/L	86		SW846 8270C
	ND	41	35	ug/L	86	0.07	SW846 8270C

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
2-Methylphenol	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**1.2**	**SW846 8270C**
4-Methylphenol	**ND**	**82**	**63**	**ug/L**	**78**		**SW846 8270C**
	ND	**82**	**63**	**ug/L**	**77**	**0.96**	**SW846 8270C**
Naphthalene	**ND**	**41**	**29**	**ug/L**	**71**		**SW846 8270C**
	ND	**41**	**29**	**ug/L**	**72**	**0.83**	**SW846 8270C**
2-Nitroaniline	**ND**	**41**	**28**	**ug/L**	**68**		**SW846 8270C**
	ND	**41**	**28**	**ug/L**	**69**	**1.1**	**SW846 8270C**
3-Nitroaniline	**ND**	**41**	**27**	**ug/L**	**65**		**SW846 8270C**
	ND	**41**	**25**	**ug/L**	**60**	**8.5**	**SW846 8270C**
4-Nitroaniline	**ND**	**41**	**28**	**ug/L**	**70**		**SW846 8270C**
	ND	**41**	**27**	**ug/L**	**67**	**4.4**	**SW846 8270C**
Nitrobenzene	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**1.4**	**SW846 8270C**
2-Nitrophenol	**ND**	**41**	**32**	**ug/L**	**79**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**79**	**0.57**	**SW846 8270C**
N-Nitrosodiphenylamine	**ND**	**41**	**27**	**ug/L**	**66**		**SW846 8270C**
	ND	**41**	**27**	**ug/L**	**65**	**1.9**	**SW846 8270C**
Phenanthrene	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**74**	**0.82**	**SW846 8270C**
2,4,5-Trichloro- phenol	**ND**	**41**	**33**	**ug/L**	**82**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**78**	**4.6**	**SW846 8270C**
2,4,6-Trichloro- phenol	**ND**	**41**	**32**	**ug/L**	**79**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**77**	**2.1**	**SW846 8270C**
Benzoic acid	**ND**	**41**	**26**	**ug/L**	**64**		**SW846 8270C**
	ND	**41**	**25**	**ug/L**	**62**	**2.8**	**SW846 8270C**
Benzyl alcohol	**ND**	**41**	**33**	**ug/L**	**80**		**SW846 8270C**
	ND	**41**	**34**	**ug/L**	**82**	**2.9**	**SW846 8270C**
Atrazine	**ND**	**41**	**32**	**ug/L**	**79**		**SW846 8270C**
	ND	**41**	**32**	**ug/L**	**79**	**0.08**	**SW846 8270C**
Benzaldehyde	**ND**	**41**	**65**	**ug/L**	**160 a**		**SW846 8270C**
	ND	**41**	**60**	**ug/L**	**147 a**	**8.4**	**SW846 8270C**
Acetophenone	**ND**	**41**	**32**	**ug/L**	**77**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**76**	**1.4**	**SW846 8270C**
1,1'-Biphenyl	**ND**	**41**	**31**	**ug/L**	**75**		**SW846 8270C**
	ND	**41**	**30**	**ug/L**	**74**	**1.2**	**SW846 8270C**
Caprolactam	**ND**	**41**	**30**	**ug/L**	**74**		**SW846 8270C**
	ND	**41**	**31**	**ug/L**	**75**	**1.5**	**SW846 8270C**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AF-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AG-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	70	(50 - 150)
	70	(50 - 150)
2-Fluorobiphenyl	76	(50 - 150)
	73	(50 - 150)
Terphenyl-d14	81	(50 - 150)
	82	(50 - 150)
Phenol-d5	79	(50 - 150)
	78	(50 - 150)
2-Fluorophenol	76	(50 - 150)
	75	(50 - 150)
2,4,6-Tribromophenol	86	(50 - 150)
	83	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Lot/SDG Number: **A1D070566**

Sample Control Chain of Custody - TAL North Canton
GC/MS Semivolatiles

Lot Number	Work Order	Analysis Type	Prep Date	Prep Analyst	Date of Transfer	Transferred By	Analysis Date	Analyst
A1D070566-011	MGPCC1AC	Base/Neutrals and Acids (8270C)	04/08/11	Steve Earle	04/08/11	Steve Earle	04/19/11	John Gruber

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PESTICIDE DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

GC Semivolatiles

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1CM **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
alpha-BHC	ND	0.030	ug/L
beta-BHC	**0.017 J**	**0.030**	**ug/L**
delta-BHC	ND	0.030	ug/L
gamma-BHC (Lindane)	ND	0.030	ug/L
Heptachlor	ND	0.030	ug/L
Aldrin	ND	0.030	ug/L
Heptachlor epoxide	ND	0.030	ug/L
Endosulfan I	ND	0.025	ug/L
Dieldrin	ND	0.030	ug/L
4,4'-DDE	ND	0.030	ug/L
Endrin	ND	0.030	ug/L
Endosulfan II	ND	0.025	ug/L
4,4'-DDD	ND	0.030	ug/L
Endosulfan sulfate	ND	0.030	ug/L
4,4'-DDT	ND	0.030	ug/L
Methoxychlor	ND	0.10	ug/L
Endrin ketone	ND	0.030	ug/L
Endrin aldehyde	ND	0.030	ug/L
alpha-Chlordane	ND	0.030	ug/L
gamma-Chlordane	ND	0.030	ug/L
Toxaphene	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	85	(50 - 150)
Decachlorobiphenyl	65	(50 - 150)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGR9L1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D090000-014

Prep Date.....: 04/09/11 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/17/11 **Prep Batch #...:** 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
alpha-BHC	ND	0.030	ug/L	SW846 8081A
beta-BHC	ND	0.030	ug/L	SW846 8081A
delta-BHC	ND	0.030	ug/L	SW846 8081A
gamma-BHC (Lindane)	ND	0.030	ug/L	SW846 8081A
Heptachlor	ND	0.030	ug/L	SW846 8081A
Aldrin	ND	0.030	ug/L	SW846 8081A
Heptachlor epoxide	ND	0.030	ug/L	SW846 8081A
Endosulfan I	ND	0.025	ug/L	SW846 8081A
Dieldrin	ND	0.030	ug/L	SW846 8081A
4,4'-DDE	ND	0.030	ug/L	SW846 8081A
Endrin	ND	0.030	ug/L	SW846 8081A
Endosulfan II	ND	0.025	ug/L	SW846 8081A
4,4'-DDD	ND	0.030	ug/L	SW846 8081A
Endosulfan sulfate	ND	0.030	ug/L	SW846 8081A
4,4'-DDT	ND	0.030	ug/L	SW846 8081A
Methoxychlor	ND	0.10	ug/L	SW846 8081A
Endrin ketone	ND	0.030	ug/L	SW846 8081A
Endrin aldehyde	ND	0.030	ug/L	SW846 8081A
alpha-Chlordane	ND	0.030	ug/L	SW846 8081A
gamma-Chlordane	ND	0.030	ug/L	SW846 8081A
Toxaphene	ND	2.0	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(50 - 150)
Decachlorobiphenyl	72	(50 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGR9L1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D090000-014
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
alpha-BHC	**96**	**(44 - 137)**	**SW846 8081A**
beta-BHC	**92**	**(50 - 135)**	**SW846 8081A**
delta-BHC	**96**	**(58 - 160)**	**SW846 8081A**
gamma-BHC (Lindane)	**98**	**(58 - 127)**	**SW846 8081A**
Heptachlor	**89**	**(48 - 150)**	**SW846 8081A**
Aldrin	**88**	**(53 - 128)**	**SW846 8081A**
Heptachlor epoxide	**90**	**(50 - 127)**	**SW846 8081A**
Endosulfan I	**54**	**(50 - 160)**	**SW846 8081A**
Dieldrin	**91**	**(50 - 124)**	**SW846 8081A**
4,4'-DDE	**92**	**(50 - 130)**	**SW846 8081A**
Endrin	**91**	**(50 - 137)**	**SW846 8081A**
Endosulfan II	**61**	**(50 - 144)**	**SW846 8081A**
4,4'-DDD	**100**	**(50 - 137)**	**SW846 8081A**
Endosulfan sulfate	**91**	**(50 - 160)**	**SW846 8081A**
4,4'-DDT	**92**	**(50 - 145)**	**SW846 8081A**
Methoxychlor	**94**	**(50 - 160)**	**SW846 8081A**
Endrin ketone	**87**	**(50 - 150)**	**SW846 8081A**
Endrin aldehyde	**72**	**(30 - 160)**	**SW846 8081A**
alpha-Chlordane	**89**	**(50 - 122)**	**SW846 8081A**
gamma-Chlordane	**92**	**(50 - 130)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	86	(50 - 150)
Decachlorobiphenyl	40 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGR9L1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D090000-014
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
alpha-BHC	**1.0**	**0.96**	**ug/L**	**96**	**SW846 8081A**
beta-BHC	**1.0**	**0.92**	**ug/L**	**92**	**SW846 8081A**
delta-BHC	**1.0**	**0.96**	**ug/L**	**96**	**SW846 8081A**
gamma-BHC (Lindane)	**1.0**	**0.98**	**ug/L**	**98**	**SW846 8081A**
Heptachlor	**1.0**	**0.89**	**ug/L**	**89**	**SW846 8081A**
Aldrin	**1.0**	**0.88**	**ug/L**	**88**	**SW846 8081A**
Heptachlor epoxide	**1.0**	**0.90**	**ug/L**	**90**	**SW846 8081A**
Endosulfan I	**1.0**	**0.54**	**ug/L**	**54**	**SW846 8081A**
Dieldrin	**1.0**	**0.91**	**ug/L**	**91**	**SW846 8081A**
4,4'-DDE	**1.0**	**0.92**	**ug/L**	**92**	**SW846 8081A**
Endrin	**1.0**	**0.91**	**ug/L**	**91**	**SW846 8081A**
Endosulfan II	**1.0**	**0.61**	**ug/L**	**61**	**SW846 8081A**
4,4'-DDD	**1.0**	**1.0**	**ug/L**	**100**	**SW846 8081A**
Endosulfan sulfate	**1.0**	**0.91**	**ug/L**	**91**	**SW846 8081A**
4,4'-DDT	**1.0**	**0.92**	**ug/L**	**92**	**SW846 8081A**
Methoxychlor	**1.0**	**0.94**	**ug/L**	**94**	**SW846 8081A**
Endrin ketone	**1.0**	**0.87**	**ug/L**	**87**	**SW846 8081A**
Endrin aldehyde	**1.0**	**0.72**	**ug/L**	**72**	**SW846 8081A**
alpha-Chlordane	**1.0**	**0.89**	**ug/L**	**89**	**SW846 8081A**
gamma-Chlordane	**1.0**	**0.92**	**ug/L**	**92**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	86	(50 - 150)
Decachlorobiphenyl	40 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AU-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
alpha-BHC	101	(50 - 150)			SW846 8081A
	94	(50 - 150)	6.8	(0-50)	SW846 8081A
beta-BHC	99	(50 - 150)			SW846 8081A
	91	(50 - 150)	7.6	(0-50)	SW846 8081A
delta-BHC	102	(50 - 150)			SW846 8081A
	95	(50 - 150)	7.2	(0-50)	SW846 8081A
gamma-BHC (Lindane)	101	(50 - 150)			SW846 8081A
	95	(50 - 150)	7.0	(0-50)	SW846 8081A
Heptachlor	94	(50 - 150)			SW846 8081A
	90	(50 - 150)	4.5	(0-50)	SW846 8081A
Aldrin	92	(50 - 150)			SW846 8081A
	87	(50 - 150)	6.5	(0-50)	SW846 8081A
Heptachlor epoxide	92	(50 - 150)			SW846 8081A
	86	(50 - 150)	6.2	(0-50)	SW846 8081A
Endosulfan I	61	(50 - 150)			SW846 8081A
	57	(50 - 150)	6.3	(0-50)	SW846 8081A
Dieldrin	98	(50 - 150)			SW846 8081A
	91	(50 - 150)	6.8	(0-50)	SW846 8081A
4,4'-DDE	100	(50 - 150)			SW846 8081A
	94	(50 - 150)	6.2	(0-50)	SW846 8081A
Endrin	98	(50 - 150)			SW846 8081A
	92	(50 - 150)	6.4	(0-50)	SW846 8081A
Endosulfan II	67	(50 - 150)			SW846 8081A
	65	(50 - 150)	4.3	(0-50)	SW846 8081A
4,4'-DDD	106	(50 - 150)			SW846 8081A
	101	(50 - 150)	4.4	(0-50)	SW846 8081A
Endosulfan sulfate	98	(50 - 150)			SW846 8081A
	94	(50 - 150)	4.0	(0-50)	SW846 8081A
4,4'-DDT	103	(50 - 150)			SW846 8081A
	99	(50 - 150)	3.4	(0-50)	SW846 8081A
Methoxychlor	104	(50 - 150)			SW846 8081A
	103	(50 - 150)	0.91	(0-50)	SW846 8081A
Endrin ketone	94	(50 - 150)			SW846 8081A
	91	(50 - 150)	3.2	(0-50)	SW846 8081A
Endrin aldehyde	78	(50 - 150)			SW846 8081A
	75	(50 - 150)	4.4	(0-50)	SW846 8081A
alpha-Chlordane	95	(50 - 150)			SW846 8081A
	89	(50 - 150)	6.6	(0-50)	SW846 8081A
gamma-Chlordane	98	(50 - 150)			SW846 8081A
	91	(50 - 150)	7.3	(0-50)	SW846 8081A

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AU-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	91	(50 - 150)
	85	(50 - 150)
Decachlorobiphenyl	81	(50 - 150)
	86	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AU-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
alpha-BHC	ND	2.0	2.0	ug/L	101		SW846 8081A
	ND	2.0	1.9	ug/L	94	6.8	SW846 8081A
beta-BHC	ND	2.0	2.0	ug/L	99		SW846 8081A
	ND	2.0	1.8	ug/L	91	7.6	SW846 8081A
delta-BHC	ND	2.0	2.0	ug/L	102		SW846 8081A
	ND	2.0	1.9	ug/L	95	7.2	SW846 8081A
gamma-BHC (Lindane)	ND	2.0	2.0	ug/L	101		SW846 8081A
	ND	2.0	1.9	ug/L	95	7.0	SW846 8081A
Heptachlor	ND	2.0	1.9	ug/L	94		SW846 8081A
	ND	2.0	1.8	ug/L	90	4.5	SW846 8081A
Aldrin	ND	2.0	1.8	ug/L	92		SW846 8081A
	ND	2.0	1.7	ug/L	87	6.5	SW846 8081A
Heptachlor epoxide	ND	2.0	1.8	ug/L	92		SW846 8081A
	ND	2.0	1.7	ug/L	86	6.2	SW846 8081A
Endosulfan I	ND	2.0	1.2	ug/L	61		SW846 8081A
	ND	2.0	1.1	ug/L	57	6.3	SW846 8081A
Dieldrin	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.8	ug/L	91	6.8	SW846 8081A
4,4'-DDE	ND	2.0	2.0	ug/L	100		SW846 8081A
	ND	2.0	1.9	ug/L	94	6.2	SW846 8081A
Endrin	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.8	ug/L	92	6.4	SW846 8081A
Endosulfan II	ND	2.0	1.3	ug/L	67		SW846 8081A
	ND	2.0	1.3	ug/L	65	4.3	SW846 8081A
4,4'-DDD	ND	2.0	2.1	ug/L	106		SW846 8081A
	ND	2.0	2.0	ug/L	101	4.4	SW846 8081A
Endosulfan sulfate	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.9	ug/L	94	4.0	SW846 8081A
4,4'-DDT	ND	2.0	2.1	ug/L	103		SW846 8081A
	ND	2.0	2.0	ug/L	99	3.4	SW846 8081A
Methoxychlor	ND	2.0	2.1	ug/L	104		SW846 8081A
	ND	2.0	2.1	ug/L	103	0.91	SW846 8081A
Endrin ketone	ND	2.0	1.9	ug/L	94		SW846 8081A
	ND	2.0	1.8	ug/L	91	3.2	SW846 8081A
Endrin aldehyde	ND	2.0	1.6	ug/L	78		SW846 8081A
	ND	2.0	1.5	ug/L	75	4.4	SW846 8081A
alpha-Chlordane	ND	2.0	1.9	ug/L	95		SW846 8081A
	ND	2.0	1.8	ug/L	89	6.6	SW846 8081A
gamma-Chlordane	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.8	ug/L	91	7.3	SW846 8081A

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MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AU-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	91	(50 - 150)
	85	(50 - 150)
Decachlorobiphenyl	81	(50 - 150)
	86	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AU-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
alpha-BHC	97	(50 - 150)			SW846 8081A
	92	(50 - 150)	5.1	(0-50)	SW846 8081A
beta-BHC	96	(50 - 150)			SW846 8081A
	87	(50 - 150)	9.1	(0-50)	SW846 8081A
delta-BHC	99	(50 - 150)			SW846 8081A
	92	(50 - 150)	7.8	(0-50)	SW846 8081A
gamma-BHC (Lindane)	102	(50 - 150)			SW846 8081A
	96	(50 - 150)	6.7	(0-50)	SW846 8081A
Heptachlor	85	(50 - 150)			SW846 8081A
	81	(50 - 150)	5.2	(0-50)	SW846 8081A
Aldrin	86	(50 - 150)			SW846 8081A
	82	(50 - 150)	4.7	(0-50)	SW846 8081A
Heptachlor epoxide	95	(50 - 150)			SW846 8081A
	89	(50 - 150)	6.5	(0-50)	SW846 8081A
Endosulfan I	61	(50 - 150)			SW846 8081A
	55	(50 - 150)	9.6	(0-50)	SW846 8081A
Dieldrin	98	(50 - 150)			SW846 8081A
	89	(50 - 150)	9.4	(0-50)	SW846 8081A
4,4'-DDE	91	(50 - 150)			SW846 8081A
	84	(50 - 150)	8.1	(0-50)	SW846 8081A
Endrin	100	(50 - 150)			SW846 8081A
	90	(50 - 150)	11	(0-50)	SW846 8081A
Endosulfan II	66	(50 - 150)			SW846 8081A
	61	(50 - 150)	8.2	(0-50)	SW846 8081A
4,4'-DDD	106	(50 - 150)			SW846 8081A
	95	(50 - 150)	11	(0-50)	SW846 8081A
Endosulfan sulfate	100	(50 - 150)			SW846 8081A
	89	(50 - 150)	11	(0-50)	SW846 8081A
4,4'-DDT	98	(50 - 150)			SW846 8081A
	87	(50 - 150)	12	(0-50)	SW846 8081A
Methoxychlor	103	(50 - 150)			SW846 8081A
	92	(50 - 150)	12	(0-50)	SW846 8081A
Endrin ketone	96	(50 - 150)			SW846 8081A
	86	(50 - 150)	10	(0-50)	SW846 8081A
Endrin aldehyde	78	(50 - 150)			SW846 8081A
	71	(50 - 150)	9.6	(0-50)	SW846 8081A
alpha-Chlordane	92	(50 - 150)			SW846 8081A
	84	(50 - 150)	9.0	(0-50)	SW846 8081A
gamma-Chlordane	95	(50 - 150)			SW846 8081A
	88	(50 - 150)	7.8	(0-50)	SW846 8081A

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AU-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	82	(50 - 150)
	80	(50 - 150)
Decachlorobiphenyl	31 *	(50 - 150)
	28 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AU-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
alpha-BHC	ND	2.0	1.9	ug/L	97		SW846 8081A
	ND	2.0	1.8	ug/L	92	5.1	SW846 8081A
beta-BHC	ND	2.0	1.9	ug/L	96		SW846 8081A
	ND	2.0	1.7	ug/L	87	9.1	SW846 8081A
delta-BHC	ND	2.0	2.0	ug/L	99		SW846 8081A
	ND	2.0	1.8	ug/L	92	7.8	SW846 8081A
gamma-BHC (Lindane)	ND	2.0	2.0	ug/L	102		SW846 8081A
	ND	2.0	1.9	ug/L	96	6.7	SW846 8081A
Heptachlor	ND	2.0	1.7	ug/L	85		SW846 8081A
	ND	2.0	1.6	ug/L	81	5.2	SW846 8081A
Aldrin	ND	2.0	1.7	ug/L	86		SW846 8081A
	ND	2.0	1.6	ug/L	82	4.7	SW846 8081A
Heptachlor epoxide	ND	2.0	1.9	ug/L	95		SW846 8081A
	ND	2.0	1.8	ug/L	89	6.5	SW846 8081A
Endosulfan I	ND	2.0	1.2	ug/L	61		SW846 8081A
	ND	2.0	1.1	ug/L	55	9.6	SW846 8081A
Dieldrin	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.8	ug/L	89	9.4	SW846 8081A
4,4'-DDE	ND	2.0	1.8	ug/L	91		SW846 8081A
	ND	2.0	1.7	ug/L	84	8.1	SW846 8081A
Endrin	ND	2.0	2.0	ug/L	100		SW846 8081A
	ND	2.0	1.8	ug/L	90	11	SW846 8081A
Endosulfan II	ND	2.0	1.3	ug/L	66		SW846 8081A
	ND	2.0	1.2	ug/L	61	8.2	SW846 8081A
4,4'-DDD	ND	2.0	2.1	ug/L	106		SW846 8081A
	ND	2.0	1.9	ug/L	95	11	SW846 8081A
Endosulfan sulfate	ND	2.0	2.0	ug/L	100		SW846 8081A
	ND	2.0	1.8	ug/L	89	11	SW846 8081A
4,4'-DDT	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.7	ug/L	87	12	SW846 8081A
Methoxychlor	ND	2.0	2.1	ug/L	103		SW846 8081A
	ND	2.0	1.8	ug/L	92	12	SW846 8081A
Endrin ketone	ND	2.0	1.9	ug/L	96		SW846 8081A
	ND	2.0	1.7	ug/L	86	10	SW846 8081A
Endrin aldehyde	ND	2.0	1.6	ug/L	78		SW846 8081A
	ND	2.0	1.4	ug/L	71	9.6	SW846 8081A
alpha-Chlordane	ND	2.0	1.8	ug/L	92		SW846 8081A
	ND	2.0	1.7	ug/L	84	9.0	SW846 8081A
gamma-Chlordane	ND	2.0	1.9	ug/L	95		SW846 8081A
	ND	2.0	1.8	ug/L	88	7.8	SW846 8081A

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MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AU-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	82	(50 - 150)
	80	(50 - 150)
Decachlorobiphenyl	31 *	(50 - 150)
	28 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

Lot/SDG Number: **A1D070566**

Sample Control Chain of Custody - TAL North Canton
GC Semivolatiles

Lot Number	Work Order	Analysis Type	Prep Date	Prep Analyst	Date of Transfer	Transferred By	Analysis Date	Analyst
A1D070566-011	MGPCC1CM	Pesticides (8081A)	04/09/11	Alex Robbins	04/11/11	Chris Coast	04/17/11	Carolynne Roach

TestAmerica
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POLYCHLORINATED BIPHENYLS DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

GC Semivolatiles

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1AF **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	0.50	ug/L
Aroclor 1221	ND	0.50	ug/L
Aroclor 1232	ND	0.50	ug/L
Aroclor 1242	ND	0.50	ug/L
Aroclor 1248	ND	0.50	ug/L
Aroclor 1254	ND	0.50	ug/L
Aroclor 1260	ND	0.50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	83	(50 - 150)
Decachlorobiphenyl	55	(50 - 150)

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGR9M1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D090000-015

Prep Date.....: 04/09/11 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/16/11 **Prep Batch #...:** 1099015
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	0.50	ug/L	SW846 8082
Aroclor 1221	ND	0.50	ug/L	SW846 8082
Aroclor 1232	ND	0.50	ug/L	SW846 8082
Aroclor 1242	ND	0.50	ug/L	SW846 8082
Aroclor 1248	ND	0.50	ug/L	SW846 8082
Aroclor 1254	ND	0.50	ug/L	SW846 8082
Aroclor 1260	ND	0.50	ug/L	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(50 - 150)
Decachlorobiphenyl	70	(50 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGR9M1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D090000-015
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Aroclor 1016	**84**	**(58 - 141)**	**SW846 8082**
Aroclor 1260	**83**	**(71 - 143)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	77	(50 - 150)
Decachlorobiphenyl	39 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGR9M1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D090000-015
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Aroclor 1016	**10**	**8.4**	**ug/L**	**84**	**SW846 8082**
Aroclor 1260	**10**	**8.3**	**ug/L**	**83**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	77	(50 - 150)
Decachlorobiphenyl	39 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AV-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AW-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**90**	**(50 - 150)**			**SW846 8082**
	89	**(50 - 150)**	**0.78**	**(0-50)**	**SW846 8082**
Aroclor 1260	**89**	**(50 - 150)**			**SW846 8082**
	91	**(50 - 150)**	**2.2**	**(0-50)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	85	(50 - 150)
	87	(50 - 150)
Decachlorobiphenyl	72	(50 - 150)
	74	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM7Q1AV-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AW-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	**ND**	**20**	**18**	**ug/L**	**90**		**SW846 8082**
	ND	**20**	**18**	**ug/L**	**89**	**0.78**	**SW846 8082**
Aroclor 1260	**ND**	**20**	**18**	**ug/L**	**89**		**SW846 8082**
	ND	**20**	**18**	**ug/L**	**91**	**2.2**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	85	(50 - 150)
	87	(50 - 150)
Decachlorobiphenyl	72	(50 - 150)
	74	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AV-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AW-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**91**	**(50 - 150)**			**SW846 8082**
	91	**(50 - 150)**	**0.0**	**(0-50)**	**SW846 8082**
Aroclor 1260	**81**	**(50 - 150)**			**SW846 8082**
	81	**(50 - 150)**	**0.0**	**(0-50)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	88	(50 - 150)
	88	(50 - 150)
Decachlorobiphenyl	45 *	(50 - 150)
	45 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D070566 **Work Order #...:** MGM891AV-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AW-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	**ND**	**20**	**18**	**ug/L**	**91**		**SW846 8082**
	ND	**20**	**18**	**ug/L**	**91**	**0.0**	**SW846 8082**
Aroclor 1260	**ND**	**20**	**16**	**ug/L**	**81**		**SW846 8082**
	ND	**20**	**16**	**ug/L**	**81**	**0.0**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	88	(50 - 150)
	88	(50 - 150)
Decachlorobiphenyl	45 *	(50 - 150)
	45 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

Lot/SDG Number: **A1D070566**

Sample Control Chain of Custody - TAL North Canton
GC Semivolatiles

Lot Number	Work Order	Analysis Type	Prep Date	Prep Analyst	Date of Transfer	Transferred By	Analysis Date	Analyst
A1D070566-011	MGPCC1AF	PCBs (8082)	04/09/11	Alex Robbins	04/11/11	Chris Coast	04/16/11	Lori Hass

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METALS DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

TOTAL Metals

Lot-Sample #...: A1D070566-011 **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1098019						
Silver	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1A4
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Aluminum	ND	50.0	ug/L	SW846 6020	04/08-04/11/11	MGPCC1AG
		Dilution Factor: 1		Analysis Time..: 20:24	Analyst ID.....: 000079	
		Instrument ID..: I8				
Arsenic	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1AQ
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Barium	ND	10.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1AU
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Beryllium	ND	1.0	ug/L	SW846 6020	04/08-04/11/11	MGPCC1AJ
		Dilution Factor: 1		Analysis Time..: 20:24	Analyst ID.....: 000079	
		Instrument ID..: I8				
Calcium	ND	1000	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1AV
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Cadmium	ND	0.50	ug/L	SW846 6020	04/08-04/11/11	MGPCC1AK
		Dilution Factor: 1		Analysis Time..: 20:24	Analyst ID.....: 000079	
		Instrument ID..: I8				
Cobalt	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1AW
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Chromium	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1A6
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Copper	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1AX
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				

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U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

TOTAL Metals

Lot-Sample #...: A1D070566-011 **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	ND	50.0	ug/L	SW846 6020	04/08-04/11/11	MGPCC1AL
		Dilution Factor: 1		Analysis Time..: 20:24	Analyst ID.....: 000079	
		Instrument ID..: I8				
Mercury	ND	0.20	ug/L	SW846 7470A	04/08-04/11/11	MGPCC1A7
		Dilution Factor: 1		Analysis Time..: 13:57	Analyst ID.....: 002260	
		Instrument ID..: H1				
Potassium	ND	1000	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1A3
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Magnesium	ND	1000	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1A0
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Manganese	ND	10.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1A1
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Sodium	ND	1000	ug/L	SW846 6020	04/08-04/11/11	MGPCC1AM
		Dilution Factor: 1		Analysis Time..: 20:24	Analyst ID.....: 000079	
		Instrument ID..: I8				
Nickel	ND	10.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1A2
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Lead	ND	3.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1AR
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Antimony	ND	2.0	ug/L	SW846 6020	04/08-04/11/11	MGPCC1AH
		Dilution Factor: 1		Analysis Time..: 20:24	Analyst ID.....: 000079	
		Instrument ID..: I8				
Selenium	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1AT
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				

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U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

TOTAL Metals

Lot-Sample #...: A1D070566-011 **Matrix.....:** WQ

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Thallium	ND	1.0	ug/L	SW846 6020	04/08-04/11/11	MGPCC1AN
		Dilution Factor: 1		Analysis Time..: 20:24	Analyst ID.....: 000079	
		Instrument ID..: I8				
Vanadium	ND	10.0	ug/L	SW846 6010B	04/08-04/14/11	MGPCC1A5
		Dilution Factor: 1		Analysis Time..: 18:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Zinc	**4.3 B,J**	**10.0**	**ug/L**	**SW846 6020**	**04/08-04/11/11**	**MGPCC1AP**
		Dilution Factor: 1		Analysis Time..: 20:24	Analyst ID.....: 000079	
		Instrument ID..: I8				

NOTE(S):

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A1D080000-019 **Prep Batch #...:** 1098019						
Aluminum	ND	50.0	ug/L	SW846 6020	04/08-04/11/11	MGPWP1AE
		Dilution Factor: 1				
		Analysis Time..: 18:09	Analyst ID.....: 000079	Instrument ID..: I8		
Antimony	ND	2.0	ug/L	SW846 6020	04/08-04/11/11	MGPWP1AJ
		Dilution Factor: 1				
		Analysis Time..: 18:09	Analyst ID.....: 000079	Instrument ID..: I8		
Arsenic	ND	5.0	ug/L	SW846 6010B	04/08-04/15/11	MGPWP1AN
		Dilution Factor: 1				
		Analysis Time..: 07:19	Analyst ID.....: 002260	Instrument ID..: I5		
Barium	ND	10.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AT
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Beryllium	ND	1.0	ug/L	SW846 6020	04/08-04/11/11	MGPWP1AF
		Dilution Factor: 1				
		Analysis Time..: 18:09	Analyst ID.....: 000079	Instrument ID..: I8		
Cadmium	ND	0.50	ug/L	SW846 6020	04/08-04/11/11	MGPWP1AG
		Dilution Factor: 1				
		Analysis Time..: 18:09	Analyst ID.....: 000079	Instrument ID..: I8		
Calcium	ND	1000	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AU
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Chromium	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AW
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Cobalt	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AV
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Copper	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AX
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Iron	ND	50.0	ug/L	SW846 6020	04/08-04/11/11	MGPWP1AH
		Dilution Factor: 1				
		Analysis Time..: 18:09	Analyst ID.....: 000079	Instrument ID..: I8		

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	ND	3.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AP
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Magnesium	ND	1000	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1A1
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Manganese	ND	10.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1A2
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Mercury	ND	0.20	ug/L	SW846 7470A	04/08-04/11/11	MGPWP1AD
		Dilution Factor: 1				
		Analysis Time..: 13:36	Analyst ID.....: 002260	Instrument ID..: H1		
Nickel	ND	10.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AA
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Potassium	ND	1000	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1A0
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Selenium	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AQ
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Silver	ND	5.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AR
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Sodium	ND	1000	ug/L	SW846 6020	04/08-04/11/11	MGPWP1AM
		Dilution Factor: 1				
		Analysis Time..: 18:09	Analyst ID.....: 000079	Instrument ID..: I8		
Thallium	ND	1.0	ug/L	SW846 6020	04/08-04/11/11	MGPWP1AL
		Dilution Factor: 1				
		Analysis Time..: 18:09	Analyst ID.....: 000079	Instrument ID..: I8		
Vanadium	ND	10.0	ug/L	SW846 6010B	04/08-04/14/11	MGPWP1AC
		Dilution Factor: 1				
		Analysis Time..: 16:15	Analyst ID.....: 002260	Instrument ID..: I5		
Zinc	**5.9 B**	**10.0**	**ug/L**	**SW846 6020**	**04/08-04/11/11**	**MGPWP1AK**
		Dilution Factor: 1				
		Analysis Time..: 18:09	Analyst ID.....: 000079	Instrument ID..: I8		

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D080000-019 **Prep Batch #...:** 1098019					
Nickel	99	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1A3
		Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260	
		Instrument ID..: I5			
Vanadium	99	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1A4
		Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260	
		Instrument ID..: I5			
Mercury	96	(80 - 120)	SW846 7470A	04/08-04/11/11	MGPWP1A5
		Dilution Factor: 1	Analysis Time..: 13:37	Analyst ID.....: 002260	
		Instrument ID..: H1			
Aluminum	99	(80 - 120)	SW846 6020	04/08-04/11/11	MGPWP1A6
		Dilution Factor: 1	Analysis Time..: 18:14	Analyst ID.....: 000079	
		Instrument ID..: I8			
Beryllium	101	(80 - 120)	SW846 6020	04/08-04/11/11	MGPWP1A7
		Dilution Factor: 1	Analysis Time..: 18:14	Analyst ID.....: 000079	
		Instrument ID..: I8			
Cadmium	106	(80 - 120)	SW846 6020	04/08-04/11/11	MGPWP1A8
		Dilution Factor: 1	Analysis Time..: 18:14	Analyst ID.....: 000079	
		Instrument ID..: I8			
Iron	101	(80 - 120)	SW846 6020	04/08-04/11/11	MGPWP1A9
		Dilution Factor: 1	Analysis Time..: 18:14	Analyst ID.....: 000079	
		Instrument ID..: I8			
Antimony	104	(80 - 120)	SW846 6020	04/08-04/11/11	MGPWP1CA
		Dilution Factor: 1	Analysis Time..: 18:14	Analyst ID.....: 000079	
		Instrument ID..: I8			
Zinc	113	(80 - 120)	SW846 6020	04/08-04/11/11	MGPWP1CC
		Dilution Factor: 1	Analysis Time..: 18:14	Analyst ID.....: 000079	
		Instrument ID..: I8			
Thallium	100	(80 - 120)	SW846 6020	04/08-04/11/11	MGPWP1CD
		Dilution Factor: 1	Analysis Time..: 18:14	Analyst ID.....: 000079	
		Instrument ID..: I8			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	114	(80 - 120)	SW846 6020	04/08-04/11/11	MGPWP1CE
	Dilution Factor: 1	Analysis Time..: 18:14	Analyst ID.....: 000079		
	Instrument ID..: I8				
Arsenic	97	(80 - 120)	SW846 6010B	04/08-04/15/11	MGPWP1CF
	Dilution Factor: 1	Analysis Time..: 07:25	Analyst ID.....: 002260		
	Instrument ID..: I5				
Lead	104	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CG
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				
Selenium	106	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CH
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				
Silver	90	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CJ
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				
Barium	100	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CK
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				
Calcium	97	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CL
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				
Cobalt	98	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CM
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				
Chromium	96	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CN
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				
Copper	98	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CP
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				
Potassium	93	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CQ
	Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260		
	Instrument ID..: I5				

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	99	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CR
		Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260	
		Instrument ID..: I5			
Manganese	105	(80 - 120)	SW846 6010B	04/08-04/14/11	MGPWP1CT
		Dilution Factor: 1	Analysis Time..: 16:21	Analyst ID.....: 002260	
		Instrument ID..: I5			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D080000-019 **Prep Batch #...:** 1098019							
Nickel	500	497	ug/L	99	SW846 6010B	04/08-04/14/11	MGPWP1A3
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Vanadium	500	493	ug/L	99	SW846 6010B	04/08-04/14/11	MGPWP1A4
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Mercury	5.0	4.8	ug/L	96	SW846 7470A	04/08-04/11/11	MGPWP1A5
			Dilution Factor: 1		Analysis Time..: 13:37	Analyst ID.....: 002260	
			Instrument ID..: H1				
Aluminum	10000	9920	ug/L	99	SW846 6020	04/08-04/11/11	MGPWP1A6
			Dilution Factor: 1		Analysis Time..: 18:14	Analyst ID.....: 000079	
			Instrument ID..: I8				
Beryllium	100	101	ug/L	101	SW846 6020	04/08-04/11/11	MGPWP1A7
			Dilution Factor: 1		Analysis Time..: 18:14	Analyst ID.....: 000079	
			Instrument ID..: I8				
Cadmium	100	106	ug/L	106	SW846 6020	04/08-04/11/11	MGPWP1A8
			Dilution Factor: 1		Analysis Time..: 18:14	Analyst ID.....: 000079	
			Instrument ID..: I8				
Iron	10000	10100	ug/L	101	SW846 6020	04/08-04/11/11	MGPWP1A9
			Dilution Factor: 1		Analysis Time..: 18:14	Analyst ID.....: 000079	
			Instrument ID..: I8				
Antimony	100	104	ug/L	104	SW846 6020	04/08-04/11/11	MGPWP1CA
			Dilution Factor: 1		Analysis Time..: 18:14	Analyst ID.....: 000079	
			Instrument ID..: I8				
Zinc	100	113	ug/L	113	SW846 6020	04/08-04/11/11	MGPWP1CC
			Dilution Factor: 1		Analysis Time..: 18:14	Analyst ID.....: 000079	
			Instrument ID..: I8				
Thallium	100	99.8	ug/L	100	SW846 6020	04/08-04/11/11	MGPWP1CD
			Dilution Factor: 1		Analysis Time..: 18:14	Analyst ID.....: 000079	
			Instrument ID..: I8				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	10000	11400	ug/L	114	SW846 6020	04/08-04/11/11	MGPWP1CE
			Dilution Factor: 1		Analysis Time..: 18:14	Analyst ID.....: 000079	
			Instrument ID..: I8				
Arsenic	2000	1940	ug/L	97	SW846 6010B	04/08-04/15/11	MGPWP1CF
			Dilution Factor: 1		Analysis Time..: 07:25	Analyst ID.....: 002260	
			Instrument ID..: I5				
Lead	500	522	ug/L	104	SW846 6010B	04/08-04/14/11	MGPWP1CG
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Selenium	2000	2110	ug/L	106	SW846 6010B	04/08-04/14/11	MGPWP1CH
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Silver	50.0	45.2	ug/L	90	SW846 6010B	04/08-04/14/11	MGPWP1CJ
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Barium	2000	2000	ug/L	100	SW846 6010B	04/08-04/14/11	MGPWP1CK
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Calcium	50000	48600	ug/L	97	SW846 6010B	04/08-04/14/11	MGPWP1CL
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Cobalt	500	490	ug/L	98	SW846 6010B	04/08-04/14/11	MGPWP1CM
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Chromium	200	193	ug/L	96	SW846 6010B	04/08-04/14/11	MGPWP1CN
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Copper	250	244	ug/L	98	SW846 6010B	04/08-04/14/11	MGPWP1CP
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Potassium	50000	46400	ug/L	93	SW846 6010B	04/08-04/14/11	MGPWP1CQ
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	50000	49700	ug/L	99	SW846 6010B	04/08-04/14/11	MGPWP1CR
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				
Manganese	500	524	ug/L	105	SW846 6010B	04/08-04/14/11	MGPWP1CT
			Dilution Factor: 1		Analysis Time..: 16:21	Analyst ID.....: 002260	
			Instrument ID..: I5				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D070402-017 **Prep Batch #...:** 1098019					
Aluminum	97	(75 - 125)	SW846 6020	04/08-04/11/11	MGM7R1AM
		Dilution Factor: 1	Analysis Time..: 19:06	Instrument ID..: I8	
		Analyst ID.....: 000079			
Antimony	102	(75 - 125)	SW846 6020	04/08-04/11/11	MGM7R1A2
		Dilution Factor: 1	Analysis Time..: 19:06	Instrument ID..: I8	
		Analyst ID.....: 000079			
Arsenic	101	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1CF
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Barium	107	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1CU
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Beryllium	99	(75 - 125)	SW846 6020	04/08-04/11/11	MGM7R1AQ
		Dilution Factor: 1	Analysis Time..: 19:06	Instrument ID..: I8	
		Analyst ID.....: 000079			
Cadmium	102	(75 - 125)	SW846 6020	04/08-04/11/11	MGM7R1AU
		Dilution Factor: 1	Analysis Time..: 19:06	Instrument ID..: I8	
		Analyst ID.....: 000079			
Calcium	107	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1CX
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Chromium	103	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1C5
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Cobalt	105	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1C2
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Copper	105	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1C8
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	98	(75 - 125)	SW846 6020	04/08-04/11/11	MGM7R1AX
		Dilution Factor: 1	Analysis Time..: 19:06	Instrument ID..: I8	
		Analyst ID.....: 000079			
Lead	110	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1CJ
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Magnesium	111	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1DF
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Manganese	114	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1DJ
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Mercury	97	(80 - 120)	SW846 7470A	04/08-04/11/11	MGM7R1AJ
		Dilution Factor: 1	Analysis Time..: 14:00	Instrument ID..: H1	
		Analyst ID.....: 002260			
Nickel	108	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1AC
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Potassium	103	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1DC
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Selenium	112	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1CM
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Silver	98	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1CQ
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Sodium	103	(75 - 125)	SW846 6020	04/08-04/11/11	MGM7R1CC
		Dilution Factor: 1	Analysis Time..: 19:06	Instrument ID..: I8	
		Analyst ID.....: 000079			
Thallium	102	(75 - 125)	SW846 6020	04/08-04/11/11	MGM7R1A8
		Dilution Factor: 1	Analysis Time..: 19:06	Instrument ID..: I8	
		Analyst ID.....: 000079			

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	106	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM7R1AF
		Dilution Factor: 1	Analysis Time..: 17:20	Instrument ID..: I5	
		Analyst ID.....: 002260			
Zinc	96	(75 - 125)	SW846 6020	04/08-04/11/11	MGM7R1A5
		Dilution Factor: 1	Analysis Time..: 19:06	Instrument ID..: I8	
		Analyst ID.....: 000079			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D070402-017 **Prep Batch #...:** 1098019								
Aluminum	ND	10000	9680	ug/L	97	SW846 6020	04/08-04/11/11	MGM7R1AM
			Dilution Factor: 1		Analysis Time..: 19:06		Instrument ID..: I8	
			Analyst ID.....: 000079					
Antimony	ND	100	102	ug/L	102	SW846 6020	04/08-04/11/11	MGM7R1A2
			Dilution Factor: 1		Analysis Time..: 19:06		Instrument ID..: I8	
			Analyst ID.....: 000079					
Arsenic	ND	2000	2030	ug/L	101	SW846 6010B	04/08-04/14/11	MGM7R1CF
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Barium	76.4	2000	2220	ug/L	107	SW846 6010B	04/08-04/14/11	MGM7R1CU
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Beryllium	ND	100	98.7	ug/L	99	SW846 6020	04/08-04/11/11	MGM7R1AQ
			Dilution Factor: 1		Analysis Time..: 19:06		Instrument ID..: I8	
			Analyst ID.....: 000079					
Cadmium	ND	100	102	ug/L	102	SW846 6020	04/08-04/11/11	MGM7R1AU
			Dilution Factor: 1		Analysis Time..: 19:06		Instrument ID..: I8	
			Analyst ID.....: 000079					
Calcium	73600	50000	127000	ug/L	107	SW846 6010B	04/08-04/14/11	MGM7R1CX
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Chromium	ND	200	207	ug/L	103	SW846 6010B	04/08-04/14/11	MGM7R1C5
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Cobalt	ND	500	526	ug/L	105	SW846 6010B	04/08-04/14/11	MGM7R1C2
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Copper	ND	250	263	ug/L	105	SW846 6010B	04/08-04/14/11	MGM7R1C8
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	599	10000	10400	ug/L	98	SW846 6020	04/08-04/11/11	MGM7R1AX
			Dilution Factor: 1		Analysis Time..: 19:06		Instrument ID..: I8	
			Analyst ID.....: 000079					
Lead	ND	500	551	ug/L	110	SW846 6010B	04/08-04/14/11	MGM7R1CJ
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Magnesium	30000	50000	85300	ug/L	111	SW846 6010B	04/08-04/14/11	MGM7R1DF
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Manganese	258	500	829	ug/L	114	SW846 6010B	04/08-04/14/11	MGM7R1DJ
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Mercury	ND	1.0	0.97	ug/L	97	SW846 7470A	04/08-04/11/11	MGM7R1AJ
			Dilution Factor: 1		Analysis Time..: 14:00		Instrument ID..: H1	
			Analyst ID.....: 002260					
Nickel	ND	500	541	ug/L	108	SW846 6010B	04/08-04/14/11	MGM7R1AC
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Potassium	1370	50000	52800	ug/L	103	SW846 6010B	04/08-04/14/11	MGM7R1DC
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Selenium	ND	2000	2230	ug/L	112	SW846 6010B	04/08-04/14/11	MGM7R1CM
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Silver	ND	50.0	49.0	ug/L	98	SW846 6010B	04/08-04/14/11	MGM7R1CQ
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Sodium	7180	10000	17500	ug/L	103	SW846 6020	04/08-04/11/11	MGM7R1CC
			Dilution Factor: 1		Analysis Time..: 19:06		Instrument ID..: I8	
			Analyst ID.....: 000079					
Thallium	ND	100	102	ug/L	102	SW846 6020	04/08-04/11/11	MGM7R1A8
			Dilution Factor: 1		Analysis Time..: 19:06		Instrument ID..: I8	
			Analyst ID.....: 000079					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	ND	500	529	ug/L	106	SW846 6010B	04/08-04/14/11	MGM7R1AF
			Dilution Factor: 1		Analysis Time..: 17:20		Instrument ID..: I5	
			Analyst ID.....: 002260					
Zinc	8.0	100	104	ug/L	96	SW846 6020	04/08-04/11/11	MGM7R1A5
			Dilution Factor: 1		Analysis Time..: 19:06		Instrument ID..: I8	
			Analyst ID.....: 000079					

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D070402-031 **Prep Batch #...:** 1098019					
Aluminum	96	(75 - 125)	SW846 6020	04/08-04/11/11	MGM9D1AM
		Dilution Factor: 1	Analysis Time..: 20:02	Instrument ID..: I8	
		Analyst ID.....: 000079			
Antimony	101	(75 - 125)	SW846 6020	04/08-04/11/11	MGM9D1A2
		Dilution Factor: 1	Analysis Time..: 20:02	Instrument ID..: I8	
		Analyst ID.....: 000079			
Arsenic	97	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1CF
		Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5	
		Analyst ID.....: 002260			
Barium	109	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1CU
		Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5	
		Analyst ID.....: 002260			
Beryllium	95	(75 - 125)	SW846 6020	04/08-04/11/11	MGM9D1AQ
		Dilution Factor: 1	Analysis Time..: 20:02	Instrument ID..: I8	
		Analyst ID.....: 000079			
Cadmium	101	(75 - 125)	SW846 6020	04/08-04/11/11	MGM9D1AU
		Dilution Factor: 1	Analysis Time..: 20:02	Instrument ID..: I8	
		Analyst ID.....: 000079			
Calcium	98	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1CX
		Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5	
		Analyst ID.....: 002260			
Chromium	100	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1C5
		Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5	
		Analyst ID.....: 002260			
Cobalt	101	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1C2
		Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5	
		Analyst ID.....: 002260			
Copper	106	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1C8
		Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5	
		Analyst ID.....: 002260			

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	96	(75 - 125)	SW846 6020	04/08-04/11/11	MGM9D1AX
	Dilution Factor: 1	Analysis Time..: 20:02	Instrument ID..: I8		
	Analyst ID.....: 000079				
Lead	105	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1CJ
	Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5		
	Analyst ID.....: 002260				
Magnesium	98	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1DF
	Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5		
	Analyst ID.....: 002260				
Manganese	109	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1DJ
	Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5		
	Analyst ID.....: 002260				
Mercury	102	(80 - 120)	SW846 7470A	04/08-04/11/11	MGM9D1AJ
	Dilution Factor: 1	Analysis Time..: 13:39	Instrument ID..: H1		
	Analyst ID.....: 002260				
Nickel	104	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1AC
	Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5		
	Analyst ID.....: 002260				
Potassium	107	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1DC
	Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5		
	Analyst ID.....: 002260				
Selenium	107	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1CM
	Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5		
	Analyst ID.....: 002260				
Silver	98	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1CQ
	Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5		
	Analyst ID.....: 002260				
Sodium	111	(75 - 125)	SW846 6020	04/08-04/11/11	MGM9D1CC
	Dilution Factor: 1	Analysis Time..: 20:02	Instrument ID..: I8		
	Analyst ID.....: 000079				
Thallium	102	(75 - 125)	SW846 6020	04/08-04/11/11	MGM9D1A8
	Dilution Factor: 1	Analysis Time..: 20:02	Instrument ID..: I8		
	Analyst ID.....: 000079				

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	104	(75 - 125)	SW846 6010B	04/08-04/14/11	MGM9D1AF
		Dilution Factor: 1	Analysis Time..: 18:25	Instrument ID..: I5	
		Analyst ID.....: 002260			
Zinc	100	(75 - 125)	SW846 6020	04/08-04/11/11	MGM9D1A5
		Dilution Factor: 1	Analysis Time..: 20:02	Instrument ID..: I8	
		Analyst ID.....: 000079			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D070402-031 **Prep Batch #...:** 1098019								
Aluminum	ND	10000	9640	ug/L	96	SW846 6020	04/08-04/11/11	MGM9D1AM
			Dilution Factor: 1		Analysis Time..: 20:02		Instrument ID..: I8	
			Analyst ID.....: 000079					
Antimony	ND	100	101	ug/L	101	SW846 6020	04/08-04/11/11	MGM9D1A2
			Dilution Factor: 1		Analysis Time..: 20:02		Instrument ID..: I8	
			Analyst ID.....: 000079					
Arsenic	11.3	2000	1960	ug/L	97	SW846 6010B	04/08-04/14/11	MGM9D1CF
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Barium	35.7	2000	2220	ug/L	109	SW846 6010B	04/08-04/14/11	MGM9D1CU
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Beryllium	ND	100	94.6	ug/L	95	SW846 6020	04/08-04/11/11	MGM9D1AQ
			Dilution Factor: 1		Analysis Time..: 20:02		Instrument ID..: I8	
			Analyst ID.....: 000079					
Cadmium	ND	100	101	ug/L	101	SW846 6020	04/08-04/11/11	MGM9D1AU
			Dilution Factor: 1		Analysis Time..: 20:02		Instrument ID..: I8	
			Analyst ID.....: 000079					
Calcium	33300	50000	82500	ug/L	98	SW846 6010B	04/08-04/14/11	MGM9D1CX
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Chromium	ND	200	200	ug/L	100	SW846 6010B	04/08-04/14/11	MGM9D1C5
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Cobalt	1.5	500	506	ug/L	101	SW846 6010B	04/08-04/14/11	MGM9D1C2
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Copper	ND	250	265	ug/L	106	SW846 6010B	04/08-04/14/11	MGM9D1C8
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	18200	10000	27800	ug/L	96	SW846 6020	04/08-04/11/11	MGM9D1AX
			Dilution Factor: 1		Analysis Time..: 20:02		Instrument ID..: I8	
			Analyst ID.....: 000079					
Lead	ND	500	524	ug/L	105	SW846 6010B	04/08-04/14/11	MGM9D1CJ
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Magnesium	92000	50000	141000	ug/L	98	SW846 6010B	04/08-04/14/11	MGM9D1DF
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Manganese	296	500	842	ug/L	109	SW846 6010B	04/08-04/14/11	MGM9D1DJ
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Mercury	ND	1.0	1.0	ug/L	102	SW846 7470A	04/08-04/11/11	MGM9D1AJ
			Dilution Factor: 1		Analysis Time..: 13:39		Instrument ID..: H1	
			Analyst ID.....: 002260					
Nickel	2.8	500	522	ug/L	104	SW846 6010B	04/08-04/14/11	MGM9D1AC
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Potassium	2130	50000	55900	ug/L	107	SW846 6010B	04/08-04/14/11	MGM9D1DC
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Selenium	ND	2000	2150	ug/L	107	SW846 6010B	04/08-04/14/11	MGM9D1CM
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Silver	ND	50.0	49.1	ug/L	98	SW846 6010B	04/08-04/14/11	MGM9D1CQ
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Sodium	2180	10000	13200	ug/L	111	SW846 6020	04/08-04/11/11	MGM9D1CC
			Dilution Factor: 1		Analysis Time..: 20:02		Instrument ID..: I8	
			Analyst ID.....: 000079					
Thallium	ND	100	102	ug/L	102	SW846 6020	04/08-04/11/11	MGM9D1A8
			Dilution Factor: 1		Analysis Time..: 20:02		Instrument ID..: I8	
			Analyst ID.....: 000079					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	ND	500	518	ug/L	104	SW846 6010B	04/08-04/14/11	MGM9D1AF
			Dilution Factor: 1		Analysis Time..: 18:25		Instrument ID..: I5	
			Analyst ID.....: 002260					
Zinc	5.5	100	106	ug/L	100	SW846 6020	04/08-04/11/11	MGM9D1A5
			Dilution Factor: 1		Analysis Time..: 20:02		Instrument ID..: I8	
			Analyst ID.....: 000079					

NOTE(S):

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

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: A1D070566 **Work Order #...:** MGM7R-SMP MGM7R-DUP **Matrix.....:** WATER

Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Lead						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Selenium						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Silver						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Barium						SD Lot-Sample #: A1D070402-017		
	76.4	78.2	ug/L	2.4	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Calcium						SD Lot-Sample #: A1D070402-017		
	73600	74900	ug/L	1.8	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Potassium						SD Lot-Sample #: A1D070402-017		
	1370	1380	ug/L	0.74	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Magnesium						SD Lot-Sample #: A1D070402-017		
	30000	30500	ug/L	1.7	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Manganese						SD Lot-Sample #: A1D070402-017		
	258	262	ug/L	1.8	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Antimony						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 19:06	Analyst ID.....: 000079	
		Instrument ID..: I8						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D070566-000 **Work Order #...:** MGM7R-SMP MGM7R-DUP **Matrix.....:** WATER

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Zinc						SD Lot-Sample #: A1D070402-017		
	8.0 B,J	4.1 B	ug/L	65	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 19:06	Analyst ID.....: 000079	
		Instrument ID..: I8						
Thallium						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 19:06	Analyst ID.....: 000079	
		Instrument ID..: I8						
Nickel						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Vanadium						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Mercury						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 7470A	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 14:00	Analyst ID.....: 002260	
		Instrument ID..: H1						
Aluminum						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 19:06	Analyst ID.....: 000079	
		Instrument ID..: I8						
Beryllium						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 19:06	Analyst ID.....: 000079	
		Instrument ID..: I8						
Cadmium						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 19:06	Analyst ID.....: 000079	
		Instrument ID..: I8						
Iron						SD Lot-Sample #: A1D070402-017		
	599	612	ug/L	2.2	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 19:06	Analyst ID.....: 000079	
		Instrument ID..: I8						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D070566-000 **Work Order #...:** MGM7R-SMP MGM7R-DUP **Matrix.....:** WATER

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cobalt						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Chromium						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Copper						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						
Sodium						SD Lot-Sample #: A1D070402-017		
	7180	7440	ug/L	3.5	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 19:06	Analyst ID.....: 000079	
		Instrument ID..: I8						
Arsenic						SD Lot-Sample #: A1D070402-017		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 17:20	Analyst ID.....: 002260	
		Instrument ID..: I5						

NOTE(S):

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

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: A1D070566 **Work Order #...:** MGM9D-SMP MGM9D-DUP **Matrix.....:** WATER

Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Mercury						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 7470A	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 13:39	Analyst ID.....: 002260	
		Instrument ID..: H1						
Aluminum						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 20:02	Analyst ID.....: 000079	
		Instrument ID..: I8						
Beryllium						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 20:02	Analyst ID.....: 000079	
		Instrument ID..: I8						
Cadmium						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 20:02	Analyst ID.....: 000079	
		Instrument ID..: I8						
Iron						SD Lot-Sample #: A1D070402-031		
	18200	16800	ug/L	8.0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 20:02	Analyst ID.....: 000079	
		Instrument ID..: I8						
Cobalt						SD Lot-Sample #: A1D070402-031		
	1.5 B	2.1 B	ug/L	33	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Chromium						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Copper						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Sodium						SD Lot-Sample #: A1D070402-031		
	2180	2000	ug/L	8.4	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 20:02	Analyst ID.....: 000079	
		Instrument ID..: I8						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D070566-000 **Work Order #...:** MGM9D-SMP MGM9D-DUP **Matrix.....:** WATER

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Arsenic						SD Lot-Sample #: A1D070402-031		
	11.3	13.8	ug/L	20	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Antimony						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 20:02	Analyst ID.....: 000079	
		Instrument ID..: I8						
Zinc						SD Lot-Sample #: A1D070402-031		
	5.5 B,J	7.4 B	ug/L	29	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 20:02	Analyst ID.....: 000079	
		Instrument ID..: I8						
Thallium						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/08-04/11/11	1098019
		Dilution Factor: 1				Analysis Time..: 20:02	Analyst ID.....: 000079	
		Instrument ID..: I8						
Nickel						SD Lot-Sample #: A1D070402-031		
	2.8 B	2.5 B	ug/L	10	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Vanadium						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Lead						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Selenium						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Silver						SD Lot-Sample #: A1D070402-031		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D070566-000 **Work Order #...:** MGM9D-SMP MGM9D-DUP **Matrix.....:** WATER

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Barium						SD Lot-Sample #: A1D070402-031		
	35.7	33.6	ug/L	6.1	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Calcium						SD Lot-Sample #: A1D070402-031		
	33300	31000	ug/L	7.3	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Potassium						SD Lot-Sample #: A1D070402-031		
	2130	2050	ug/L	3.8	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Magnesium						SD Lot-Sample #: A1D070402-031		
	92000	85500	ug/L	7.3	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						
Manganese						SD Lot-Sample #: A1D070402-031		
	296	274	ug/L	7.5	(0-20)	SW846 6010B	04/08-04/14/11	1098019
		Dilution Factor: 1				Analysis Time..: 18:25	Analyst ID.....: 002260	
		Instrument ID..: I5						

NOTE(S):

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

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Metals Internal Chain of Custody

Date Prepared: 04/08/11 **Prep Analyst:** Lisa Mcgall

Laboratory Sample ID		Lab ID	Method	Analysis Date	Analyst	Instrument
A1D070566	11	MGPCC	SW846 6010B	04/14/11	Brian Davies	I5
A1D070566	11	MGPCC	SW846 6020	04/11/11	Natalie Bucklew	I8
A1D070566	11	MGPCC	SW846 7470A	04/11/11	Brian Davies	H1

U - Unfiltered F - Filtered T - TCLP L - SPLP East W - SPLP West

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GENERAL CHEMISTRY DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGRQLMW-007C-0120-GW

General Chemistry

Lot-Sample #...: A1D070566-001 **Work Order #...:** MGPAF **Matrix.....:** WG
Date Sampled...: 04/06/11 15:19 **Date Received..:** 04/07/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1				
Chloride	**1.4**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101106**
		Dilution Factor: 1				
Fluoride	**0.14 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101103**
		Dilution Factor: 1				
Nitrate as N	**0.040 B**	**0.10**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101114**
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	**0.79**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101116**
		Dilution Factor: 1				
Sulfate	**101**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101119**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGRQLMW-008C-0130-GW

General Chemistry

Lot-Sample #...: A1D070566-003 **Work Order #...:** MGPAR **Matrix.....:** WG
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1				
Chloride	**1.3**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101106**
		Dilution Factor: 1				
Fluoride	**0.30 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/13/11**	**1104302**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1				
Nitrogen, as Ammonia	**0.84 B**	**2.0**	**mg/L**	**MCAWW 350.2**	**04/08/11**	**1098085**
		Dilution Factor: 1				
Phosphate as P, Ortho	**0.17 B**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101116**
		Dilution Factor: 1				
Sulfate	**62.6**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101119**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGRQLMW-009C-0140-GW

General Chemistry

Lot-Sample #...: A1D070566-005 **Work Order #...:** MGPA1 **Matrix.....:** WG
Date Sampled...: 04/06/11 15:31 **Date Received..:** 04/07/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1				
Chloride	**1.1**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101106**
		Dilution Factor: 1				
Fluoride	**0.11 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101103**
		Dilution Factor: 1				
Nitrate as N	**0.071 B**	**0.10**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101114**
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	**1.3**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101116**
		Dilution Factor: 1				
Sulfate	**13.4**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101119**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGRQLMW-014C-0150-GW

General Chemistry

Lot-Sample #...: A1D070566-007 **Work Order #...:** MGPA4 **Matrix.....:** WG
Date Sampled...: 04/06/11 09:16 **Date Received..:** 04/07/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1				
Chloride	**5.0**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101106**
		Dilution Factor: 1				
Fluoride	**0.11 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101103**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1				
Sulfate	**50.0**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101119**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGRQLMW-016C-0160-GW

General Chemistry

Lot-Sample #...: A1D070566-009 **Work Order #...:** MGPA7 **Matrix.....:** WG
Date Sampled...: 04/06/11 11:03 **Date Received..:** 04/07/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1				
Chloride	**6.7**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101106**
		Dilution Factor: 1				
Fluoride	**0.37 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101103**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	**0.19 B**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101116**
		Dilution Factor: 1				
Sulfate	**1120**	**10.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101119**
		Dilution Factor: 10				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

General Chemistry

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1				
Chloride	ND	1.0	mg/L	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1				
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1				
Fluoride	ND	1.0	mg/L	MCAWW 300.0A	04/13/11	1104302
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1				
Nitrate-Nitrite	ND	0.1	mg/L	MCAWW 353.2	04/12/11	1102391
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1				
Nitrocellulose	ND	2.0	mg/L	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1				
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	04/08/11	1101119
		Dilution Factor: 1				

U.S.Geological Survey (USGS)

Client Sample ID: FWGSCFMW-003C-0170-GW

General Chemistry

Lot-Sample #...: A1D070566-013 **Work Order #...:** MGPCP **Matrix.....:** WG
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1				
Chloride	**1.4**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101106**
		Dilution Factor: 1				
Fluoride	**0.12 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/13/11**	**1104302**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1				
Sulfate	**25.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101119**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #: MGT1H1AA		MB Lot-Sample #:	A1D110000-109	
	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1				
Chloride		Work Order #: MGT061AA		MB Lot-Sample #:	A1D110000-106	
	ND	1.0	mg/L	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1				
Cyanide, Total		Work Order #: MG0MK1AA		MB Lot-Sample #:	A1D130000-349	
	ND	0.010	mg/L	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1				
Fluoride		Work Order #: MGT031AA		MB Lot-Sample #:	A1D110000-103	
	ND	1.0	mg/L	MCAWW 300.0A	04/08/11	1101103
		Dilution Factor: 1				
Fluoride		Work Order #: MG2FD1AA		MB Lot-Sample #:	A1D140000-302	
	ND	1.0	mg/L	MCAWW 300.0A	04/13/11	1104302
		Dilution Factor: 1				
Nitrate as N		Work Order #: MGT1N1AA		MB Lot-Sample #:	A1D110000-114	
	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1				
Nitrate-Nitrite		Work Order #: MGXCN1AA		MB Lot-Sample #:	G1D120000-391	
	ND	0.1	mg/L	MCAWW 353.2	04/12/11	1102391
		Dilution Factor: 1				
Nitrite as N		Work Order #: MGT1E1AA		MB Lot-Sample #:	A1D110000-108	
	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1				
Nitrocellulose		Work Order #: MGWA31AA		MB Lot-Sample #:	G1D120000-167	
	ND	2.0	mg/L	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1				
Nitrogen, as Ammonia		Work Order #: MGQQH1AA		MB Lot-Sample #:	A1D080000-085	
	ND	2.0	mg/L	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1				
Phosphate as P, Ortho		Work Order #: MGT1R1AA		MB Lot-Sample #:	A1D110000-116	
	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1				

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METHOD BLANK REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		Work Order #: MGT111AA		MB Lot-Sample #:	A1D110000-119	
	ND	1.0	mg/L	MCAWW 300.0A	04/08/11	1101119
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A1D070566 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#:MGT1H1AC-LCS/MGT1H1AD-LCSD LCS Lot-Sample#: A1D110000-109					
	93	(90 - 110)			MCAWW 300.0A	04/08/11	1101109
	94	(90 - 110)	0.47	(0-20)	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1					
Chloride		WO#:MGT061AC-LCS/MGT061AD-LCSD LCS Lot-Sample#: A1D110000-106					
	100	(90 - 110)			MCAWW 300.0A	04/08/11	1101106
	100	(90 - 110)	0.34	(0-20)	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1					
Fluoride		WO#:MGT031AC-LCS/MGT031AD-LCSD LCS Lot-Sample#: A1D110000-103					
	92	(90 - 110)			MCAWW 300.0A	04/08/11	1101103
	93	(90 - 110)	0.86	(0-20)	MCAWW 300.0A	04/08/11	1101103
		Dilution Factor: 1					
Fluoride		WO#:MG2FD1AC-LCS/MG2FD1AD-LCSD LCS Lot-Sample#: A1D140000-302					
	94	(90 - 110)			MCAWW 300.0A	04/13/11	1104302
	94	(90 - 110)	0.0	(0-20)	MCAWW 300.0A	04/13/11	1104302
		Dilution Factor: 1					
Nitrate as N		WO#:MGT1N1AC-LCS/MGT1N1AD-LCSD LCS Lot-Sample#: A1D110000-114					
	95	(90 - 110)			MCAWW 300.0A	04/08/11	1101114
	95	(90 - 110)	0.38	(0-20)	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1					
Nitrite as N		WO#:MGT1E1AC-LCS/MGT1E1AD-LCSD LCS Lot-Sample#: A1D110000-108					
	101	(90 - 110)			MCAWW 300.0A	04/08/11	1101108
	101	(90 - 110)	0.27	(0-20)	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#:MGT1R1AC-LCS/MGT1R1AD-LCSD LCS Lot-Sample#: A1D110000-116					
	100	(90 - 110)			MCAWW 300.0A	04/08/11	1101116
	102	(90 - 110)	2.7	(0-20)	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1					
Sulfate		WO#:MGT111AC-LCS/MGT111AD-LCSD LCS Lot-Sample#: A1D110000-119					
	95	(90 - 110)			MCAWW 300.0A	04/08/11	1101119
	96	(90 - 110)	0.66	(0-20)	MCAWW 300.0A	04/08/11	1101119
		Dilution Factor: 1					

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A1D070566 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A1D070566 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#:MGT1H1AC-LCS/MGT1H1AD-LCSD LCS Lot-Sample#: A1D110000-109						
	10.0	9.3	mg/L	93		MCAWW 300.0A	04/08/11	1101109
	10.0	9.4	mg/L	94	0.47	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1						
Chloride		WO#:MGT061AC-LCS/MGT061AD-LCSD LCS Lot-Sample#: A1D110000-106						
	50.0	49.9	mg/L	100		MCAWW 300.0A	04/08/11	1101106
	50.0	50.1	mg/L	100	0.34	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1						
Fluoride		WO#:MGT031AC-LCS/MGT031AD-LCSD LCS Lot-Sample#: A1D110000-103						
	2.5	2.3	mg/L	92		MCAWW 300.0A	04/08/11	1101103
	2.5	2.3	mg/L	93	0.86	MCAWW 300.0A	04/08/11	1101103
		Dilution Factor: 1						
Fluoride		WO#:MG2FD1AC-LCS/MG2FD1AD-LCSD LCS Lot-Sample#: A1D140000-302						
	2.5	2.3	mg/L	94		MCAWW 300.0A	04/13/11	1104302
	2.5	2.3	mg/L	94	0.0	MCAWW 300.0A	04/13/11	1104302
		Dilution Factor: 1						
Nitrate as N		WO#:MGT1N1AC-LCS/MGT1N1AD-LCSD LCS Lot-Sample#: A1D110000-114						
	2.5	2.4	mg/L	95		MCAWW 300.0A	04/08/11	1101114
	2.5	2.4	mg/L	95	0.38	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1						
Nitrite as N		WO#:MGT1E1AC-LCS/MGT1E1AD-LCSD LCS Lot-Sample#: A1D110000-108						
	2.5	2.5	mg/L	101		MCAWW 300.0A	04/08/11	1101108
	2.5	2.5	mg/L	101	0.27	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1						
Phosphate as P, Ortho		WO#:MGT1R1AC-LCS/MGT1R1AD-LCSD LCS Lot-Sample#: A1D110000-116						
	2.5	2.5	mg/L	100		MCAWW 300.0A	04/08/11	1101116
	2.5	2.6	mg/L	102	2.7	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1						
Sulfate		WO#:MGT111AC-LCS/MGT111AD-LCSD LCS Lot-Sample#: A1D110000-119						
	50.0	47.7	mg/L	95		MCAWW 300.0A	04/08/11	1101119
	50.0	48.0	mg/L	96	0.66	MCAWW 300.0A	04/08/11	1101119
		Dilution Factor: 1						

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LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A1D070566 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #: MG0MK1AC	LCS Lot-Sample#: A1D130000-349		
	101	(80 - 120)	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1			
Nitrate-Nitrite		Work Order #: MGXCN1AC	LCS Lot-Sample#: G1D120000-391		
	100	(90 - 110)	MCAWW 353.2	04/12/11	1102391
		Dilution Factor: 1			
Nitrocellulose		Work Order #: MGWA31AC	LCS Lot-Sample#: G1D120000-167		
	90	(26 - 144)	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1			
Nitrogen, as Ammonia		Work Order #: MGQQH1AC	LCS Lot-Sample#: A1D080000-085		
	94	(85 - 114)	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			Work Order #: MG0MK1AC	LCS Lot-Sample#: A1D130000-349			
	0.33	0.33	mg/L	101	SW846 9012A	04/13/11	1103349
			Dilution Factor: 1				
Nitrate-Nitrite			Work Order #: MGXCN1AC	LCS Lot-Sample#: G1D120000-391			
	1.0	1	mg/L	100	MCAWW 353.2	04/12/11	1102391
			Dilution Factor: 1				
Nitrocellulose			Work Order #: MGWA31AC	LCS Lot-Sample#: G1D120000-167			
	5.1	4.6	mg/L	90	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
			Dilution Factor: 1				
Nitrogen, as Ammonia			Work Order #: MGQQH1AC	LCS Lot-Sample#: A1D080000-085			
	14	13	mg/L	94	MCAWW 350.2	04/08/11	1098085
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		WO#: MGM891AM-MS/MGM891AN-MSD				MS Lot-Sample #: A1D070402-030	
	99	(80 - 120)			SW846 9012A	04/13/11	1103349
	90	(80 - 120)	8.7	(0-20)	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1					
Cyanide, Total		WO#: MGP1D1AM-MS/MGP1D1AN-MSD				MS Lot-Sample #: A1D080405-002	
	92	(80 - 120)			SW846 9012A	04/13/11	1103349
	97	(80 - 120)	5.8	(0-20)	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1					
Cyanide, Total		WO#: MGP131AM-MS/MGP131AN-MSD				MS Lot-Sample #: A1D080405-018	
	103	(80 - 120)			SW846 9012A	04/13/11	1103349
	98	(80 - 120)	4.5	(0-20)	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1					
Nitrocellulose		WO#: MGLKA1AF-MS/MGLKA1AG-MSD				MS Lot-Sample #: A1D060428-014	
	80	(26 - 144)			TAL-SOP WS-WC-005	04/12-04/13/11	1102167
	79	(26 - 144)	0.99	(0-45)	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1					
Nitrogen, as Ammonia		WO#: MGAA51AU-MS/MGAA51AV-MSD				MS Lot-Sample #: A1C290455-001	
	104	(75 - 125)			MCAWW 350.2	04/08/11	1098085
	97	(75 - 125)	1.2	(0-20)	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1					

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			WO#: MGM891AM-MS/MGM891AN-MSD				MS Lot-Sample #: A1D070402-030		
	ND	0.040	0.041	mg/L	99		SW846 9012A	04/13/11	1103349
	ND	0.040	0.037	mg/L	90	8.7	SW846 9012A	04/13/11	1103349
			Dilution Factor: 1						
Cyanide, Total			WO#: MGP1D1AM-MS/MGP1D1AN-MSD				MS Lot-Sample #: A1D080405-002		
	ND	0.040	0.037	mg/L	92		SW846 9012A	04/13/11	1103349
	ND	0.040	0.039	mg/L	97	5.8	SW846 9012A	04/13/11	1103349
			Dilution Factor: 1						
Cyanide, Total			WO#: MGP131AM-MS/MGP131AN-MSD				MS Lot-Sample #: A1D080405-018		
	ND	0.040	0.043	mg/L	103		SW846 9012A	04/13/11	1103349
	ND	0.040	0.041	mg/L	98	4.5	SW846 9012A	04/13/11	1103349
			Dilution Factor: 1						
Nitrocellulose			WO#: MGLKA1AF-MS/MGLKA1AG-MSD				MS Lot-Sample #: A1D060428-014		
	ND	5.1	4.1	mg/L	80		TAL-SOP WS-WC	04/12-04/13/11	1102167
	ND	5.1	4.0	mg/L	79	0.99	TAL-SOP WS-WC	04/12-04/13/11	1102167
			Dilution Factor: 1						
Nitrogen, as Ammonia			WO#: MGAA51AU-MS/MGAA51AV-MSD				MS Lot-Sample #: A1C290455-001		
	19	4.0	23	mg/L	104		MCAWW 350.2	04/08/11	1098085
	19	4.0	23	mg/L	97	1.2	MCAWW 350.2	04/08/11	1098085
			Dilution Factor: 1						

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WATER
Date Sampled...: 03/28/11 13:42 **Date Received..:** 03/29/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #...: MGM891AM		MS Lot-Sample #: A1D070402-030	
	99	(80 - 120)	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1			
Cyanide, Total		Work Order #...: MGP1D1AM		MS Lot-Sample #: A1D080405-002	
	92	(80 - 120)	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1			
Cyanide, Total		Work Order #...: MGP131AM		MS Lot-Sample #: A1D080405-018	
	103	(80 - 120)	SW846 9012A	04/13/11	1103349
		Dilution Factor: 1			
Nitrocellulose		Work Order #...: MGLKA1AF		MS Lot-Sample #: A1D060428-014	
	80	(26 - 144)	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1			
Nitrogen, as Ammonia		Work Order #...: MGAA51AU		MS Lot-Sample #: A1C290455-001	
	104	(75 - 125)	MCAWW 350.2	04/08/11	1098085
		Dilution Factor: 1			

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WG
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#: MGPAF1AR-MS/MGPAF1AT-MSD				MS Lot-Sample #: A1D070566-001	
	95	(80 - 120)			MCAWW 300.0A	04/08/11	1101109
	95	(80 - 120)	0.21	(0-20)	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1					
Bromide		WO#: MGPA71AV-MS/MGPA71AW-MSD				MS Lot-Sample #: A1D070566-009	
	94	(80 - 120)			MCAWW 300.0A	04/08/11	1101109
	93	(80 - 120)	0.82	(0-20)	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1					
Chloride		WO#: MGPAF1AM-MS/MGPAF1AN-MSD				MS Lot-Sample #: A1D070566-001	
	102	(80 - 120)			MCAWW 300.0A	04/08/11	1101106
	100	(80 - 120)	1.4	(0-20)	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1					
Chloride		WO#: MGPA71AN-MS/MGPA71AP-MSD				MS Lot-Sample #: A1D070566-009	
	105	(80 - 120)			MCAWW 300.0A	04/08/11	1101106
	104	(80 - 120)	0.71	(0-20)	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1					
Fluoride		WO#: MGPAF1AK-MS/MGPAF1AL-MSD				MS Lot-Sample #: A1D070566-001	
	99	(80 - 120)			MCAWW 300.0A	04/08/11	1101103
	98	(80 - 120)	0.53	(0-20)	MCAWW 300.0A	04/08/11	1101103
		Dilution Factor: 1					
Fluoride		WO#: MGPA71AK-MS/MGPA71AL-MSD				MS Lot-Sample #: A1D070566-009	
	94	(80 - 120)			MCAWW 300.0A	04/08/11	1101103
	93	(80 - 120)	0.95	(0-20)	MCAWW 300.0A	04/08/11	1101103
		Dilution Factor: 1					
Nitrate as N		WO#: MGPAF1AU-MS/MGPAF1AV-MSD				MS Lot-Sample #: A1D070566-001	
	94	(80 - 120)			MCAWW 300.0A	04/08/11	1101114
	94	(80 - 120)	0.50	(0-20)	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1					
Nitrate as N		WO#: MGPA71A0-MS/MGPA71A1-MSD				MS Lot-Sample #: A1D070566-009	
	95	(80 - 120)			MCAWW 300.0A	04/08/11	1101114
	94	(80 - 120)	0.76	(0-20)	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1					
Nitrite as N		WO#: MGPAF1AP-MS/MGPAF1AQ-MSD				MS Lot-Sample #: A1D070566-001	
	115	(80 - 120)			MCAWW 300.0A	04/08/11	1101108
	113	(80 - 120)	1.5	(0-20)	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1					

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MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WG
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite as N		WO#: MGPA71AR-MS/MGPA71AT-MSD				MS Lot-Sample #: A1D070566-009	
	113	(80 - 120)			MCAWW 300.0A	04/08/11	1101108
	111	(80 - 120)	1.9	(0-20)	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#: MGPAF1AW-MS/MGPAF1AX-MSD				MS Lot-Sample #: A1D070566-001	
	200 N	(80 - 120)			MCAWW 300.0A	04/08/11	1101116
	205 N	(80 - 120)	2.2	(0-20)	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#: MGPA71A3-MS/MGPA71A4-MSD				MS Lot-Sample #: A1D070566-009	
	0.0 N	(80 - 120)			MCAWW 300.0A	04/08/11	1101116
	0.0 N	(80 - 120)	0.0	(0-20)	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1					
Sulfate		WO#: MGPAF1A0-MS/MGPAF1A1-MSD				MS Lot-Sample #: A1D070566-001	
	113	(80 - 120)			MCAWW 300.0A	04/08/11	1101119
	112	(80 - 120)	0.57	(0-20)	MCAWW 300.0A	04/08/11	1101119
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WG
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide			WO#: MGPAF1AR-MS/MGPAF1AT-MSD		MS Lot-Sample #: A1D070566-001				
	ND	10.0	9.5	mg/L	95		MCAWW 300.0A	04/08/11	1101109
	ND	10.0	9.5	mg/L	95	0.21	MCAWW 300.0A	04/08/11	1101109
			Dilution Factor: 1						
Bromide			WO#: MGPA71AV-MS/MGPA71AW-MSD		MS Lot-Sample #: A1D070566-009				
	ND	10.0	9.4	mg/L	94		MCAWW 300.0A	04/08/11	1101109
	ND	10.0	9.3	mg/L	93	0.82	MCAWW 300.0A	04/08/11	1101109
			Dilution Factor: 1						
Chloride			WO#: MGPAF1AM-MS/MGPAF1AN-MSD		MS Lot-Sample #: A1D070566-001				
	1.4	50.0	52.3	mg/L	102		MCAWW 300.0A	04/08/11	1101106
	1.4	50.0	51.6	mg/L	100	1.4	MCAWW 300.0A	04/08/11	1101106
			Dilution Factor: 1						
Chloride			WO#: MGPA71AN-MS/MGPA71AP-MSD		MS Lot-Sample #: A1D070566-009				
	6.7	50.0	59.4	mg/L	105		MCAWW 300.0A	04/08/11	1101106
	6.7	50.0	58.9	mg/L	104	0.71	MCAWW 300.0A	04/08/11	1101106
			Dilution Factor: 1						
Fluoride			WO#: MGPAF1AK-MS/MGPAF1AL-MSD		MS Lot-Sample #: A1D070566-001				
	0.14	2.5	2.6	mg/L	99		MCAWW 300.0A	04/08/11	1101103
	0.14	2.5	2.6	mg/L	98	0.53	MCAWW 300.0A	04/08/11	1101103
			Dilution Factor: 1						
Fluoride			WO#: MGPA71AK-MS/MGPA71AL-MSD		MS Lot-Sample #: A1D070566-009				
	0.37	2.5	2.7	mg/L	94		MCAWW 300.0A	04/08/11	1101103
	0.37	2.5	2.7	mg/L	93	0.95	MCAWW 300.0A	04/08/11	1101103
			Dilution Factor: 1						
Nitrate as N			WO#: MGPAF1AU-MS/MGPAF1AV-MSD		MS Lot-Sample #: A1D070566-001				
	0.040	2.5	2.4	mg/L	94		MCAWW 300.0A	04/08/11	1101114
	0.040	2.5	2.4	mg/L	94	0.50	MCAWW 300.0A	04/08/11	1101114
			Dilution Factor: 1						
Nitrate as N			WO#: MGPA71A0-MS/MGPA71A1-MSD		MS Lot-Sample #: A1D070566-009				
	ND	2.5	2.4	mg/L	95		MCAWW 300.0A	04/08/11	1101114
	ND	2.5	2.4	mg/L	94	0.76	MCAWW 300.0A	04/08/11	1101114
			Dilution Factor: 1						
Nitrite as N			WO#: MGPAF1AP-MS/MGPAF1AQ-MSD		MS Lot-Sample #: A1D070566-001				
	ND	2.5	2.9	mg/L	115		MCAWW 300.0A	04/08/11	1101108
	ND	2.5	2.8	mg/L	113	1.5	MCAWW 300.0A	04/08/11	1101108
			Dilution Factor: 1						

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MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WG
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite as N			WO#: MGPA71AR-MS/MGPA71AT-MSD		MS Lot-Sample #: A1D070566-009				
	ND	2.5	2.8	mg/L	113		MCAWW 300.0A	04/08/11	1101108
	ND	2.5	2.8	mg/L	111	1.9	MCAWW 300.0A	04/08/11	1101108
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGPAF1AW-MS/MGPAF1AX-MSD		MS Lot-Sample #: A1D070566-001				
	0.79	2.5	5.8 N	mg/L	200		MCAWW 300.0A	04/08/11	1101116
	0.79	2.5	5.9 N	mg/L	205	2.2	MCAWW 300.0A	04/08/11	1101116
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGPA71A3-MS/MGPA71A4-MSD		MS Lot-Sample #: A1D070566-009				
	0.19	2.5	0.096 N	mg/L	0.0		MCAWW 300.0A	04/08/11	1101116
	0.19	2.5	0.058 N	mg/L	0.0	0.0	MCAWW 300.0A	04/08/11	1101116
			Dilution Factor: 1						
Sulfate			WO#: MGPAF1A0-MS/MGPAF1A1-MSD		MS Lot-Sample #: A1D070566-001				
	101	50.0	158	mg/L	113		MCAWW 300.0A	04/08/11	1101119
	101	50.0	157	mg/L	112	0.57	MCAWW 300.0A	04/08/11	1101119
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WG
Date Sampled...: 04/06/11 15:19 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: MGPAF1AR		MS Lot-Sample #: A1D070566-001	
	95	(80 - 120)	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1			
Bromide		Work Order #...: MGPA71AV		MS Lot-Sample #: A1D070566-009	
	94	(80 - 120)	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1			
Chloride		Work Order #...: MGPAF1AM		MS Lot-Sample #: A1D070566-001	
	102	(80 - 120)	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1			
Chloride		Work Order #...: MGPA71AN		MS Lot-Sample #: A1D070566-009	
	105	(80 - 120)	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1			
Fluoride		Work Order #...: MGPAF1AK		MS Lot-Sample #: A1D070566-001	
	99	(80 - 120)	MCAWW 300.0A	04/08/11	1101103
		Dilution Factor: 1			
Fluoride		Work Order #...: MGPA71AK		MS Lot-Sample #: A1D070566-009	
	94	(80 - 120)	MCAWW 300.0A	04/08/11	1101103
		Dilution Factor: 1			
Fluoride		Work Order #...: MGPCP1AR		MS Lot-Sample #: A1D070566-013	
	100	(80 - 120)	MCAWW 300.0A	04/13/11	1104302
		Dilution Factor: 1			
Nitrate as N		Work Order #...: MGPAF1AU		MS Lot-Sample #: A1D070566-001	
	94	(80 - 120)	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1			
Nitrate as N		Work Order #...: MGPA71A0		MS Lot-Sample #: A1D070566-009	
	95	(80 - 120)	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1			
Nitrite as N		Work Order #...: MGPAF1AP		MS Lot-Sample #: A1D070566-001	
	115	(80 - 120)	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1			
Nitrite as N		Work Order #...: MGPA71AR		MS Lot-Sample #: A1D070566-009	
	113	(80 - 120)	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1			

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MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WG
Date Sampled...: 04/06/11 15:19 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho		Work Order #...: MGPAF1AW		MS Lot-Sample #:	A1D070566-001
	200 N	(80 - 120)	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGPA71A3		MS Lot-Sample #:	A1D070566-009
	0.0 N	(80 - 120)	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1			
Sulfate		Work Order #...: MGPAF1A0		MS Lot-Sample #:	A1D070566-001
	113	(80 - 120)	MCAWW 300.0A	04/08/11	1101119
		Dilution Factor: 1			

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#: MGPCC1CU-MS/MGPCC1CV-MSD				MS Lot-Sample #: A1D070566-011	
	89	(80 - 120)			MCAWW 300.0A	04/08/11	1101109
	94	(80 - 120)	4.6	(0-20)	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1					
Chloride		WO#: MGPCC1CP-MS/MGPCC1CQ-MSD				MS Lot-Sample #: A1D070566-011	
	95	(80 - 120)			MCAWW 300.0A	04/08/11	1101106
	96	(80 - 120)	1.1	(0-20)	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1					
Nitrate as N		WO#: MGPCC1CW-MS/MGPCC1CX-MSD				MS Lot-Sample #: A1D070566-011	
	92	(80 - 120)			MCAWW 300.0A	04/08/11	1101114
	94	(80 - 120)	2.5	(0-20)	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1					
Nitrate-Nitrite		WO#: MGPCC1C4-MS/MGPCC1C5-MSD				MS Lot-Sample #: A1D070566-011	
	87 N	(90 - 110)			MCAWW 353.2	04/12/11	1102391
	89 N	(90 - 110)	1.7	(0-20)	MCAWW 353.2	04/12/11	1102391
		Dilution Factor: 1					
Nitrite as N		WO#: MGPCC1CR-MS/MGPCC1CT-MSD				MS Lot-Sample #: A1D070566-011	
	107	(80 - 120)			MCAWW 300.0A	04/08/11	1101108
	110	(80 - 120)	2.5	(0-20)	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#: MGPCC1C0-MS/MGPCC1C1-MSD				MS Lot-Sample #: A1D070566-011	
	89	(80 - 120)			MCAWW 300.0A	04/08/11	1101116
	95	(80 - 120)	6.8	(0-20)	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1					
Sulfate		WO#: MGPCC1C2-MS/MGPCC1C3-MSD				MS Lot-Sample #: A1D070566-011	
	90	(80 - 120)			MCAWW 300.0A	04/08/11	1101119
	92	(80 - 120)	1.3	(0-20)	MCAWW 300.0A	04/08/11	1101119
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide			WO#: MGPCC1CU-MS/MGPCC1CV-MSD				MS Lot-Sample #: A1D070566-011		
	ND	10.0	8.9	mg/L	89		MCAWW 300.0A	04/08/11	1101109
	ND	10.0	9.4	mg/L	94	4.6	MCAWW 300.0A	04/08/11	1101109
			Dilution Factor: 1						
Chloride			WO#: MGPCC1CP-MS/MGPCC1CQ-MSD				MS Lot-Sample #: A1D070566-011		
	ND	50.0	47.5	mg/L	95		MCAWW 300.0A	04/08/11	1101106
	ND	50.0	48.0	mg/L	96	1.1	MCAWW 300.0A	04/08/11	1101106
			Dilution Factor: 1						
Nitrate as N			WO#: MGPCC1CW-MS/MGPCC1CX-MSD				MS Lot-Sample #: A1D070566-011		
	ND	2.5	2.3	mg/L	92		MCAWW 300.0A	04/08/11	1101114
	ND	2.5	2.3	mg/L	94	2.5	MCAWW 300.0A	04/08/11	1101114
			Dilution Factor: 1						
Nitrate-Nitrite			WO#: MGPCC1C4-MS/MGPCC1C5-MSD				MS Lot-Sample #: A1D070566-011		
	ND	1.0	0.9 N	mg/L	87		MCAWW 353.2	04/12/11	1102391
	ND	1.0	0.9 N	mg/L	89	1.7	MCAWW 353.2	04/12/11	1102391
			Dilution Factor: 1						
Nitrite as N			WO#: MGPCC1CR-MS/MGPCC1CT-MSD				MS Lot-Sample #: A1D070566-011		
	ND	2.5	2.7	mg/L	107		MCAWW 300.0A	04/08/11	1101108
	ND	2.5	2.7	mg/L	110	2.5	MCAWW 300.0A	04/08/11	1101108
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGPCC1C0-MS/MGPCC1C1-MSD				MS Lot-Sample #: A1D070566-011		
	ND	2.5	2.2	mg/L	89		MCAWW 300.0A	04/08/11	1101116
	ND	2.5	2.4	mg/L	95	6.8	MCAWW 300.0A	04/08/11	1101116
			Dilution Factor: 1						
Sulfate			WO#: MGPCC1C2-MS/MGPCC1C3-MSD				MS Lot-Sample #: A1D070566-011		
	ND	50.0	45.2	mg/L	90		MCAWW 300.0A	04/08/11	1101119
	ND	50.0	45.8	mg/L	92	1.3	MCAWW 300.0A	04/08/11	1101119
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: MGPCC1CU		MS Lot-Sample #: A1D070566-011	
	89	(80 - 120)	MCAWW 300.0A	04/08/11	1101109
		Dilution Factor: 1			
Chloride		Work Order #...: MGPCC1CP		MS Lot-Sample #: A1D070566-011	
	95	(80 - 120)	MCAWW 300.0A	04/08/11	1101106
		Dilution Factor: 1			
Nitrate as N		Work Order #...: MGPCC1CW		MS Lot-Sample #: A1D070566-011	
	92	(80 - 120)	MCAWW 300.0A	04/08/11	1101114
		Dilution Factor: 1			
Nitrate-Nitrite		Work Order #...: MGPCC1C4		MS Lot-Sample #: A1D070566-011	
	87 N	(90 - 110)	MCAWW 353.2	04/12/11	1102391
		Dilution Factor: 1			
Nitrite as N		Work Order #...: MGPCC1CR		MS Lot-Sample #: A1D070566-011	
	107	(80 - 120)	MCAWW 300.0A	04/08/11	1101108
		Dilution Factor: 1			
Phosphate as P, Ortho		Work Order #...: MGPCC1C0		MS Lot-Sample #: A1D070566-011	
	89	(80 - 120)	MCAWW 300.0A	04/08/11	1101116
		Dilution Factor: 1			
Sulfate		Work Order #...: MGPCC1C2		MS Lot-Sample #: A1D070566-011	
	90	(80 - 120)	MCAWW 300.0A	04/08/11	1101119
		Dilution Factor: 1			

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D070566 **Matrix.....:** WG
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Fluoride			Work Order #...: MGPCP1AR			MS Lot-Sample #: A1D070566-013		
	0.12	2.5	2.6	mg/L	100	MCAWW 300.0A	04/13/11	1104302
			Dilution Factor: 1					

NOTE(S):

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

DENVER DATA

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-14462-1

SDG Number: A1D070566

Job Description: USGS RVAAP

For:
TestAmerica Laboratories, Inc.
4101 Shuffel Street NW
North Canton, OH 44720

Attention: Mr. Mark J. Loeb

Approved for release.
DiLea Griego
Project Manager I
4/21/2011 10:07 AM

DiLea Griego
Project Manager I
dilea.griego@testamericainc.com
04/21/2011

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

CASE NARRATIVE

Client: TestAmerica Laboratories, Inc.

Project: USGS RVAAP

Report Number: 280-14462-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/08/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.1 C and 2.6 C.

TOTAL METALS - METHOD 6010B

The matrix spike / matrix spike duplicate (MS/MSD) samples associated with analysis batch 62167 were performed on FWGRQLMW-007C-0120-GFMS (280-14462-1). The matrix spike (MS) exhibited recoveries outside control limits for Molybdenum.

No other difficulties were encountered.

TOTAL METALS - METHOD 6020

No difficulties were encountered.

DATA REPORTING QUALIFIERS

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Lab Section	Qualifier	Description
Metals		
	F	MS or MSD exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

SAMPLE SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-14462-1	FWGRQLMW-007C-0120-GF	Water	04/06/2011 1519	04/08/2011 1000
280-14462-1MS	FWGRQLMW-007C-0120-GF	Water	04/06/2011 1519	04/08/2011 1000
280-14462-1DU	FWGRQLMW-007C-0120-GF	Water	04/06/2011 1519	04/08/2011 1000
280-14462-2	FWGRQLMW-008C-0130-GF	Water	04/06/2011 1309	04/08/2011 1000
280-14462-3	FWGRQLMW-009C-0140-GF	Water	04/06/2011 1531	04/08/2011 1000
280-14462-4	FWGRQLMW-014C-0150-GF	Water	04/06/2011 0916	04/08/2011 1000
280-14462-5	FWGRQLMW-016C-0160-GF	Water	04/06/2011 1103	04/08/2011 1000
280-14462-6	FWGB12MW-010C-0220-FB	Water	04/06/2011 1405	04/08/2011 1000
280-14462-7	FWGSCFMW-003C-0170-GF	Water	04/06/2011 0922	04/08/2011 1000

EXECUTIVE SUMMARY - Detections

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Lab Sample ID / Analyte	Client Sample ID / Result / Qualifier		Reporting Limit	Units	Method
280-14462-1	**FWGRQLMW-007C-0120-GF**				
Boron	270		100	ug/L	6010B
Molybdenum	5.5	J	20	ug/L	6010B
SiO2, Silica	15000		500	ug/L	6010B
Uranium	1.3		1.0	ug/L	6020
280-14462-2	**FWGRQLMW-008C-0130-GF**				
Boron	170		100	ug/L	6010B
Molybdenum	6.0	J	20	ug/L	6010B
SiO2, Silica	9300		500	ug/L	6010B
Uranium	0.37	J	1.0	ug/L	6020
280-14462-3	**FWGRQLMW-009C-0140-GF**				
Boron	27	J	100	ug/L	6010B
SiO2, Silica	11000		500	ug/L	6010B
Uranium	0.11	J	1.0	ug/L	6020
280-14462-4	**FWGRQLMW-014C-0150-GF**				
Boron	13	J	100	ug/L	6010B
Lithium	4.3	J	10	ug/L	6010B
SiO2, Silica	14000		500	ug/L	6010B
280-14462-5	**FWGRQLMW-016C-0160-GF**				
Boron	21	J	100	ug/L	6010B
Lithium	110		10	ug/L	6010B
SiO2, Silica	18000		500	ug/L	6010B
Uranium	0.38	J	1.0	ug/L	6020
280-14462-7	**FWGSCFMW-003C-0170-GF**				
Boron	29	J	100	ug/L	6010B
Lithium	15		10	ug/L	6010B
SiO2, Silica	12000		500	ug/L	6010B
Uranium	0.026	J	1.0	ug/L	6020

METHOD SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A

Lab References:

TAL DEN = TestAmerica Denver

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

North Canton

METHOD / ANALYST SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Method	Analyst	Analyst ID
SW846 6010B	Bowen, Heidi E	HEB
SW846 6020	Diaz, Luis R	LRD

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Client Sample ID: **FWGRQLMW-007C-0120-GF**

Lab Sample ID: 280-14462-1
Client Matrix: Water

Date Sampled: 04/06/2011 1519
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1741			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	270		4.4	100
Lithium	ND		2.6	10
Molybdenum	5.5	J	3.1	20
SiO2, Silica	15000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	143AREF.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0135			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	1.3		0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Client Sample ID: **FWGRQLMW-008C-0130-GF**

Lab Sample ID: 280-14462-2
Client Matrix: Water

Date Sampled: 04/06/2011 1309
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1750			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	170		4.4	100
Lithium	ND		2.6	10
Molybdenum	6.0	J	3.1	20
SiO2, Silica	9300		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	148SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0149			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.37	J	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Client Sample ID: **FWGRQLMW-009C-0140-GF**

Lab Sample ID: 280-14462-3
Client Matrix: Water

Date Sampled: 04/06/2011 1531
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1752			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	27	J	4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	11000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	149SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0151			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.11	J	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Client Sample ID: **FWGRQLMW-014C-0150-GF**

Lab Sample ID: 280-14462-4
Client Matrix: Water

Date Sampled: 04/06/2011 0916
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1755			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	13	J	4.4	100
Lithium	4.3	J	2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	14000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	150SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0154			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	ND		0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Client Sample ID: **FWGRQLMW-016C-0160-GF**

Lab Sample ID: 280-14462-5
Client Matrix: Water

Date Sampled: 04/06/2011 1103
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1757			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	21	J	4.4	100
Lithium	110		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	18000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	153SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0202			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.38	J	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Client Sample ID: **FWGB12MW-010C-0220-FB**

Lab Sample ID: 280-14462-6
Client Matrix: Water

Date Sampled: 04/06/2011 1405
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1809			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	ND		4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	ND		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	154SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0205			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	ND		0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Client Sample ID: **FWGSCFMW-003C-0170-GF**

Lab Sample ID: 280-14462-7
Client Matrix: Water

Date Sampled: 04/06/2011 0922
Date Received: 04/08/2011 1000

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62167	Instrument ID:	MT_026
Prep Method:	3010A	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1811			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	29	J	4.4	100
Lithium	15		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	12000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62295	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61784	Lab File ID:	155SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0208			Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.026	J	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Method Blank - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	MB 280-61780/1-A	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1736	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Boron	ND		4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	ND		74	500

Lab Control Sample - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	LCS 280-61780/2-A	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1739	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Boron	1000	999	100	86 - 110	
Lithium	1000	1030	103	90 - 112	
Molybdenum	1000	1100	110	90 - 110	
SiO2, Silica	21400	22100	103	90 - 110	

Matrix Spike - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14462-1	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1748	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Boron	270		1000	1270	100	87 - 113	
Lithium	ND		1000	1040	104	89 - 114	
Molybdenum	5.5	J	1000	1100	110	83 - 109	F
SiO2, Silica	15000		21400	37500	107	75 - 141	

North Carleton

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Serial Dilution - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14462-1	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1743	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Boron	270		271	2.2	10	J
Lithium	ND		ND	NC	10	
Molybdenum	5.5	J	ND	NC	10	
SiO2, Silica	15000		14800	1.2	10	

Duplicate - Batch: 280-61780

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14462-1	Analysis Batch:	280-62167	Instrument ID:	MT_026
Client Matrix:	Water	Prep Batch:	280-61780	Lab File ID:	26b041311.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/13/2011 1746	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Boron	270		263	0.9	25	
Lithium	ND		ND	NC	25	
Molybdenum	5.5	J	ND	NC	25	
SiO2, Silica	15000		14600	0.1	20	

North Canton

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Method Blank - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	MB 280-61784/1-A	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	141_BLK.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0129	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Uranium	ND		0.020	1.0

Lab Control Sample - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	LCS 280-61784/2-A	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	142_LCS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0132	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	40.0	42.0	105	85 - 119	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Post Digestion Spike - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14462-1	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	145PDS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0140	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	1.3	200	214	107	75 - 125	

Matrix Spike - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14462-1	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	147_MS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0146	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	1.3	40.0	43.3	105	85 - 119	

North Canton

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

Serial Dilution - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14462-1	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	144SDIL.D
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0138	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Uranium	1.3	1.25	1.7	10	J

Duplicate - Batch: 280-61784

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14462-1	Analysis Batch:	280-62295	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61784	Lab File ID:	146_DU.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/14/2011 0143	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/13/2011 0800				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Uranium	1.3	1.44	13	20	

North Canton

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-61780					
LCS 280-61780/2-A	Lab Control Sample	T	Water	3010A	
MB 280-61780/1-A	Method Blank	T	Water	3010A	
280-14462-1	FWGRQLMW-007C-0120-GF	T	Water	3010A	
280-14462-1DU	Duplicate	T	Water	3010A	
280-14462-1MS	Matrix Spike	T	Water	3010A	
280-14462-2	FWGRQLMW-008C-0130-GF	T	Water	3010A	
280-14462-3	FWGRQLMW-009C-0140-GF	T	Water	3010A	
280-14462-4	FWGRQLMW-014C-0150-GF	T	Water	3010A	
280-14462-5	FWGRQLMW-016C-0160-GF	T	Water	3010A	
280-14462-6	FWGB12MW-010C-0220-FB	T	Water	3010A	
280-14462-7	FWGSCFMW-003C-0170-GF	T	Water	3010A	
Prep Batch: 280-61784					
LCS 280-61784/2-A	Lab Control Sample	T	Water	3020A	
MB 280-61784/1-A	Method Blank	T	Water	3020A	
280-14462-1	FWGRQLMW-007C-0120-GF	T	Water	3020A	
280-14462-1DU	Duplicate	T	Water	3020A	
280-14462-1MS	Matrix Spike	T	Water	3020A	
280-14462-2	FWGRQLMW-008C-0130-GF	T	Water	3020A	
280-14462-3	FWGRQLMW-009C-0140-GF	T	Water	3020A	
280-14462-4	FWGRQLMW-014C-0150-GF	T	Water	3020A	
280-14462-5	FWGRQLMW-016C-0160-GF	T	Water	3020A	
280-14462-6	FWGB12MW-010C-0220-FB	T	Water	3020A	
280-14462-7	FWGSCFMW-003C-0170-GF	T	Water	3020A	
Analysis Batch:280-62167					
LCS 280-61780/2-A	Lab Control Sample	T	Water	6010B	280-61780
MB 280-61780/1-A	Method Blank	T	Water	6010B	280-61780
280-14462-1	FWGRQLMW-007C-0120-GF	T	Water	6010B	280-61780
280-14462-1DU	Duplicate	T	Water	6010B	280-61780
280-14462-1MS	Matrix Spike	T	Water	6010B	280-61780
280-14462-2	FWGRQLMW-008C-0130-GF	T	Water	6010B	280-61780
280-14462-3	FWGRQLMW-009C-0140-GF	T	Water	6010B	280-61780
280-14462-4	FWGRQLMW-014C-0150-GF	T	Water	6010B	280-61780
280-14462-5	FWGRQLMW-016C-0160-GF	T	Water	6010B	280-61780
280-14462-6	FWGB12MW-010C-0220-FB	T	Water	6010B	280-61780
280-14462-7	FWGSCFMW-003C-0170-GF	T	Water	6010B	280-61780

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
Sdg Number: A1D070566

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:280-62295					
LCS 280-61784/2-A	Lab Control Sample	T	Water	6020	280-61784
MB 280-61784/1-A	Method Blank	T	Water	6020	280-61784
280-14462-1	FWGRQLMW-007C-0120-GF	T	Water	6020	280-61784
280-14462-1DU	Duplicate	T	Water	6020	280-61784
280-14462-1MS	Matrix Spike	T	Water	6020	280-61784
280-14462-2	FWGRQLMW-008C-0130-GF	T	Water	6020	280-61784
280-14462-3	FWGRQLMW-009C-0140-GF	T	Water	6020	280-61784
280-14462-4	FWGRQLMW-014C-0150-GF	T	Water	6020	280-61784
280-14462-5	FWGRQLMW-016C-0160-GF	T	Water	6020	280-61784
280-14462-6	FWGB12MW-010C-0220-FB	T	Water	6020	280-61784
280-14462-7	FWGSCFMW-003C-0170-GF	T	Water	6020	280-61784

Report Basis
T = Total

Certification Summary

Client: TestAmerica Laboratories, Inc.
Project/Site: USGS RVAAP

TestAmerica Job ID: 280-14462-1
SDG: A1D070566

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Denver		USDA		P330-08-00036
TestAmerica Denver	A2LA	DoD ELAP	0	2907.01
TestAmerica Denver	A2LA	ISO/IEC 17025	0	2907.01
TestAmerica Denver	Alabama	State Program	4	
TestAmerica Denver	Alaska	Alaska UST	10	UST-30
TestAmerica Denver	Arizona	State Program	9	AZ0713
TestAmerica Denver	Arkansas	State Program	6	88-0687
TestAmerica Denver	California	State Program	9	2513
TestAmerica Denver	Colorado	State Program	8	N/A
TestAmerica Denver	Connecticut	State Program	1	PH-0686
TestAmerica Denver	Florida	NELAC	4	E87667
TestAmerica Denver	Georgia	State Program	4	N/A
TestAmerica Denver	Idaho	State Program	10	CO00026
TestAmerica Denver	Illinois	NELAC	5	200017
TestAmerica Denver	Iowa	State Program	7	370
TestAmerica Denver	Kansas	NELAC	7	E-10166
TestAmerica Denver	Louisiana	NELAC	6	30785
TestAmerica Denver	Maine	State Program	1	CO0002
TestAmerica Denver	Maryland	State Program	3	268
TestAmerica Denver	Minnesota	NELAC	5	8-999-405
TestAmerica Denver	Nevada	State Program	9	CO0026
TestAmerica Denver	New Hampshire	NELAC	1	205310
TestAmerica Denver	New Jersey	NELAC	2	CO004
TestAmerica Denver	New Mexico	State Program	6	N/A
TestAmerica Denver	New York	NELAC	2	11964
TestAmerica Denver	North Carolina	North Carolina DENR	4	358
TestAmerica Denver	North Dakota	State Program	8	R-034
TestAmerica Denver	Oklahoma	State Program	6	8614
TestAmerica Denver	Oregon	NELAC	10	CO200001
TestAmerica Denver	Pennsylvania	NELAC	3	68-00664
TestAmerica Denver	South Carolina	State Program	4	72002
TestAmerica Denver	Tennessee	State Program	4	TN02944
TestAmerica Denver	Texas	NELAC	6	T104704183-08-TX
TestAmerica Denver	Utah	NELAC	8	QUAN5
TestAmerica Denver	Washington	State Program	10	C1284
TestAmerica Denver	West Virginia	West Virginia DEP	3	354
TestAmerica Denver	Wisconsin	State Program	5	999615430

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Denver Job Number: 280-14462-1

SDG No.: A1D070566

Project: USGS RVAAP

Client Sample ID	Lab Sample ID
FWGRQLMW-007C-0120-GF	280-14462-1
FWGRQLMW-008C-0130-GF	280-14462-2
FWGRQLMW-009C-0140-GF	280-14462-3
FWGRQLMW-014C-0150-GF	280-14462-4
FWGRQLMW-016C-0160-GF	280-14462-5
FWGB12MW-010C-0220-FB	280-14462-6
FWGSCFMW-003C-0170-GF	280-14462-7

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGRQLMW-007C-0120-GF
Lab Sample ID: 280-14462-1
Lab Name: TestAmerica Denver
Job No.: 280-14462-1
SDG ID.: A1D070566
Matrix: Water
Date Sampled: 04/06/2011 15:19
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	270	100	4.4	ug/L			1	6010B
7439-93-2	Lithium	ND	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	5.5	20	3.1	ug/L	J		1	6010B
14808-60-7	SiO2, Silica	15000	500	74	ug/L			1	6010B
7440-61-1	Uranium	1.3	1.0	0.020	ug/L			1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGRQLMW-008C-0130-GF
Lab Sample ID: 280-14462-2
Lab Name: TestAmerica Denver
Job No.: 280-14462-1
SDG ID.: A1D070566
Matrix: Water
Date Sampled: 04/06/2011 13:09
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	170	100	4.4	ug/L			1	6010B
7439-93-2	Lithium	ND	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	6.0	20	3.1	ug/L	J		1	6010B
14808-60-7	SiO2, Silica	9300	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.37	1.0	0.020	ug/L	J		1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGRQLMW-009C-0140-GF
Lab Sample ID: 280-14462-3
Lab Name: TestAmerica Denver
Job No.: 280-14462-1
SDG ID.: A1D070566
Matrix: Water
Date Sampled: 04/06/2011 15:31
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	27	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	ND	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	11000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.11	1.0	0.020	ug/L	J		1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGRQLMW-014C-0150-GF
Lab Sample ID: 280-14462-4
Lab Name: TestAmerica Denver
Job No.: 280-14462-1
SDG ID.: A1D070566
Matrix: Water
Date Sampled: 04/06/2011 09:16
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	13	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	4.3	10	2.6	ug/L	J		1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	14000	500	74	ug/L			1	6010B
7440-61-1	Uranium	ND	1.0	0.020	ug/L			1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGRQLMW-016C-0160-GF
Lab Sample ID: 280-14462-5
Lab Name: TestAmerica Denver
Job No.: 280-14462-1
SDG ID.: A1D070566
Matrix: Water
Date Sampled: 04/06/2011 11:03
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	21	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	110	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	18000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.38	1.0	0.020	ug/L	J		1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGB12MW-010C-0220-FB
Lab Sample ID: 280-14462-6
Lab Name: TestAmerica Denver
Job No.: 280-14462-1
SDG ID.: A1D070566
Matrix: Water
Date Sampled: 04/06/2011 14:05
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	ND	100	4.4	ug/L			1	6010B
7439-93-2	Lithium	ND	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	ND	500	74	ug/L			1	6010B
7440-61-1	Uranium	ND	1.0	0.020	ug/L			1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGSCFMW-003C-0170-GF
Lab Sample ID: 280-14462-7
Lab Name: TestAmerica Denver
Job No.: 280-14462-1
SDG ID.: A1D070566
Matrix: Water
Date Sampled: 04/06/2011 09:22
Reporting Basis: WET
Date Received: 04/08/2011 10:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	29	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	15	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	12000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.026	1.0	0.020	ug/L	J		1	6020

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

ICV Source: ICP ICVL_00049 Concentration Units: ug/L

CCV Source: ICP CCVL_00150

Analyte	ICV 280-62167/7 04/13/2011 12:36				CCV 280-62167/106 04/13/2011 17:30				CCV 280-62167/120 04/13/2011 18:02			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Boron	261		250	105	487		500	97	490		500	98
Lithium	259		250	104	982		1000	98	992		1000	99
Molybdenum	243		250	97	533		500	107	535		500	107
SiO2, Silica	4300		4280	101	10700		10700	100	10800		10700	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

ICV Source: ICP ICVL_00049 Concentration Units: ug/L

CCV Source: ICP CCVL_00150

Analyte	CCV 280-62167/133 04/13/2011 18:32											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Boron	487		500	97								
Lithium	987		1000	99								
Molybdenum	539		500	108								
SiO2, Silica	10700		10700	100								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

ICV Source: MS ICV_00314 Concentration Units: ug/L

CCV Source: MS CCV_00315

Analyte	ICV 280-62295/5 04/13/2011 19:14				CCV 280-62295/17 04/13/2011 19:46				CCV 280-62295/50 04/14/2011 01:21			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Uranium	40.6		40.0	101	50.0		50.0	100	50.6		50.0	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

ICV Source: MS ICV_00314 Concentration Units: ug/L

CCV Source: MS CCV_00315

Analyte	CCV 280-62295/63 04/14/2011 01:57				CCV 280-62295/75 04/14/2011 02:30							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Uranium	51.0		50.0	102	54.0		50.0	108				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Analysis Method: 6010B Instrument ID: MT_026

Lab Sample ID: CRI 280-62167/12 Concentration Units: ug/L

CRQL Check Standard Source: ICP RL STD_00346

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Boron	100	108		108	50-150
Lithium	10.0	9.61	J	96	50-150
Molybdenum	10.0	10.1	J	101	50-150
SiO2, Silica	1070	1120		105	50-150

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Analysis Method: 6020 Instrument ID: MT_024

Lab Sample ID: CRI 280-62295/9 Concentration Units: ug/L

CRQL Check Standard Source: MS RL STD_00324

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Uranium	1.00	1.02		102	50-150

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Concentration Units: ug/L

Analyte	RL	ICB 280-62167/11 04/13/2011 12:45		CCB 280-62167/107 04/13/2011 17:32		CCB 280-62167/121 04/13/2011 18:04		CCB 280-62167/134 04/13/2011 18:34	
		Found	C	Found	C	Found	C	Found	C
Boron	100	ND		ND		ND		ND	
Lithium	10	ND		ND		ND		ND	
Molybdenum	20	ND		ND		ND		ND	
SiO2, Silica	1100	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Concentration Units: ug/L

Analyte	RL	ICB 280-62295/8 04/13/2011 19:22		CCB 280-62295/19 04/13/2011 19:52		CCB 280-62295/52 04/14/2011 01:27		CCB 280-62295/64 04/14/2011 02:00	
		Found	C	Found	C	Found	C	Found	C
Uranium	1.0	ND		0.0425	J	ND		0.0382	J

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Concentration Units: ug/L

Analyte	RL	CCB 280-62295/76 04/14/2011 02:33							
		Found	C	Found	C	Found	C	Found	C
Uranium	1.0	0.0381	J						

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Concentration Units: ug/L Lab Sample ID: MB 280-61780/1-A

Instrument Code: MT_026 Batch No.: 62167

CAS No.	Analyte	Concentration	C	Q	Method
7440-42-8	Boron	ND			6010B
7439-93-2	Lithium	ND			6010B
7439-98-7	Molybdenum	ND			6010B
14808-60-7	SiO2, Silica	ND			6010B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Concentration Units: ug/L Lab Sample ID: MB 280-61784/1-A

Instrument Code: MT_024 Batch No.: 62295

CAS No.	Analyte	Concentration	C	Q	Method
7440-61-1	Uranium	ND			6020

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Lab Sample ID: ICSA 280-62167/13 Instrument ID: MT_026

Lab File ID: 26b041311.asc ICS Source: ICP ICSA_00037

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Boron		**-0.730**	
Lithium		**-0.360**	
Molybdenum		**-1.53**	
SiO2, Silica		**13.4**	
Aluminum	*500000*	*507950*	*102*
Antimony		*15.6*	
Arsenic		*4.05*	
Barium		*1.10*	
Beryllium		*-0.0700*	
Bismuth		*33.1*	
Cadmium		*-0.460*	
Calcium	*500000*	*460710*	*92*
Chromium		*2.02*	
Cobalt		*-1.29*	
Copper		*4.64*	
Iron	*200000*	*186030*	*93*
Lead		*-4.82*	
Magnesium	*500000*	*498380*	*100*
Manganese		*2.32*	
Nickel		*0.850*	
Phosphorus		*-0.280*	
Potassium		*139*	
Selenium		*2.43*	
Silicon		*6.24*	
Silver		*0.0200*	
Sodium		*137*	
Strontium		*-2.43*	
Thallium		*-1.93*	
Thorium		*19.1*	
Tin		*-0.340*	
Titanium		*-2.93*	
Vanadium		*3.28*	
Zinc		*5.95*	
Zirconium		*4.68*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Lab Sample ID: ICSAB 280-62167/14 Instrument ID: MT_026

Lab File ID: 26b041311.asc ICS Source: ICP ICSAB_00029

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Boron	**2000**	**1946**	**97**
Lithium	**1000**	**1014**	**101**
Molybdenum	**1000**	**984**	**98**
SiO2, Silica	**21400**	**21582**	**101**
Aluminum	*500000*	*513280*	*103*
Antimony	*1000*	*1033*	*103*
Arsenic	*2000*	*2088*	*104*
Barium	*500*	*501*	*100*
Beryllium	*500*	*486*	*97*
Bismuth	*1000*	*1047*	*105*
Cadmium	*1000*	*1039*	*104*
Calcium	*500000*	*470530*	*94*
Chromium	*500*	*500*	*100*
Cobalt	*500*	*481*	*96*
Copper	*500*	*528*	*106*
Iron	*200000*	*188470*	*94*
Lead	*1000*	*984*	*98*
Magnesium	*500000*	*499350*	*100*
Manganese	*500*	*513*	*103*
Nickel	*1000*	*967*	*97*
Phosphorus	*2000*	*2054*	*103*
Potassium	*50000*	*51462*	*103*
Selenium	*5000*	*4709*	*94*
Silicon	*10000*	*10085*	*101*
Silver	*1000*	*1077*	*108*
Sodium	*50000*	*50149*	*100*
Strontium	*1000*	*976*	*98*
Thallium	*10000*	*9091*	*91*
Thorium	*2000*	*2109*	*105*
Tin	*10000*	*9510*	*95*
Titanium	*1000*	*1013*	*101*
Vanadium	*500*	*513*	*103*
Zinc	*1000*	*1017*	*102*
Zirconium	*1000*	*976*	*98*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Lab Sample ID: ICSA 280-62295/11 Instrument ID: MT_024

Lab File ID: 011ICSA.D ICS Source: MS ICSA_00314

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Uranium		**0.0064**	
Antimony		*0.256*	
Arsenic		*0.216*	
Barium		*0.173*	
Beryllium		*0.0044*	
Cadmium		*0.348*	
Chromium		*2.71*	
Cobalt		*0.0280*	
Copper		*0.219*	
Lead		*0.127*	
Manganese		*0.582*	
Molybdenum	*2000*	*2209*	*110*
Nickel		*1.02*	
Selenium		*-0.0858*	
Silver		*0.0921*	
Thallium		*0.0312*	
Thorium		*0.375*	
Tin		*0.206*	
Vanadium		*0.0980*	
Zinc		*1.52*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Lab Sample ID: ICSAB 280-62295/12 Instrument ID: MT_024

Lab File ID: 012ICSB.D ICS Source: MS ICSAB_00316

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Uranium	**100**	**106**	**106**
Antimony	*100*	*99.6*	*100*
Arsenic	*100*	*102*	*102*
Barium	*100*	*107*	*106*
Beryllium	*100*	*91.8*	*92*
Cadmium	*100*	*95.0*	*95*
Chromium	*100*	*110*	*110*
Cobalt	*100*	*102*	*102*
Copper	*100*	*89.9*	*90*
Lead	*100*	*94.5*	*94*
Manganese	*100*	*103*	*103*
Molybdenum	*2100*	*2313*	*110*
Nickel	*100*	*95.4*	*95*
Selenium	*100*	*104*	*104*
Silver	*100*	*86.5*	*86*
Thallium	*100*	*98.1*	*98*
Thorium	*100*	*117*	*117*
Tin	*100*	*103*	*103*
Vanadium	*100*	*114*	*114*
Zinc	*100*	*95.5*	*96*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Lab Sample ID: ICSA 280-62295/43 Instrument ID: MT_024

Lab File ID: 103ICSA.D ICS Source: MS ICSA_00314

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Uranium		**0.0243**	
Antimony		*0.269*	
Arsenic		*0.337*	
Barium		*0.164*	
Beryllium		*0.0072*	
Cadmium		*0.230*	
Chromium		*2.62*	
Cobalt		*0.0591*	
Copper		*0.300*	
Lead		*0.127*	
Manganese		*0.663*	
Molybdenum	*2000*	*2204*	*110*
Nickel		*1.27*	
Selenium		*0.302*	
Silver		*0.0980*	
Thallium		*0.0263*	
Tin		*0.332*	
Vanadium		*0.0639*	
Zinc		*1.76*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Lab Sample ID: ICSAB 280-62295/44 Instrument ID: MT_024

Lab File ID: 104ICSB.D ICS Source: MS ICSAB_00316

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Uranium	**100**	**105**	**105**
Antimony	*100*	*104*	*104*
Arsenic	*100*	*104*	*104*
Barium	*100*	*109*	*109*
Beryllium	*100*	*94.7*	*95*
Cadmium	*100*	*97.5*	*97*
Chromium	*100*	*110*	*110*
Cobalt	*100*	*104*	*104*
Copper	*100*	*88.7*	*89*
Lead	*100*	*93.0*	*93*
Manganese	*100*	*103*	*103*
Molybdenum	*2100*	*2391*	*114*
Nickel	*100*	*97.5*	*98*
Selenium	*100*	*104*	*104*
Silver	*100*	*87.6*	*88*
Thallium	*100*	*98.9*	*99*
Thorium	*100*	*119*	*119*
Tin	*100*	*104*	*104*
Vanadium	*100*	*115*	*115*
Zinc	*100*	*101*	*101*

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

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: FWGRQLMW-007C-0120-GF MS Lab ID: 280-14462-1 MS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Boron	1270		270		1000	100	87-113		6010B
Lithium	1040		ND		1000	104	89-114		6010B
Molybdenum	1100		5.5	J	1000	110	83-109	F	6010B
SiO2, Silica	37500		15000		21400	107	75-141		6010B
Uranium	43.3		1.3		40.0	105	85-119		6020

SSR = Spiked Sample Result

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

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: FWGRQLMW-007C-0120-GF PDS Lab ID: 280-14462-1 PDS

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Uranium	214		1.3		200	107	75-125		6020

SSR = Spiked Sample Result

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

FORM VB - IN

6-IN
DUPLICATES
METALS

Client ID: FWGRQLMW-007C-0120-GF DU Lab ID: 280-14462-1 DU

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

% Solids for Sample: % Solids for Duplicate:

Matrix: Water Concentration Units: ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Boron	100	270		263		0.9		6010B
Lithium	10	ND		ND		NC		6010B
Molybdenum	20	5.5	J	ND		NC		6010B
SiO2, Silica	500	15000		14600		0.1		6010B
Uranium	1.0	1.3		1.44		13		6020

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

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-61780/2-A

Lab Name: TestAmerica Denver Job No.: 280-14462-1

Sample Matrix: Water LCS Source: ICP SPK 2A_00024

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Boron	1000	999		100	86	110		6010B
Lithium	1000	1030		103	90	112		6010B
Molybdenum	1000	1100		110	90	110		6010B
SiO2, Silica	21400	22100		103	90	110		6010B

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-61784/2-A

Lab Name: TestAmerica Denver Job No.: 280-14462-1

Sample Matrix: Water LCS Source: MS CALSTD-1_00037

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Uranium	40.0	42.0		105	85	119		6020

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

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-14462-1

SDG No: A1D070566

Lab Name: TestAmerica Denver Job No: 280-14462-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Boron	270		271	J	2.2		6010B
Lithium	ND		ND		NC		6010B
Molybdenum	5.5	J	ND		NC		6010B
SiO2, Silica	15000		14800		1.2		6010B

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-14462-1

SDG No: A1D070566

Lab Name: TestAmerica Denver Job No: 280-14462-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Uranium	1.3		1.25	J	1.7		6020

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

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14462-1

SDG Number: A1D070566

Matrix: Water Instrument ID: MT_026

Analysis Method: 6010B MDL Date: 02/23/2011 08:42

Prep Method: 3010A

Leach Method:

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Boron	208.9	100	4.37
Lithium	670.7	10	2.61
Molybdenum	202	20	3.13
SiO2, Silica	288.1	500	74.3

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14462-1

SDG Number: A1D070566

Matrix: Water Instrument ID: MT_026

Analysis Method: 6010B XMDL Date: 02/23/2011 08:43

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Boron		100	4.37
Lithium		10	2.61
Molybdenum		20	3.13
SiO2, Silica		1100	74.3

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14462-1

SDG Number: A1D070566

Matrix: Water Instrument ID: MT_024

Analysis Method: 6020 MDL Date: 04/26/2010 12:11

Prep Method: 3020A

Leach Method:

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Uranium	238	1	0.02

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14462-1

SDG Number: A1D070566

Matrix: Water Instrument ID: MT_024

Analysis Method: 6020 XMDL Date: 04/26/2010 12:12

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Uranium		1	0.02

North Canton

62295 – 6020 Water
62297 – 200.8
62300 – Soil

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Denver

ICP/MS Technical Data Review Checklist

Lab Project ID Number(s): see attached cover sheet Check Method/SOP Used: ☐6020/DV-MT-0018 ☐200.8/DV-MT-0002

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments & Samples Affected
Tune					
1. Tune solution analyzed min. of 4 times for 6020 or 5 times for 200.8?	✓			✓	
2. Tune RSD <5%?	✓			✓	
2. Resolution ≤ 0.9 AMU full width at 10% peak height? **NOTE**: This also satisfies 200.8, 1.0 AMU at 5% peak height	✓			✓	
Initial Calibration					
1. Done with a minimum of 3 integrations of a high standard and blank?	✓			✓	
2. ICV/CCV run at beginning of run, 10% frequency, and end of run? Results with 10% of expected value?	✓			✓	
3. ICB/CCB run at beginning of run, 10% frequency, and end of run? Results +/- RL	✓			✓	
4. ICSA/AB analyzed at beginning of run and every 12 hours and results 80-120% of TV?	✓			✓	
5. RL Std analyzed at beginning of run and results +/- 50% of TV(for AFCEE 4.0, DoD V3 +/- 20% of true value)?	✓			✓	
Client Samples & QC Sample Results					
1. Were all samples within linear range, ≤ 90% of LDR for 200.8?	✓			✓	
2. Dilutions due to target elements? ____ Dilutions for other reasons? ✓	✓			✓	
3. All reported results bracketed by in control QC?	✓			✓	
4. All 6020 internal standards for all analyses 30-120% of intensities in blank or all 200.8 internal standards 60-125%?	✓			✓	
5. Was a 5X serial dilution analyzed for 6020 and, if so, are results ± 10% of original result, if original ≥ 100x MDL?	✓			✓	
6. LCS included in batch and within QC limits?	✓			✓	
7. Method blank included and <1/2RL?	✓			✓	
8. MS and MSD included in batch?	✓			✓	
9. PDS analyzed and recovery 75-125%?	✓			✓	
10. Manual calculations documented properly and checked?	✓			✓	
11. Are non-conformances documented on an NCM?	✓			✓	
12. Is the appropriate raw data included?	✓			✓	
13. Are all results manually entered into LIMS verified? Are all electronic data files archived to the appropriate network locations?	✓			✓	
14. Were special client requirements met?	✓			✓	

1st Level Reviewer: _____ Date: 4/15/11

2nd Level Reviewer: _____ Date: 4/18/11

L:\QA\Edit\FORMS\Data Review\ICPMS

Rev. 2, 6/12/08

METALS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Batch Number: 61780 Batch Start Date: 04/13/11 08:00 Batch Analyst: Niman, Katie M

Batch Method: 3010A Batch End Date: 04/13/11 13:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ICP SPK 2A 00024	ICP SPK 3A 00026	
MB 280-61780/1		3010A, 6010B			50 mL	50 mL			
LCS 280-61780/2		3010A, 6010B			50 mL	50 mL	0.5 mL	0.5 mL	
280-14462-A-1	FWGRQLMW-007C-01 20-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14462-A-1 DU	FWGRQLMW-007C-01 20-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14462-A-1 MS	FWGRQLMW-007C-01 20-GF	3010A, 6010B	T	<2	50 mL	50 mL	0.5 mL	0.5 mL	
280-14462-A-2	FWGRQLMW-008C-01 30-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14462-A-3	FWGRQLMW-009C-01 40-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14462-A-4	FWGRQLMW-014C-01 50-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14462-A-5	FWGRQLMW-016C-01 60-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14462-A-6	FWGB12MW-010C-02 20-FB	3010A, 6010B	T	<2	50 mL	50 mL			
280-14462-A-7	FWGSCFMW-003C-01 70-GF	3010A, 6010B	T	<2	50 mL	50 mL			

Batch Notes	
Lot # of hydrochloric acid	J46037
Lot # of Nitric Acid	K09041
Hot Block ID number	05
Oven, Bath or Block Temperature 1	95 Degrees C
Oven, Bath or Block Temperature 2	95 Degrees C
Pipette ID	MET-007
Person who witnessed spiking	KMN
ID number of the thermometer	0908002329
Digestion Tube/Cup Lot #	1010191
Uncorrected Temperature	95 Degrees C
Uncorrected Temperature 2	95 Degrees C

Basis	Basis Description
T	Total/NA

METALS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-14462-1

SDG No.: A1D070566

Batch Number: 61784 Batch Start Date: 04/13/11 08:00 Batch Analyst: Niman, Katie M

Batch Method: 3020A Batch End Date: 04/13/11 13:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MS CALSTD-1 00037	MS CALSTD-2 00036	
MB 280-61784/1		3020A, 6020			50 mL	50 mL			
LCS 280-61784/2		3020A, 6020			50 mL	50 mL	0.1 mL	0.1 mL	
280-14462-A-1	FWGRQLMW-007C-01 20-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14462-A-1 DU	FWGRQLMW-007C-01 20-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14462-A-1 MS	FWGRQLMW-007C-01 20-GF	3020A, 6020	T	<2	50 mL	50 mL	0.1 mL	0.1 mL	
280-14462-A-2	FWGRQLMW-008C-01 30-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14462-A-3	FWGRQLMW-009C-01 40-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14462-A-4	FWGRQLMW-014C-01 50-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14462-A-5	FWGRQLMW-016C-01 60-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14462-A-6	FWGB12MW-010C-02 20-FB	3020A, 6020	T	<2	50 mL	50 mL			
280-14462-A-7	FWGSCFMW-003C-01 70-GF	3020A, 6020	T	<2	50 mL	50 mL			

Batch Notes	
Lot # of Nitric Acid	K09041
Hot Block ID number	09
Oven, Bath or Block Temperature 1	92 Degrees C
Oven, Bath or Block Temperature 2	95 Degrees C
Pipette ID	MET-015
ID number of the thermometer	3967
Digestion Tube/Cup Lot #	1010191

Basis	Basis Description
T	Total/NA

Shipping and Receiving Documents

Login Sample Receipt Checklist

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14462-1
SDG Number: A1D070566

Login Number: 14462
List Number: 1
Creator: Bindel, Aaron M

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

3.1°, 2.6°C IR1
MB 4/8/11

North Canton

TestAmerica Laboratories, Inc.

Laboratory **TestAmerica Denver**
4955 Yarrow Street
Arvada, CO 80002

SAMPLE ANALYSIS REQUISTION
Lab Request SR126383

Report Package: **Expanded Deliverables**
Need Analytical Report 2011-04-21

Client Code: 1434673

Project Manager: MARK LOEB

Sample I.D.	Work Order Number	Client Sample ID	Sampling Date	Analysis Required
A1D070566-2	MGPAL	FWGRQLMW-007C-0120-GF	2011-04-06 15:19	WATER, 6020, Uranium by ICP/MS (Denver)
A1D070566-2	MGPAL	FWGRQLMW-007C-0120-GF	2011-04-06 15:19	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D070566-4	MGPAV	FWGRQLMW-008C-0130-GF	2011-04-06 13:09	WATER, 6020, Uranium by ICP/MS (Denver)
A1D070566-4	MGPAV	FWGRQLMW-008C-0130-GF	2011-04-06 13:09	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D070566-6	MGPA3	FWGRQLMW-009C-0140-GF	2011-04-06 15:31	WATER, 6020, Uranium by ICP/MS (Denver)
A1D070566-6	MGPA3	FWGRQLMW-009C-0140-GF	2011-04-06 15:31	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D070566-8	MGPA6	FWGRQLMW-014C-0150-GF	2011-04-06 9:16	WATER, 6020, Uranium by ICP/MS (Denver)
A1D070566-8	MGPA6	FWGRQLMW-014C-0150-GF	2011-04-06 9:16	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D070566-10	MGPA8	FWGRQLMW-016C-0160-GF	2011-04-06 11:03	WATER, 6020, Uranium by ICP/MS (Denver)
A1D070566-10	MGPA8	FWGRQLMW-016C-0160-GF	2011-04-06 11:03	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D070566-11	MGPCC	FWGB12MW-010C-0220-FB	2011-04-06 14:05	WATER, 6020, Uranium by ICP/MS (Denver)

1 XL

1 XL

Page 585 of 586

Please use Client Sample ID for report

Call MARK LOEB with questions at 330-497-9396

at the TAL North Canton Laboratory

Shipping Method: FED-EX

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: _____ Date/Time: 4/7/11 4:00pm

Relinquished by: _____ Date/Time: _____

Received for lab by: _____ Date/Time: 4/8/11 1000

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

04/21/2011 757

TestAmerica Laboratories, Inc.

SAMPLE ANALYSIS REQUISTION

Laboratory **TestAmerica Denver**
4955 Yarrow Street

Arvada, CO 80002

Lab Request SR126383

Report Package: **Expanded Deliverables**

Need Analytical Report 2011-04-21

Client Code: 1434673

Project Manager: MARK LOEB

Sample I.D.	Work Order Number	Client Sample ID	Sampling Date	Analysis Required
A1D070566-11	MGPCC	FWGB12MW-010C-0220-FB	2011-04-06 14:05	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D070566-12	MGPCK	FWGSCFMW-003C-0170-GF	2011-04-06 9:22	WATER, 6020, Uranium by ICP/MS (Denver)
A1D070566-12	MGPCK	FWGSCFMW-003C-0170-GF	2011-04-06 9:22	WATER, 6010B, Metals B Li Mo Si (Denver)

Please use Client Sample ID for report

Call MARK LOEB with questions at 330-497-9396

at the TAL North Canton Laboratory

Shipping Method: FED-EX

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: _____ Date/Time: 4/7/11 4:00pm

Relinquished by: _____ Date/Time: _____

Received for lab by: _____ Date/Time: 4/8/11 1000

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

WEST SACRAMENTO DATA

Case Narrative

TestAmerica West Sacramento Project Number A1D070566

General Comments
The samples were received at 1 degrees C.

Following US EPA Region V guidelines, manual integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure, Acceptable Manual Integration Practices, SOP No.: S-Q-004, including Addendum 1. The reasons for manual integration have been documented on the affected chromatograms, which are provided in the raw data package. The raw data also includes the original chromatograms prior to any manual integration being performed. The following samples and analytes required manual integration:

LC10
8330 MRL standard (analyzed on 4/16/11 @ 06:49) - Tetryl & PETN
8330 MRL standard (analyzed on 4/13/11 @11:49) – Tetryl, 3-Nitrotoluene, & PETN

WATER, 8330, Explosives
Sample(s): 11
There was insufficient sample volume to prepare a matrix spike/matrix spike duplicate (MS/MSD) pair with this batch.

Sample(s): 11
The percent difference values for RDX or 4-Amino-2,6-Dinitrotoluene & 2-Nitrotoluene are above the project specific acceptance limit in the associated MRL standards. For corrective action a standard at approximately 2X the MDL was analyzed and the analytes were detected.

WATER, 353.2, Nitrate-Nitrite
Sample(s): 11
The matrix spikes, which were performed on sample 11, have low recoveries due to possible matrix interferences. Since the laboratory control sample met acceptance criteria, no corrective action was performed.

There were no other anomalies associated with this project.

WATER, 8330, Explosives

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

HPLC

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1AE **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11
Prep Date.....: 04/13/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1.07 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3,5-Trinitrobenzene	ND	0.11	ug/L
1,3-Dinitrobenzene	ND	0.11	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.11	ug/L
2,4,6-Trinitrotoluene	ND	0.11	ug/L
2,4-Dinitrotoluene	ND	0.11	ug/L
2,6-Dinitrotoluene	ND	0.11	ug/L
2-Nitrotoluene	ND	0.54	ug/L
3-Nitrotoluene	ND	0.54	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.11	ug/L
4-Nitrotoluene	ND	0.54	ug/L
HMX	ND	0.11	ug/L
Nitrobenzene	ND	0.11	ug/L
Nitroglycerin	ND	0.70	ug/L
RDX	ND	0.11	ug/L
PETN	ND	0.70	ug/L
Tetryl	ND	0.11	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	101	(50 - 150)

QC DATA ASSOCIATION SUMMARY

A1D070566

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
011	WQ	SW846 8330		1103098	
	WQ	SW846 8330 (Modif		1102416	1102228

METHOD BLANK REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AA **Matrix.....:** WATER
MB Lot-Sample #: G1D130000-098

Prep Date.....: 04/13/11
Analysis Date..: 04/16/11 **Prep Batch #...:** 1103098
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,3,5-Trinitrobenzene	ND	0.10	ug/L	SW846 8330
1,3-Dinitrobenzene	ND	0.10	ug/L	SW846 8330
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	SW846 8330
2,4,6-Trinitrotoluene	ND	0.10	ug/L	SW846 8330
2,4-Dinitrotoluene	ND	0.10	ug/L	SW846 8330
2,6-Dinitrotoluene	ND	0.10	ug/L	SW846 8330
2-Nitrotoluene	ND	0.50	ug/L	SW846 8330
3-Nitrotoluene	ND	0.50	ug/L	SW846 8330
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	SW846 8330
4-Nitrotoluene	ND	0.50	ug/L	SW846 8330
HMX	ND	0.10	ug/L	SW846 8330
Nitrobenzene	ND	0.10	ug/L	SW846 8330
Nitroglycerin	ND	0.65	ug/L	SW846 8330
RDX	ND	0.10	ug/L	SW846 8330
PETN	ND	0.65	ug/L	SW846 8330
Tetryl	ND	0.10	ug/L	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	102	(50 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD
Prep Date.....: 04/13/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,3,5-Trinitrobenzene	1.0	1.1	ug/L	115		SW846 8330
	1.0	1.1	ug/L	114	0.61	SW846 8330
1,3-Dinitrobenzene	1.0	1.2	ug/L	117		SW846 8330
	1.0	1.2	ug/L	116	0.25	SW846 8330
2-Amino-4,6-dinitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	110	0.45	SW846 8330
2,4,6-Trinitrotoluene	1.0	0.90	ug/L	90		SW846 8330
	1.0	0.89	ug/L	89	1.4	SW846 8330
2,4-Dinitrotoluene	1.0	1.1	ug/L	112		SW846 8330
	1.0	1.1	ug/L	111	0.98	SW846 8330
2,6-Dinitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	111	0.36	SW846 8330
2-Nitrotoluene	1.0	1.1	ug/L	110		SW846 8330
	1.0	1.1	ug/L	110	0.090	SW846 8330
3-Nitrotoluene	1.0	1.1	ug/L	109		SW846 8330
	1.0	1.1	ug/L	108	0.27	SW846 8330
4-Amino-2,6-dinitrotoluene	1.0	1.1	ug/L	109		SW846 8330
	1.0	1.1	ug/L	107	1.1	SW846 8330
4-Nitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	110	0.63	SW846 8330
HMX	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	111	0.090	SW846 8330
Nitrobenzene	1.0	1.1	ug/L	112		SW846 8330
	1.0	1.1	ug/L	112	0.17	SW846 8330
Nitroglycerin	5.0	5.1	ug/L	102		SW846 8330
	5.0	5.1	ug/L	101	0.94	SW846 8330
RDX	1.0	1.2	ug/L	116		SW846 8330
	1.0	1.2	ug/L	117	0.68	SW846 8330
PETN	5.0	5.0	ug/L	100		SW846 8330
	5.0	4.9	ug/L	98	1.5	SW846 8330
Tetryl	1.0	1.0	ug/L	101		SW846 8330
	1.0	1.0	ug/L	100	0.90	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	106	(50 - 150)
	106	(50 - 150)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD
Prep Date.....: 04/13/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3,5-Trinitrobenzene	115	(53 - 135)			SW846 8330
	114	(53 - 135)	0.61	(0-30)	SW846 8330
1,3-Dinitrobenzene	117	(54 - 120)			SW846 8330
	116	(54 - 120)	0.25	(0-30)	SW846 8330
2-Amino-4,6-dinitrotoluene	111	(53 - 120)			SW846 8330
	110	(53 - 120)	0.45	(0-30)	SW846 8330
2,4,6-Trinitrotoluene	90	(37 - 120)			SW846 8330
	89	(37 - 120)	1.4	(0-30)	SW846 8330
2,4-Dinitrotoluene	112	(58 - 136)			SW846 8330
	111	(58 - 136)	0.98	(0-30)	SW846 8330
2,6-Dinitrotoluene	111	(52 - 144)			SW846 8330
	111	(52 - 144)	0.36	(0-30)	SW846 8330
2-Nitrotoluene	110	(52 - 120)			SW846 8330
	110	(52 - 120)	0.090	(0-30)	SW846 8330
3-Nitrotoluene	109	(48 - 136)			SW846 8330
	108	(48 - 136)	0.27	(0-30)	SW846 8330
4-Amino-2,6-dinitrotoluene	109	(58 - 159)			SW846 8330
	107	(58 - 159)	1.1	(0-30)	SW846 8330
4-Nitrotoluene	111	(46 - 136)			SW846 8330
	110	(46 - 136)	0.63	(0-30)	SW846 8330
HMX	111	(45 - 140)			SW846 8330
	111	(45 - 140)	0.090	(0-30)	SW846 8330
Nitrobenzene	112	(49 - 120)			SW846 8330
	112	(49 - 120)	0.17	(0-30)	SW846 8330
Nitroglycerin	102	(60 - 120)			SW846 8330
	101	(60 - 120)	0.94	(0-60)	SW846 8330
RDX	116	(39 - 120)			SW846 8330
	117	(39 - 120)	0.68	(0-30)	SW846 8330
PETN	100	(60 - 120)			SW846 8330
	98	(60 - 120)	1.5	(0-30)	SW846 8330
Tetryl	101	(30 - 120)			SW846 8330
	100	(30 - 120)	0.90	(0-30)	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	106	(50 - 150)
	106	(50 - 150)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD

NOTE(S):

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

Bold print denotes control parameters

WATER, Nitroguanidine

U.S.Geological Survey (USGS)

Client Sample ID: FWGB12MW-010C-0220-FB

Dissolved HPLC

Lot-Sample #...: A1D070566-011 **Work Order #...:** MGPCC1A9 **Matrix.....:** WQ
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11
Prep Date.....: 04/12/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1 **Method.....:** SW846 8330 (Modif

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

QC DATA ASSOCIATION SUMMARY

A1D070566

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
011	WQ	SW846 8330		1103098	
	WQ	SW846 8330 (Modif		1102416	1102228

METHOD BLANK REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXET1AA **Matrix.....:** WATER
MB Lot-Sample #: G1D120000-416

Prep Date.....: 04/12/11
Analysis Date..: 04/19/11 **Prep Batch #...:** 1102416
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Nitroguanidine	ND	20	ug/L	SW846 8330 (Modif

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXET1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1D120000-416
Prep Date.....: 04/12/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Nitroguanidine	**250**	**260**	**ug/L**	**103**	**SW846 8330 (Modi**

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXET1AC **Matrix.....:** WATER
LCS Lot-Sample#: G1D120000-416
Prep Date.....: 04/12/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Nitroguanidine	**103**	**(73 - 117)**	**SW846 8330 (Modified**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGP0L1AJ-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080404-001 MGP0L1AK-MSD
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11
Prep Date.....: 04/12/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Nitroguanidine	**ND**	**250**	**260**	**ug/L**	**104**		**SW846 8330 (Modified**
	ND	**250**	**260**	**ug/L**	**105**	**1.2**	**SW846 8330 (Modified**

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGP0L1AJ-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080404-001 MGP0L1AK-MSD
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11
Prep Date.....: 04/12/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Nitroguanidine	**104**	**(73 - 117)**			**SW846 8330 (Modified**
	105	**(73 - 117)**	**1.2**	**(0-15)**	**SW846 8330 (Modified**

NOTE(S):

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

Bold print denotes control parameters

WATER, 8330, Explosives

QC Summary

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD
Prep Date.....: 04/13/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,3,5-Trinitrobenzene	1.0	1.1	ug/L	115		SW846 8330
	1.0	1.1	ug/L	114	0.61	SW846 8330
1,3-Dinitrobenzene	1.0	1.2	ug/L	117		SW846 8330
	1.0	1.2	ug/L	116	0.25	SW846 8330
2-Amino-4,6-dinitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	110	0.45	SW846 8330
2,4,6-Trinitrotoluene	1.0	0.90	ug/L	90		SW846 8330
	1.0	0.89	ug/L	89	1.4	SW846 8330
2,4-Dinitrotoluene	1.0	1.1	ug/L	112		SW846 8330
	1.0	1.1	ug/L	111	0.98	SW846 8330
2,6-Dinitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	111	0.36	SW846 8330
2-Nitrotoluene	1.0	1.1	ug/L	110		SW846 8330
	1.0	1.1	ug/L	110	0.090	SW846 8330
3-Nitrotoluene	1.0	1.1	ug/L	109		SW846 8330
	1.0	1.1	ug/L	108	0.27	SW846 8330
4-Amino-2,6-dinitrotoluene	1.0	1.1	ug/L	109		SW846 8330
	1.0	1.1	ug/L	107	1.1	SW846 8330
4-Nitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	110	0.63	SW846 8330
HMX	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	111	0.090	SW846 8330
Nitrobenzene	1.0	1.1	ug/L	112		SW846 8330
	1.0	1.1	ug/L	112	0.17	SW846 8330
Nitroglycerin	5.0	5.1	ug/L	102		SW846 8330
	5.0	5.1	ug/L	101	0.94	SW846 8330
RDX	1.0	1.2	ug/L	116		SW846 8330
	1.0	1.2	ug/L	117	0.68	SW846 8330
PETN	5.0	5.0	ug/L	100		SW846 8330
	5.0	4.9	ug/L	98	1.5	SW846 8330
Tetryl	1.0	1.0	ug/L	101		SW846 8330
	1.0	1.0	ug/L	100	0.90	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	106	(50 - 150)
	106	(50 - 150)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD
Prep Date.....: 04/13/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3,5-Trinitrobenzene	115	(53 - 135)			SW846 8330
	114	(53 - 135)	0.61	(0-30)	SW846 8330
1,3-Dinitrobenzene	117	(54 - 120)			SW846 8330
	116	(54 - 120)	0.25	(0-30)	SW846 8330
2-Amino-4,6-dinitrotoluene	111	(53 - 120)			SW846 8330
	110	(53 - 120)	0.45	(0-30)	SW846 8330
2,4,6-Trinitrotoluene	90	(37 - 120)			SW846 8330
	89	(37 - 120)	1.4	(0-30)	SW846 8330
2,4-Dinitrotoluene	112	(58 - 136)			SW846 8330
	111	(58 - 136)	0.98	(0-30)	SW846 8330
2,6-Dinitrotoluene	111	(52 - 144)			SW846 8330
	111	(52 - 144)	0.36	(0-30)	SW846 8330
2-Nitrotoluene	110	(52 - 120)			SW846 8330
	110	(52 - 120)	0.090	(0-30)	SW846 8330
3-Nitrotoluene	109	(48 - 136)			SW846 8330
	108	(48 - 136)	0.27	(0-30)	SW846 8330
4-Amino-2,6-dinitrotoluene	109	(58 - 159)			SW846 8330
	107	(58 - 159)	1.1	(0-30)	SW846 8330
4-Nitrotoluene	111	(46 - 136)			SW846 8330
	110	(46 - 136)	0.63	(0-30)	SW846 8330
HMX	111	(45 - 140)			SW846 8330
	111	(45 - 140)	0.090	(0-30)	SW846 8330
Nitrobenzene	112	(49 - 120)			SW846 8330
	112	(49 - 120)	0.17	(0-30)	SW846 8330
Nitroglycerin	102	(60 - 120)			SW846 8330
	101	(60 - 120)	0.94	(0-60)	SW846 8330
RDX	116	(39 - 120)			SW846 8330
	117	(39 - 120)	0.68	(0-30)	SW846 8330
PETN	100	(60 - 120)			SW846 8330
	98	(60 - 120)	1.5	(0-30)	SW846 8330
Tetryl	101	(30 - 120)			SW846 8330
	100	(30 - 120)	0.90	(0-30)	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	106	(50 - 150)
	106	(50 - 150)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D070566 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD

NOTE(S):

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

Bold print denotes control parameters

TestAmerica
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ANALYTICAL REPORT

PROJECT NO. GR11NJ00D5W2100

RAVENNA, OHIO

Lot #: A1D080416

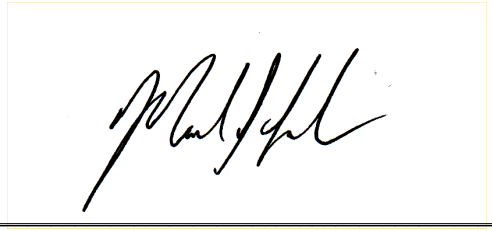
CONTRACT NO: GR11NJ00D5WRV00.

Brian Mailot

U.S.Geological Survey (USGS)
6480 Doubletree Avenue
Columbus, OH 43229

TESTAMERICA LABORATORIES, INC.

Unless noted otherwise, the test results reported herein meet all requirements of NELAC and the current version of the DoD QSM.



Approved for release.
Mark J. Loeb
Project Manager II
6/23/2011 2:35 PM

Mark J. Loeb
Project Manager
mark.loeb@testamericainc.com

June 22, 2011

ACCREDITED IN ACCORDANCE WITH nelac

ANALYTICAL REPORT

PROJECT NO. GR11NJ00D5W2100

RAVENNA, OHIO

Lot #: A1D080416

CONTRACT NO: GR11NJ00D5WRV00.

Ralph Haefner

U.S.Geological Survey (USGS)
6480 Doubletree Avenue
Columbus, OH 43229

TESTAMERICA LABORATORIES, INC.

Unless noted otherwise, the test results reported herein meet all requirements of NELAC and the current version of the DoD QSM.

Mark J. Loeb
Project Manager

June 22, 2011

Laboratory Job No: ~~ATD~~ ATD80416

CONTRACT LABORATORY DATA-REVIEW WORKSHEET

1.0 GENERAL INFORMATION

Data reviewer: Gary Cottrell Review date: 6/28/11

Office, Project, & Account #: OK, Ravenna

2.0 DATA DELIVERABLES

Date of Lab analytical report: 6/22/11 Number of copies: bound 0 unbound 0

No. of CD copies of raw-data report: 2 Remarks:

Raw-data report reviewed? Yes ✓ No ____ Electronic data files on CD? Yes ✓ No ____

EDD file format: QWDATA ____ TAL QUA08 ✓ ERPIMS ____ Other ____

Date rec'd data deliverables: 6/27/11 Date sent deliverables to USGS office 6/27/11

3.0 INVOICE STATUS FOR LOT: OK

4.0 SAMPLE INFORMATION *(Page #'s listed in this worksheet refer to lab analytical report)*

Sample collection date(s): 4/7/11 Sample matrix: water

No. of sample types in lot: Environmental 7 Trip blank ____ Equip. blank ____

MS/MSD ____ Other: ____

Date samples received at laboratory: 4/8/11

4.1 Were accelerated turn-around times (TATs) requested for analyses? Yes ____ No ✓

If yes, list TAT period and if completed:

4.2 Were analyses on chain-of-custody (COC) form performed by lab? YES ✓ NO ____

If **no**, list missing or cancelled analyses and reason for non-performance:

4.3 Were the samples properly preserved, labeled, no lab log-in problems, and(or) at appropriate temperature (<6 deg. C) upon receipt by the laboratory: Yes ✓ No ____

If **no**, list sample/lab IDs, and associated problems or reference lab report case narrative:

Laboratory Job No:_____

4.4 Were preparation (extraction) and(or) analysis holding times met? Yes ✓ No ____

If **no**, list analytical methods and sample/lab IDs for samples that exceeded holding-time limits:

4.5 Did surrogate recoveries meet QC acceptance criteria? Yes _____ No ✓ NA_____

If **no**, list methods, surrogates, associated sample/lab IDs, lab report page #s:_____

SVOC - P59, P63; Pesticides P79 - w/ [illegible]; PCB - P94 + 97 (LCS) + [illegible]

PCB - P101-102 (MS); Explosives - P932 ([illegible])

4.6 Were dilution factors greater than 1 for ***organic*** analyses? Yes____ No ✓ NA_____

If **yes**, list analytical methods and reason for raised dilution factors: dilution _____

high-analyte levels _____ matrix interferences _____ other _____

4.7 Were dilution factors greater than 1 for **inorganic** analyses? Yes ____ No ✓ NA_____

If **yes**, list analytical methods and reason for raised dilution factors:

high-analyte levels _____ matrix interferences _____ other _____

4.8 Additional comments about sample analyses: _____

Laboratory Job No: A10080416

5.0 QUALITY CONTROL (QC) ANALYSES and RESULTS

5.1 Were any target analytes detected in the **Laboratory Method Blanks**? Yes ✓ No ____

If **yes**, list method, analytes, prep batch #, report page #s: ____

Meth Cl = 0.86, RL = 2; P 27; NOTE: SVOC Surrogates out P66

Mn = 2.2, RL = 10; P114; Zn = 2.5, RL = 10, P114;

U = 0.0299, RL = 1, P191;

5.2 Did lab control samples (LCS/LSCD) meet percent recoveries (%R) criteria? Yes ___ No ✓

If **no**, list method, analytes, LCS/LCSD, prep batch #, report page #s: ____

VOC - P29 (High) - P30 (Low) + P31; SVOC - P71 (Note Surrogates)

Pest - Surrogate Low - P82; Ortho-P - P161 (Low)

5.3 Did the **MS/MSD** results meet %R or RPD acceptance criteria? Yes ____ No ✓ NA ____

Note: matrix spike and matrix spike duplicate (MS/MSD) data are used to evaluate the effect of sample matrix on the analytical process and should be only used in conjunction with other available lab QC data. In some cases, MS samples not directly associated with this lot may be used by the laboratory.

If **no**, list method, analytes; MS, MSD or RPD; and lab report page #:

CS_2 - High - P35; DCDF - Meth - Low - 1,2,4-TCB - Low - P37

Multiple VOC - P38-39; CS_2 - High - P45

Multiple VOC - P47-48;

Surrogate out - P89 (Pest) + P91; Mn Low - P133; 2+3 Low - P165

Ortho P - P167 (High)

5.4 Did the **lab-sample duplicate** results meet RPD acceptance criteria? Yes ✓ No ___ NA ___

If **no**, list method, analytes, prep batch #, report page #s, ____

5.5 Additional comments about QC results: ____

Laboratory Job No:_____

6.0 ANALYTICAL METHODS USED in this LABORATORY LOT NUMBER

- ✓ VOCs by GC/MS--method 8260B/ 524.2 *[water (W) or solids (S) analysis holding-time (HT) of 14 days]*
- ____ Gasoline Range Organics (GRO)+BTEX-method 8015B(GRO)/ 8021 *[W and S: analysis HT 14 days]*
- ____ Diesel Range Organics-method 8015B-DRO *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*
- ✓ Pesticides by GC--method 8081A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*
- ✓ PCBs by GC--method 8082 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*
- ____ Pesticides by GC--method 8141A *[W: prep HT 7 days; S: prep HT 14 days; analysis HT 40 days]*
- ____ Herbicides by GC--method 8151A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*
- ✓ SVOCs by GC/MS--method 8270C *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*
- ____ Dioxins and Furans--methods 8280/ 8290/ 1613 *[W and S: prep HT 30 days; analysis HT 45 days]*
- ____ PAHs by HPLC method 8310 *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*
- ✓ Explosives by HPLC method 8330 or 8321A *[W: prep HT 7 days; S: prep HT14 days; analysis HT 40 days]*
- ____ Hexane extractable materials (HEM and SGT-HEM)-method 1664/ 9071B *[W/S: analysis HT 28 days]*
- ____ Total organic carbon (TOC) or DOC--methods 415.1 or 9060 or 5310B *[W: analysis HT 28 days]*
- ____ Perchlorate--methods 314.0 or 6850 LC/MS/MS or 6860 IC/MS/MS *[W: analysis HT 28 days]*
- ✓ Metals by ICP--method 6010B or 200.7 *[W and S: analysis HT 180 days]*
- ✓ Metals by ICP/MS--method 6020 or 200.8 *[W and S: analysis HT 180 days]*
- ✓ Mercury by CVAA--method 7470A (W) and 7471A (S) *[W and S: analysis HT 28 days]*
- ✓ Inorganic anions-method 300/ 9056 *[W: analysis HT **48 hours**- NO_2, NO_3, ortho-P; HT 28 days--Br,Cl ,F, SO_4]*
- ____ Total dissolved solids (TDS)--method 2540C and(or) TSS--method 2540D *[W: analysis HT 7 days]*
- ____ Alkalinity--method 310.1 (Total, OH, HCO_3, and CO_3) *[W: analysis HT 14 days]*
- ✓ Nitrogen, ammonia--method ~~350.1~~ 350.2 *[W: analysis HT 28 days]*
- ____ Nitrogen, TKN--method 351.2 *[W: analysis HT 28 days]*
- ✓ Nitrogen, nitrate + nitrite--method 353.2 *[W: analysis HT 28 days]* NO_3 or NO_2 only *[HT **48 hours**]*
- ____ Nitrogen, nitrite--method 353.2 or 354.1 *[W: analysis HT **48 hours**]*
- ____ Phosphorus-method 365.3 and ortho P by 365.3 *[Phosphorus.: W: analysis HT 28 days, ortho P **48 hours**]*
- ____ Phosphorus-method 365.1 and ortho P by 365.1 *[Phosphorus: W: analysis HT 28 days, ortho P **48 hours**]*
- ✓ Cyanide, total, dissolved, or amenable--methods 9012A/ 335.4 *[W and S: analysis HT 14 days]*
- ____ MBAS surfactants – method 425.1 ***(HT 48 hours)***
- ____ Moisture content--methods D2216 or 160.3M
- ____ BOD--method 405.1 *(HT 48 hours)* or COD--method 410.4
- ____ Turbidity--method 180.1 ***(HT 48 hours)*** ; Hardness 2340B
- ____ Physical properties: pH--method 4500 H B; specific conductance—method 2510B
- ✓ Other analyses: Microcellulose

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CASE NARRATIVE

A1D080416

The following report contains the analytical results for seven water samples submitted to TestAmerica North Canton by U.S. Geological Survey (USGS) from the RAVENNA, OHIO Site, project number GR11NJ00D5W2100. The samples were received April 08, 2011, according to documented sample acceptance procedures.

The 6010B Metals B Li Mo Si and 6020 Uranium by ICP/MS analyses were performed at the TestAmerica Denver laboratory.

The 8330 Explosives, Nitroguanidine, and Nitrocellulose as N analyses were performed at the TestAmerica West Sacramento laboratory. Refer to TestAmerica West Sacramento narrative included in their data package for additional information.

TestAmerica utilizes USEPA approved methods and Louisville Corps Guidelines version 5, where applicable, in all analytical reports. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

All parameters were evaluated to the method detection limit and include qualified results where applicable.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Mark J. Loeb, at 330-497-9396.

CASE NARRATIVE (continued)

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperatures of the coolers upon sample receipt were 1.6, 1.8, and 1.8°C.

See TestAmerica's Cooler Receipt Form for additional information.

GC/MS VOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

The matrix spike/matrix spike duplicate(s) for batch(es) 1109091 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The LCS associated with batch(es) 1109091 was recovered high and outside of criteria for Methylene Chloride and Carbon Disulfide. Since the analyte was not detected in any of the samples above reporting limits, the results were accepted. Slight positive bias is not believed to have impacted data quality.

GC/MS SEMIVOLATILES

The sample(s) that contain results between the MDL and the RL were flagged with "J". There is a possibility of false positive or mis-identification at these quantitation levels. In analytical methods requiring confirmation of the analyte reported, confirmation was performed only down to the standard reporting limit (SRL). The acceptance criteria for QC samples may not be met at these quantitation levels.

3-Methylphenol (m-Cresol) and 4-Methylphenol (p-Cresol) co-elute and cannot be reported as separate analytes. When these analytes are requested, the reported result represents a probable combination of the two analytes.

CASE NARRATIVE (continued)

GC/MS SEMIVOLATILES (continued)

There was no client requested matrix spike / matrix spike duplicate (MS/MSD) in batch(es) 1109035.

Insufficient sample volume was provided to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch(es) 1101057.

For sample(s) FWGLL1mw-084C-0200-GW, FWGLL4mw-198C-0210-GW, and the Blank and LCS associated with batch(es) 1101057, the recovery for surrogate compound(s) are outside acceptance criteria. Since LCG criterion is that all surrogates be above 10%, no corrective action is required.

PESTICIDES-8081

For the LCS associated with batch(es) 1099014, the recovery for one surrogate compound is outside acceptance criteria. Since LCG criterion is that one of two surrogate compounds must meet acceptance criteria, no corrective action was required. (Surrogate was below acceptance criteria, but above 10%.)

Sample(s) FWGLL1mw-084C-0200-GW had elevated reporting limits due to matrix interference.

POLYCHLORINATED BIPHENYLS-8082

For sample(s) FWGLL1mw-084C-0200-GW, the recovery for one surrogate compound is outside acceptance criteria. Since LCG criterion is that one of two surrogate compounds must meet acceptance criteria, no corrective action was required. (Surrogate was below acceptance limit, but above 10%.)

NITROAROMATICS AND NITRAMINES-8330

The analyses reported herein were performed using an instrument that has two columns(GC) or detectors(HPLC), one of which is used to confirm the results of the other. Peak interferences may result in some cases, which cause a quantitation difference between the two columns/detectors. If the difference between the two results is greater than 40%, the higher of the two results or the primary column/detector is normally reported. The reported results are flagged with "PG".

CASE NARRATIVE (continued)

METALS

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analyte(s).

The matrix spike/matrix spike duplicate(s) for batch(es) 1101020 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

No ICP Trace or ICP MS Form IX was provided for batch(es) 1101020. The serial dilutions were performed on a different sample from the same QC batch(es).

The sample duplicate RPD was outside the acceptance limits for some analytes. The result is less than five times the reporting limit; therefore, no corrective action is required. Refer to the sample duplicate report for RPDS that exceed 20%.

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The matrix spike/matrix spike duplicate(s) for FWGLL2mw-266C-0040-GW had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The matrix spike/matrix spike duplicate(s) for batch(es) 1102391 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

The LCSD and CCV associated with batch(es) 1101306 exceeded method criteria on the high side for Phosphate as P, Ortho. Since the sample results were below the requested reporting limit the results were accepted.

CASE NARRATIVE (continued)

GENERAL CHEMISTRY (continued)

Sample(s) FWGLL2mw-266C-0040-GW, FWGLL2mw-267C-0050-GW, FWGLL2mw-269C-0060-GW, FWGLL1mw-084C-0200-GW, and FWGLL4mw-198C-0210-GW analyzed by ion chromatography had greater than 10 samples between CCV/CCBs due to analyst error. The CCV/CCB results met criteria and results are reported.

The Method Blank associated with batch(es) 1112227 for the Cyanide sample(s) FWGLL1mw-084C-0200-GW and FWGLL4mw-198C-0210-GW was greater than 1/2 the MRL. Since there is no more sample and all the samples are non-detect, the data is reported.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called Quality Control Batches (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, a Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair or a Matrix Spike/Sample Duplicate (MS/DU) pair.
For 600 series/CWA methods, QC samples include a Method Blank (MB), a Laboratory Control Sample (LCS) and, where appropriate, a Matrix Spike (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch, with the exception of poor performing analytes. A list of these analytes is listed below. No corrective action is taken if these analytes do not meet criteria.Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

Poor performers

Method 8270 Water and Solid:	
4-Nitrophenol	3,3' – Dichlorobenzidine
Benzoic Acid	2,4,6 - Tribromophenol
Phenol 2	,4-Dinitrophenol
Phenol-d5 P	entachlorophenol
4,6-Dinitro-2-methylphenol	Hexachlorocyclopentadiene (LCG only)
Benzyl Alcohol	4-Chloroaniline
Method 8151 Solid	
Dinoseb	
Method 8260 Water and Solid	
Dichlorodifluoromethane H	exachlorobutadiene
Trichlorofluoromethane Na	phthalene
Chloroethane 1	,2,3-Trichlorobenzene
Acetone 1	,2,4-Trichlorobenzene
Bromomethane 2	,2-Dichloropropane
Bromoform C	hloromethane

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be ten fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.

- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results do not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate or Matrix Spike/Sample Duplicate.

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.

TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), DoD ELAP (ADE-1437) USDA Soil Permit (P33-08-00123)

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY - Detection Highlights

A1D080416

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FWGLL2mw-266C-0040-GW 04/07/11 11:04	**001**			
Chloride	1.6	1.0	mg/L	MCAWW 300.0A
Sulfate	27.2	1.0	mg/L	MCAWW 300.0A
Fluoride	0.083 B	1.0	mg/L	MCAWW 300.0A
FWGLL2mw-267C-0050-GW 04/07/11 08:52	**003**			
Chloride	3.2	1.0	mg/L	MCAWW 300.0A
Sulfate	82.0	1.0	mg/L	MCAWW 300.0A
Fluoride	0.29 B	1.0	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	0.37 B	0.50	mg/L	MCAWW 300.0A
FWGLL2mw-269C-0060-GW 04/07/11 08:59	**005**			
Chloride	10.0	1.0	mg/L	MCAWW 300.0A
Sulfate	27.2	1.0	mg/L	MCAWW 300.0A
Fluoride	0.16 B	1.0	mg/L	MCAWW 300.0A
FWGLL1mw-084C-0200-GW 04/07/11 12:00	**007**			
1,3,5-Trinitrobenzene	4.7 PG	0.11	ug/L	SW846 8330
1,3-Dinitrobenzene	0.86	0.11	ug/L	SW846 8330
2-Amino-4,6-dinitrotoluene	15	0.11	ug/L	SW846 8330
2,4,6-Trinitrotoluene	11	0.11	ug/L	SW846 8330
2,4-Dinitrotoluene	2.8	0.11	ug/L	SW846 8330
2,6-Dinitrotoluene	1.1	0.11	ug/L	SW846 8330
4-Amino-2,6-dinitrotoluene	29	0.21	ug/L	SW846 8330
HMX	0.98 PG	0.11	ug/L	SW846 8330
RDX	0.59	0.11	ug/L	SW846 8330
2,4-Dinitrotoluene	1.2 J	5.0	ug/L	SW846 8270C
Nitrogen, as Ammonia	0.84 B	2.0	mg/L	MCAWW 350.2
Nitrate-Nitrite	0.8	0.1	mg/L	MCAWW 353.2
Chloride	1.1	1.0	mg/L	MCAWW 300.0A
Sulfate	104	1.0	mg/L	MCAWW 300.0A
Fluoride	0.070 B	1.0	mg/L	MCAWW 300.0A
Nitrate as N	0.74	0.10	mg/L	MCAWW 300.0A
Phosphate as P, Ortho	0.18 B	0.50	mg/L	MCAWW 300.0A

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A1D080416

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
FWGLL1mw-084C-0200-GF 04/07/11 12:00	**008**			
Aluminum	404	50.0	ug/L	SW846 6020
Cadmium	1.6	0.50	ug/L	SW846 6020
Sodium	3140	1000	ug/L	SW846 6020
Thallium	0.55 B	1.0	ug/L	SW846 6020
Zinc	72.4 J	10.0	ug/L	SW846 6020
Barium	15.7	10.0	ug/L	SW846 6010B
Calcium	42300	1000	ug/L	SW846 6010B
Cobalt	19.6	5.0	ug/L	SW846 6010B
Copper	9.3	5.0	ug/L	SW846 6010B
Potassium	2500	1000	ug/L	SW846 6010B
Magnesium	3200	1000	ug/L	SW846 6010B
Manganese	243 J	10.0	ug/L	SW846 6010B
Nickel	37.0	10.0	ug/L	SW846 6010B
FWGLL4mw-198C-0210-GW 04/07/11 15:00	**009**			
Nitrogen, as Ammonia	0.84 B	2.0	mg/L	MCAWW 350.2
Nitrate-Nitrite	0.03 B	0.1	mg/L	MCAWW 353.2
Chloride	1.2	1.0	mg/L	MCAWW 300.0A
Sulfate	84.5	1.0	mg/L	MCAWW 300.0A
Fluoride	0.16 B	1.0	mg/L	MCAWW 300.0A
Nitrate as N	0.033 B	0.10	mg/L	MCAWW 300.0A
FWGLL4mw-198C-0210-GF 04/07/11 15:00	**010**			
Aluminum	34.4 B	50.0	ug/L	SW846 6020
Iron	4690	50.0	ug/L	SW846 6020
Sodium	5070	1000	ug/L	SW846 6020
Zinc	64.4	10.0	ug/L	SW846 6020
Barium	10.3	10.0	ug/L	SW846 6010B
Calcium	27500	1000	ug/L	SW846 6010B
Potassium	717 B	1000	ug/L	SW846 6010B
Magnesium	14900	1000	ug/L	SW846 6010B
Manganese	1050	10.0	ug/L	SW846 6010B
Nickel	32.2	10.0	ug/L	SW846 6010B

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

METHOD SUMMARY

ANALYTICAL METHODS SUMMARY

A1D080416

PARAMETER	ANALYTICAL METHOD
Ammonia Nitrogen	MCAWW 350.2
Bromide	MCAWW 300.0A
Chloride	MCAWW 300.0A
Cyanide, Total	SW846 9012A
Fluoride	MCAWW 300.0A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
ICP-MS (6020)	SW846 6020
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Nitrate as N	MCAWW 300.0A
Nitrate-Nitrite	MCAWW 353.2
Nitrite as N	MCAWW 300.0A
Nitroaromatics and Nitramines by HPLC	SW846 8330
Nitrocellulose as N, WS-WC-0050 (Colorimetric)	TAL-SOP WS-WC-0050
Organics by UV/HPLC	SW846 8330 (Modified)
Organochlorine Pesticides	SW846 8081A
Phosphate as P, Ortho	MCAWW 300.0A
PCBs by SW-846 8082	SW846 8082
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Sulfate	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

TAL-SOP TESTAMERICA LABORATORIES INC., LABORATORY STANDARD OPERATING PROCEDURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

SAMPLE SUMMARY

SAMPLE SUMMARY

A1D080416

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MGP5D	001	FWGLL2mw-266C-0040-GW	04/07/11	11:04
MGP5J	003	FWGLL2mw-267C-0050-GW	04/07/11	08:52
MGP5N	005	FWGLL2mw-269C-0060-GW	04/07/11	08:59
MGP5R	007	FWGLL1mw-084C-0200-GW	04/07/11	12:00
MGP5W	008	FWGLL1mw-084C-0200-GF	04/07/11	12:00
MGP53	009	FWGLL4mw-198C-0210-GW	04/07/11	15:00
MGP6A	010	FWGLL4mw-198C-0210-GF	04/07/11	15:00

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.

SHIPPING
AND
RECEIVING DOCUMENTS

Chain of Custody Record

TestAmerica 18
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: Canton
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: U.S. Geological Survey	Client Project Manager: Ralph Haefner	Site Contact: Brian Maibl	Lab Contact: Ken Kuzior	COC No: 019450
Address: 6480 Doubletree Ave	Telephone: 614-430-7709	Telephone: 614-430-7747	Telephone: 330-966-9374	1 of 2 COCs
City/State/Zip: Columbus, OH 43229	Email: rhaefner@usgs.gov	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only
Phone: 614-430-7700		TAT if different from below Contract		Walk-in client: ☐
Project Name: Ravenna, OH	Method of Shipment/Carrier: lab pickup	☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab backup: ☐
Project Number: GRIINJ00D5W2100	Shipping/Tracking No:			Lab sampling: ☐
PO #				Job/SDG No:

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite (C) / Grab (G)	Metals 6010/6020	Anions/nutrients 300.0A	Ammonia 350.1	Sample Specific Notes / Special Instructions:
FWGLL2mw-266C-0040-GW	4/7/11	11:04		X				1					1		N	G		X	X	A192
FWGLL2mw-266C-0040-GF	4/7/11	11:04		X					1						Y	G	X			A192
FWGLL2mw-267C-0050-GW	4/7/11	08:52		X				1					1		N	G		X	X	A192
FWGLL2mw-267C-0050-GF	4/7/11	08:52		X					1						Y	G	X			A192
FWGLL2mw-269C-0060-GW	4/7/11	08:59		X				1					1		N	G		X	X	A192
FWGLL2mw-269C-0060-GF	4/7/11	08:59		X					1						Y	G	X			A192

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:
Metals-6010(B, Li, Mo, Si) 6020(U) filtered
Anions/nutrients-300.0A (Br, Cl, F, SO_4) nitrite, ortho.
Nitrogen, ammonia-350.1

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Brian Maibl	USGS	4/7/11 1700	TC	TAL-NC	4/7/11 1700
TC	TAL-NC	4/7/11 1822			
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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North Canton

Chain of Custody Record

TestAmerica Laboratory location: Canton

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: U.S. Geological Survey	Client Project Manager: Ralph Haefner	Site Contact: Brian Mailot	Lab Contact: Ken Kurior	COC No: 019451
Address: 6480 Doubletree Ave.	Telephone: 614-430-7709	Telephone: 614-430-7747	Telephone: 330-966-9374	2 of 2 COCs
City/State/Zip: Columbus, OH 43229	Email: rhaefner@usgs.gov	Analysis Turnaround Time (if BUS days)	Analyses	For lab use only
Phone: 614-430-7700		TAT if different from below Contract		Walk-in client ☐
Project Name: Ravenna, OH	Method of Shipment/Carrier: lab pickup	☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Lab pickup ☐
Project Number: GRIINJ00D5W2100	Shipping/Tracking No:			Lab sampling ☐
PO #				Job SDG No:

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite C / Grab G	VOC - 8260	SVOC - 8270	PCB - 8082	Explosives - 8330	Propellants 8330 mod WS-LC-0050	Metals 6010/6020/7470	Cyanide - 9012	Anions - 300.0A	Nutrients - 353.2	Ammonia - 350.1	Sample Specific Notes / Special Instructions / Cooler #
FWGLL1mw-084C-020U-GW	4/7/11	12:00		X				2		3	1		10		N	G	X	X	X	X	X		X	X	X	X	A726
FWGLL1 mw-084C-020-GF	4/7/11	12:00		X					2						Y	G						X					A726
FWGLL4mw-198C-021U-GW	4/7/11	15:00		X				2		3	1		10		N	G	X	X	X	X	X		X	X	X	X	A732
FWGLL4 mw-198C-021U-GF	4/7/11	15:00		X					2						Y	G						X					A732

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Bruce Mailot	USGS	4/7/11 1700	TC Tobin	TAL-NC	4/7/11 1700
TC Tobin	TAL-NC	4/7/11 1822			
			Received in Laboratory by:		

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North Canton

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: ACQ80416

Client USGS Project Ravenna, OH By: (Signature)
Cooler Received on 4/8/11 Opened on 4/8/11
FedEx ☐ UPS ☐ DHL ☐ FAS ☐ Stetson ☐ Client Drop Off ☐ TestAmerica Courier ☒ Other
TestAmerica Cooler # Multiple Coolers ☒ Foam Box ☐ Client Cooler ☐ Other

1. Were custody seals on the outside of the cooler(s)? Yes ☒ No ☐ Intact? Yes ☒ No ☐ NA ☐
   If YES, Quantity 3 Quantity Unsalvageable
   Were custody seals on the outside of cooler(s) signed and dated? Yes ☒ No ☐ NA ☐
   Were custody seals on the bottle(s)? Yes ☐ No ☒
   If YES, are there any exceptions?
2. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐
3. Did custody papers accompany the sample(s)? Yes ☒ No ☐ Relinquished by client? Yes ☒ No ☐
4. Were the custody papers signed in the appropriate place? Yes ☒ No ☐
5. Packing material used: Bubble Wrap ☒ Foam ☐ None ☐ Other
6. Cooler temperature upon receipt °C See back of form for multiple coolers/temps ☒
   METHOD: IR ☒ Other ☐
   COOLANT: Wet Ice ☒ Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐
9. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐
10. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐
11. Were air bubbles >6 mm in any VOA vials? Yes ☐ No ☒ NA ☐
12. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐
13. Was a trip blank present in the cooler(s)? Yes ☐ No ☒ Were VOAs on the COC? Yes ☒ No ☐

Contacted PM MJL Date 4/8/11 by JM via Verbal ☒ Voice Mail ☐ Other ☐
Concerning #14

14. CHAIN OF CUSTODY

The following discrepancies occurred:
Received Pesticide bottles for samples FWGLL1mw-084C-0200-GW & FWGLL4mw-198C-0210-GW not marked on COC. Will log for Pesticides per volume

15. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.
Sample(s) were received in a broken container.
Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) were further preserved in Sample Receiving to meet recommended pH level(s). *Nitric Acid Lot#* 100110-HNO_3; *Sulfuric Acid Lot#* 110410-H_2SO_4; *Sodium Hydroxide Lot#* 100108 -*NaOH; Hydrochloric Acid Lot#* 092006-*HCl; Sodium Hydroxide and Zinc Acetate Lot#* 100108-$(CH_3COO)_2ZN/NaOH$. What time was preservative added to sample(s)?

Client ID	pH	Date	Initials
0040	<2 <2	4/8/11	JM
0050	<2 <2		
0060	<2 <2		
0200	<2 <2 <2 <2 >12		
0210	<2 <2 <2 <2 >12		

TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Client ID	pH	Date	Initials

Cooler #	Temp. °C	Method	Coolant
A192	1.8	IR	Ice
A726	1.6	1	1
A732	1.8	1	1

Discrepancies Cont'd:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

GCMS VOLATILE DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

GC/MS Volatiles

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R1AA **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11
Prep Date.....: 04/19/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1109091
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromochloromethane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
m-Xylene & p-Xylene	ND	2.0	ug/L
Chloromethane	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Methylene chloride	ND	2.0	ug/L
Acetone	ND	10	ug/L
Carbon disulfide	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
2-Butanone	ND	10	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Benzene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	10	ug/L
2-Hexanone	ND	10	ug/L
Tetrachloroethene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L

(Continued on next page)

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

GC/MS Volatiles

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R1AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Styrene	ND	1.0	ug/L
Xylenes (total)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	78	(50 - 150)
1,2-Dichloroethane-d4	76	(50 - 150)
Toluene-d8	78	(50 - 150)
4-Bromofluorobenzene	80	(50 - 150)

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

GC/MS Volatiles

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP531AA **Matrix.....:** WG
Date Sampled...: 04/07/11 15:00 **Date Received..:** 04/08/11
Prep Date.....: 04/19/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1109091
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromochloromethane	ND	1.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
m-Xylene & p-Xylene	ND	2.0	ug/L
Chloromethane	ND	1.0	ug/L
Bromomethane	ND	1.0	ug/L
Vinyl chloride	ND	1.0	ug/L
Chloroethane	ND	1.0	ug/L
Methylene chloride	ND	2.0	ug/L
Acetone	ND	10	ug/L
Carbon disulfide	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
2-Butanone	ND	10	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Benzene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	10	ug/L
2-Hexanone	ND	10	ug/L
Tetrachloroethene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

GC/MS Volatiles

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP531AA **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Styrene	ND	1.0	ug/L
Xylenes (total)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	78	(50 - 150)
1,2-Dichloroethane-d4	79	(50 - 150)
Toluene-d8	79	(50 - 150)
4-Bromofluorobenzene	80	(50 - 150)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6XC1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D190000-091

Prep Date.....: 04/19/11 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/19/11 **Prep Batch #...:** 1109091
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	2.0	ug/L	SW846 8260B
Chloromethane	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
Methylene chloride	**0.86 J**	**2.0**	**ug/L**	**SW846 8260B**
Acetone	ND	10	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	10	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	10	ug/L	SW846 8260B
2-Hexanone	ND	10	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	2.0	ug/L	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6XC1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	77	(50 - 150)
1,2-Dichloroethane-d4	76	(50 - 150)
Toluene-d8	78	(50 - 150)
4-Bromofluorobenzene	78	(50 - 150)

NOTE(S):

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

J Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6XC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D190000-091
Prep Date.....: 04/19/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1109091
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,2-Dichloroethene	101	(73 - 133)	SW846 8260B
trans-1,2-Dichloroethene	103	(75 - 134)	SW846 8260B
1,2-Dibromoethane	105	(75 - 127)	SW846 8260B
Bromochloromethane	104	(75 - 127)	SW846 8260B
m-Xylene & p-Xylene	102	(75 - 122)	SW846 8260B
o-Xylene	104	(75 - 118)	SW846 8260B
Chloromethane	108	(58 - 135)	SW846 8260B
Bromomethane	89	(35 - 153)	SW846 8260B
Vinyl chloride	97	(73 - 134)	SW846 8260B
Chloroethane	96	(72 - 129)	SW846 8260B
Methylene chloride	121 a	(69 - 118)	SW846 8260B
Acetone	93	(51 - 157)	SW846 8260B
Carbon disulfide	130 a	(74 - 123)	SW846 8260B
1,1-Dichloroethene	111	(75 - 125)	SW846 8260B
1,1-Dichloroethane	102	(75 - 133)	SW846 8260B
1,2-Dichloroethene (total)	102	(85 - 111)	SW846 8260B
Chloroform	102	(74 - 127)	SW846 8260B
1,2-Dichloroethane	102	(67 - 132)	SW846 8260B
2-Butanone	105	(45 - 150)	SW846 8260B
1,1,1-Trichloroethane	100	(70 - 127)	SW846 8260B
Carbon tetrachloride	103	(71 - 132)	SW846 8260B
Bromodichloromethane	105	(70 - 130)	SW846 8260B
1,2-Dichloropropane	104	(75 - 127)	SW846 8260B
cis-1,3-Dichloropropene	105	(73 - 132)	SW846 8260B
Trichloroethene	100	(67 - 128)	SW846 8260B
Dibromochloromethane	103	(74 - 145)	SW846 8260B
1,1,2-Trichloroethane	104	(75 - 136)	SW846 8260B
Benzene	102	(75 - 126)	SW846 8260B
trans-1,3-Dichloropropene	115	(74 - 131)	SW846 8260B
Bromoform	101	(72 - 136)	SW846 8260B
4-Methyl-2-pentanone	109	(59 - 150)	SW846 8260B
2-Hexanone	113	(53 - 139)	SW846 8260B

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6XC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D190000-091

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Tetrachloroethene	93	(75 - 129)	SW846 8260B
1,1,2,2-Tetrachloroethane	98	(68 - 129)	SW846 8260B
Toluene	100	(75 - 125)	SW846 8260B
Chlorobenzene	99	(75 - 127)	SW846 8260B
Ethylbenzene	104	(75 - 120)	SW846 8260B
Styrene	107	(75 - 130)	SW846 8260B
Xylenes (total)	103	(90 - 114)	SW846 8260B
n-Hexane	84	(69 - 129)	SW846 8260B
1,2-Dibromo-3-chloro-propane	75	(75 - 132)	SW846 8260B
1,2-Dichlorobenzene	102	(73 - 120)	SW846 8260B
1,3-Dichlorobenzene	97	(75 - 122)	SW846 8260B
1,4-Dichlorobenzene	96	(74 - 123)	SW846 8260B
Dichlorodifluoromethane	58 a	(59 - 134)	SW846 8260B
Freon 113	99	(50 - 150)	SW846 8260B
Isopropylbenzene	100	(75 - 126)	SW846 8260B
Methyl acetate	101	(60 - 140)	SW846 8260B
Methylcyclohexane	84	(60 - 140)	SW846 8260B
Methyl tert-butyl ether (MTBE)	102	(59 - 129)	SW846 8260B
1,2,4-Trichloro-benzene	63 a	(75 - 130)	SW846 8260B
Trichlorofluoromethane	117	(68 - 133)	SW846 8260B
Acrolein	123	(50 - 150)	SW846 8260B
Acrylonitrile	111	(50 - 150)	SW846 8260B
n-Butylbenzene	91	(75 - 126)	SW846 8260B
sec-Butylbenzene	89	(75 - 125)	SW846 8260B
tert-Butylbenzene	86	(75 - 125)	SW846 8260B
2-Chlorotoluene	90	(75 - 121)	SW846 8260B
4-Chlorotoluene	93	(73 - 127)	SW846 8260B
Dibromomethane	106	(76 - 132)	SW846 8260B
1,3-Dichloropropane	102	(75 - 133)	SW846 8260B
2,2-Dichloropropane	102	(62 - 134)	SW846 8260B
1,1-Dichloropropene	98	(75 - 135)	SW846 8260B
Hexachlorobutadiene	60 a	(75 - 133)	SW846 8260B
Iodomethane	132	(50 - 150)	SW846 8260B
p-Isopropyltoluene	95	(75 - 125)	SW846 8260B

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6XC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D190000-091

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Naphthalene	**63 a**	**(65 - 149)**	**SW846 8260B**
n-Propylbenzene	**91**	**(75 - 127)**	**SW846 8260B**
1,1,1,2-Tetrachloroethane	**102**	**(75 - 127)**	**SW846 8260B**
1,2,3-Trichlorobenzene	**61 a**	**(75 - 133)**	**SW846 8260B**
1,2,3-Trichloropropane	**94**	**(65 - 139)**	**SW846 8260B**
1,1,2-Trichloro-1,2,2-trifluoroethane	**99**	**(50 - 150)**	**SW846 8260B**
1,2,4-Trimethylbenzene	**96**	**(75 - 123)**	**SW846 8260B**
1,3,5-Trimethylbenzene	**93**	**(75 - 121)**	**SW846 8260B**
Vinyl acetate	**125**	**(30 - 150)**	**SW846 8260B**
Bromobenzene	**88**	**(74 - 123)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(50 - 150)
1,2-Dichloroethane-d4	79	(50 - 150)
Toluene-d8	80	(50 - 150)
4-Bromofluorobenzene	94	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6XC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D190000-091
Prep Date.....: 04/19/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1109091
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 5 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
cis-1,2-Dichloroethene	10	10	ug/L	101	SW846 8260B
trans-1,2-Dichloroethene	10	10	ug/L	103	SW846 8260B
1,2-Dibromoethane	10	11	ug/L	105	SW846 8260B
Bromochloromethane	10	10	ug/L	104	SW846 8260B
m-Xylene & p-Xylene	20	20	ug/L	102	SW846 8260B
o-Xylene	10	10	ug/L	104	SW846 8260B
Chloromethane	10	11	ug/L	108	SW846 8260B
Bromomethane	10	8.9	ug/L	89	SW846 8260B
Vinyl chloride	10	9.7	ug/L	97	SW846 8260B
Chloroethane	10	9.6	ug/L	96	SW846 8260B
Methylene chloride	10	12 a	ug/L	121	SW846 8260B
Acetone	20	19	ug/L	93	SW846 8260B
Carbon disulfide	10	13 a	ug/L	130	SW846 8260B
1,1-Dichloroethene	10	11	ug/L	111	SW846 8260B
1,1-Dichloroethane	10	10	ug/L	102	SW846 8260B
1,2-Dichloroethene (total)	20	20	ug/L	102	SW846 8260B
Chloroform	10	10	ug/L	102	SW846 8260B
1,2-Dichloroethane	10	10	ug/L	102	SW846 8260B
2-Butanone	20	21	ug/L	105	SW846 8260B
1,1,1-Trichloroethane	10	10	ug/L	100	SW846 8260B
Carbon tetrachloride	10	10	ug/L	103	SW846 8260B
Bromodichloromethane	10	11	ug/L	105	SW846 8260B
1,2-Dichloropropane	10	10	ug/L	104	SW846 8260B
cis-1,3-Dichloropropene	10	10	ug/L	105	SW846 8260B
Trichloroethene	10	10	ug/L	100	SW846 8260B
Dibromochloromethane	10	10	ug/L	103	SW846 8260B
1,1,2-Trichloroethane	10	10	ug/L	104	SW846 8260B
Benzene	10	10	ug/L	102	SW846 8260B
trans-1,3-Dichloropropene	10	11	ug/L	115	SW846 8260B
Bromoform	10	10	ug/L	101	SW846 8260B
4-Methyl-2-pentanone	20	22	ug/L	109	SW846 8260B
2-Hexanone	20	23	ug/L	113	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6XC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D190000-091

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Tetrachloroethene	10	9.3	ug/L	93	SW846 8260B
1,1,2,2-Tetrachloroethane	10	9.8	ug/L	98	SW846 8260B
Toluene	10	10	ug/L	100	SW846 8260B
Chlorobenzene	10	9.9	ug/L	99	SW846 8260B
Ethylbenzene	10	10	ug/L	104	SW846 8260B
Styrene	10	11	ug/L	107	SW846 8260B
Xylenes (total)	30	31	ug/L	103	SW846 8260B
n-Hexane	10	8.4	ug/L	84	SW846 8260B
1,2-Dibromo-3-chloro-propane	10	7.5	ug/L	75	SW846 8260B
1,2-Dichlorobenzene	10	10	ug/L	102	SW846 8260B
1,3-Dichlorobenzene	10	9.7	ug/L	97	SW846 8260B
1,4-Dichlorobenzene	10	9.6	ug/L	96	SW846 8260B
Dichlorodifluoromethane	10	5.8 a	ug/L	58	SW846 8260B
Freon 113	10	9.9	ug/L	99	SW846 8260B
Isopropylbenzene	10	10	ug/L	100	SW846 8260B
Methyl acetate	10	10	ug/L	101	SW846 8260B
Methylcyclohexane	10	8.4	ug/L	84	SW846 8260B
Methyl tert-butyl ether (MTBE)	10	10	ug/L	102	SW846 8260B
1,2,4-Trichloro-benzene	10	6.3 a	ug/L	63	SW846 8260B
Trichlorofluoromethane	10	12	ug/L	117	SW846 8260B
Acrolein	30	37	ug/L	123	SW846 8260B
Acrylonitrile	30	33	ug/L	111	SW846 8260B
n-Butylbenzene	10	9.1	ug/L	91	SW846 8260B
sec-Butylbenzene	10	8.9	ug/L	89	SW846 8260B
tert-Butylbenzene	10	8.6	ug/L	86	SW846 8260B
2-Chlorotoluene	10	9.0	ug/L	90	SW846 8260B
4-Chlorotoluene	10	9.3	ug/L	93	SW846 8260B
Dibromomethane	10	11	ug/L	106	SW846 8260B
1,3-Dichloropropane	10	10	ug/L	102	SW846 8260B
2,2-Dichloropropane	10	10	ug/L	102	SW846 8260B
1,1-Dichloropropene	10	9.8	ug/L	98	SW846 8260B
Hexachlorobutadiene	10	6.0 a	ug/L	60	SW846 8260B
Iodomethane	10	13	ug/L	132	SW846 8260B
p-Isopropyltoluene	10	9.5	ug/L	95	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6XC1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D190000-091

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Naphthalene	**10**	**6.3 a**	**ug/L**	**63**	**SW846 8260B**
n-Propylbenzene	**10**	**9.1**	**ug/L**	**91**	**SW846 8260B**
1,1,1,2-Tetrachloroethane	**10**	**10**	**ug/L**	**102**	**SW846 8260B**
1,2,3-Trichlorobenzene	**10**	**6.1 a**	**ug/L**	**61**	**SW846 8260B**
1,2,3-Trichloropropane	**10**	**9.4**	**ug/L**	**94**	**SW846 8260B**
1,1,2-Trichloro-1,2,2-trifluoroethane	**10**	**9.9**	**ug/L**	**99**	**SW846 8260B**
1,2,4-Trimethylbenzene	**10**	**9.6**	**ug/L**	**96**	**SW846 8260B**
1,3,5-Trimethylbenzene	**10**	**9.3**	**ug/L**	**93**	**SW846 8260B**
Vinyl acetate	**10**	**13**	**ug/L**	**125**	**SW846 8260B**
Bromobenzene	**10**	**8.8**	**ug/L**	**88**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(50 - 150)
1,2-Dichloroethane-d4	79	(50 - 150)
Toluene-d8	80	(50 - 150)
4-Bromofluorobenzene	94	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11
Prep Date.....: 04/19/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1109091
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,2-Dichloroethene	99	(70 - 130)			SW846 8260B
	99	(70 - 130)	0.19	(0-30)	SW846 8260B
trans-1,2-Dichloroethene	100	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.09	(0-30)	SW846 8260B
1,2-Dibromoethane	98	(70 - 130)			SW846 8260B
	99	(70 - 130)	1.2	(0-30)	SW846 8260B
Bromochloromethane	99	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.8	(0-30)	SW846 8260B
m-Xylene & p-Xylene	98	(70 - 130)			SW846 8260B
	100	(70 - 130)	2.5	(0-30)	SW846 8260B
o-Xylene	100	(70 - 130)			SW846 8260B
	101	(70 - 130)	0.76	(0-30)	SW846 8260B
Chloromethane	102	(70 - 130)			SW846 8260B
	94	(70 - 130)	8.2	(0-30)	SW846 8260B
Bromomethane	95	(70 - 130)			SW846 8260B
	98	(70 - 130)	3.4	(0-30)	SW846 8260B
Vinyl chloride	101	(70 - 130)			SW846 8260B
	101	(70 - 130)	0.73	(0-30)	SW846 8260B
Chloroethane	103	(70 - 130)			SW846 8260B
	100	(70 - 130)	2.6	(0-30)	SW846 8260B
Methylene chloride	106	(70 - 130)			SW846 8260B
	111	(70 - 130)	4.3	(0-30)	SW846 8260B
Acetone	97	(70 - 130)			SW846 8260B
	96	(70 - 130)	1.5	(0-30)	SW846 8260B
Carbon disulfide	132 a	(70 - 130)			SW846 8260B
	133 a	(70 - 130)	1.2	(0-30)	SW846 8260B
1,1-Dichloroethene	111	(70 - 130)			SW846 8260B
	115	(70 - 130)	2.9	(0-30)	SW846 8260B
1,1-Dichloroethane	97	(70 - 130)			SW846 8260B
	100	(70 - 130)	2.2	(0-30)	SW846 8260B
1,2-Dichloroethene (total)	100	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.05	(0-30)	SW846 8260B
Chloroform	99	(70 - 130)			SW846 8260B
	99	(70 - 130)	0.25	(0-30)	SW846 8260B
1,2-Dichloroethane	97	(70 - 130)			SW846 8260B
	99	(70 - 130)	1.6	(0-30)	SW846 8260B
2-Butanone	106	(70 - 130)			SW846 8260B
	105	(70 - 130)	0.69	(0-30)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1,1-Trichloroethane	101	(70 - 130)			SW846 8260B
	101	(70 - 130)	0.31	(0-30)	SW846 8260B
Carbon tetrachloride	101	(70 - 130)			SW846 8260B
	101	(70 - 130)	0.02	(0-30)	SW846 8260B
Bromodichloromethane	101	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.52	(0-30)	SW846 8260B
1,2-Dichloropropane	102	(70 - 130)			SW846 8260B
	101	(70 - 130)	0.83	(0-30)	SW846 8260B
cis-1,3-Dichloropropene	99	(70 - 130)			SW846 8260B
	98	(70 - 130)	1.6	(0-30)	SW846 8260B
Trichloroethene	98	(70 - 130)			SW846 8260B
	98	(70 - 130)	0.75	(0-30)	SW846 8260B
Dibromochloromethane	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	1.1	(0-30)	SW846 8260B
1,1,2-Trichloroethane	100	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.12	(0-30)	SW846 8260B
Benzene	99	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.6	(0-30)	SW846 8260B
trans-1,3-Dichloropropene	109	(70 - 130)			SW846 8260B
	112	(70 - 130)	2.5	(0-30)	SW846 8260B
Bromoform	97	(70 - 130)			SW846 8260B
	96	(70 - 130)	0.62	(0-30)	SW846 8260B
4-Methyl-2-pentanone	111	(70 - 130)			SW846 8260B
	113	(70 - 130)	2.0	(0-30)	SW846 8260B
2-Hexanone	115	(70 - 130)			SW846 8260B
	112	(70 - 130)	3.0	(0-30)	SW846 8260B
Tetrachloroethene	93	(70 - 130)			SW846 8260B
	93	(70 - 130)	0.37	(0-30)	SW846 8260B
1,1,2,2-Tetrachloroethane	93	(70 - 130)			SW846 8260B
	97	(70 - 130)	3.8	(0-30)	SW846 8260B
Toluene	96	(70 - 130)			SW846 8260B
	97	(70 - 130)	1.1	(0-30)	SW846 8260B
Chlorobenzene	95	(70 - 130)			SW846 8260B
	95	(70 - 130)	0.31	(0-30)	SW846 8260B
Ethylbenzene	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	1.7	(0-30)	SW846 8260B
Styrene	103	(70 - 130)			SW846 8260B
	105	(70 - 130)	1.6	(0-30)	SW846 8260B
Xylenes (total)	98	(70 - 130)			SW846 8260B
	100	(70 - 130)	1.9	(0-30)	SW846 8260B
n-Hexane	86	(70 - 130)			SW846 8260B
	86	(70 - 130)	0.63	(0-30)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Cyclohexane	**96**	**(70 - 130)**			**SW846 8260B**
	97	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**
1,2-Dibromo-3-chloro- propane	**71**	**(70 - 130)**			**SW846 8260B**
	74	**(70 - 130)**	**3.5**	**(0-30)**	**SW846 8260B**
1,2-Dichlorobenzene	**97**	**(70 - 130)**			**SW846 8260B**
	99	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**
1,3-Dichlorobenzene	**93**	**(70 - 130)**			**SW846 8260B**
	93	**(70 - 130)**	**0.54**	**(0-30)**	**SW846 8260B**
1,4-Dichlorobenzene	**92**	**(70 - 130)**			**SW846 8260B**
	95	**(70 - 130)**	**2.9**	**(0-30)**	**SW846 8260B**
Dichlorodifluoromethane	**57 a**	**(70 - 130)**			**SW846 8260B**
	56 a	**(70 - 130)**	**2.6**	**(0-30)**	**SW846 8260B**
Freon 113	**105**	**(70 - 130)**			**SW846 8260B**
	108	**(70 - 130)**	**3.2**	**(0-30)**	**SW846 8260B**
Isopropylbenzene	**97**	**(70 - 130)**			**SW846 8260B**
	99	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**
Methyl acetate	**96**	**(70 - 130)**			**SW846 8260B**
	94	**(70 - 130)**	**1.6**	**(0-30)**	**SW846 8260B**
Methylcyclohexane	**89**	**(70 - 130)**			**SW846 8260B**
	91	**(70 - 130)**	**2.2**	**(0-30)**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**98**	**(70 - 130)**			**SW846 8260B**
	100	**(70 - 130)**	**2.8**	**(0-30)**	**SW846 8260B**
1,2,4-Trichloro- benzene	**53 a**	**(70 - 130)**			**SW846 8260B**
	56 a	**(70 - 130)**	**4.7**	**(0-30)**	**SW846 8260B**
Trichlorofluoromethane	**125**	**(70 - 130)**			**SW846 8260B**
	123	**(70 - 130)**	**2.0**	**(0-30)**	**SW846 8260B**
Acrolein	**127**	**(70 - 130)**			**SW846 8260B**
	124	**(70 - 130)**	**2.9**	**(0-30)**	**SW846 8260B**
Acrylonitrile	**104**	**(70 - 130)**			**SW846 8260B**
	106	**(70 - 130)**	**1.6**	**(0-30)**	**SW846 8260B**
Bromobenzene	**81**	**(70 - 130)**			**SW846 8260B**
	86	**(70 - 130)**	**5.8**	**(0-30)**	**SW846 8260B**
n-Butylbenzene	**91**	**(70 - 130)**			**SW846 8260B**
	92	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**
sec-Butylbenzene	**85**	**(70 - 130)**			**SW846 8260B**
	85	**(70 - 130)**	**0.10**	**(0-30)**	**SW846 8260B**

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
tert-Butylbenzene	83	(70 - 130)			SW846 8260B
	85	(70 - 130)	2.4	(0-30)	SW846 8260B
2-Chlorotoluene	85	(70 - 130)			SW846 8260B
	89	(70 - 130)	4.7	(0-30)	SW846 8260B
4-Chlorotoluene	87	(70 - 130)			SW846 8260B
	88	(70 - 130)	0.94	(0-30)	SW846 8260B
Dibromomethane	103	(70 - 130)			SW846 8260B
	106	(70 - 130)	2.4	(0-30)	SW846 8260B
trans-1,4-Dichloro-2-butene	199 a	(70 - 130)			SW846 8260B
	197 a	(70 - 130)	1.1	(0-30)	SW846 8260B
1,3-Dichloropropane	99	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.4	(0-30)	SW846 8260B
2,2-Dichloropropane	104	(70 - 130)			SW846 8260B
	103	(70 - 130)	0.53	(0-30)	SW846 8260B
1,1-Dichloropropene	98	(70 - 130)			SW846 8260B
	99	(70 - 130)	0.75	(0-30)	SW846 8260B
Ethyl methacrylate	0.0 a	(70 - 130)			SW846 8260B
	0.0 a	(70 - 130)	0.0	(0-30)	SW846 8260B
Hexachlorobutadiene	48 a	(70 - 130)			SW846 8260B
	50 a	(70 - 130)	4.1	(0-30)	SW846 8260B
Iodomethane	134 a	(70 - 130)			SW846 8260B
	140 a	(70 - 130)	4.8	(0-30)	SW846 8260B
p-Isopropyltoluene	93	(70 - 130)			SW846 8260B
	93	(70 - 130)	0.39	(0-30)	SW846 8260B
Naphthalene	53 a	(70 - 130)			SW846 8260B
	59 a	(70 - 130)	9.2	(0-30)	SW846 8260B
n-Propylbenzene	88	(70 - 130)			SW846 8260B
	89	(70 - 130)	1.2	(0-30)	SW846 8260B
1,1,1,2-Tetrachloroethane	99	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.5	(0-30)	SW846 8260B
1,2,3-Trichlorobenzene	49 a	(70 - 130)			SW846 8260B
	52 a	(70 - 130)	6.3	(0-30)	SW846 8260B
1,2,3-Trichloropropane	92	(70 - 130)			SW846 8260B
	97	(70 - 130)	4.6	(0-30)	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	105	(70 - 130)			SW846 8260B
	108	(70 - 130)	3.2	(0-30)	SW846 8260B
1,2,4-Trimethylbenzene	91	(70 - 130)			SW846 8260B
	94	(70 - 130)	2.5	(0-30)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3,5-Trimethylbenzene	**87**	**(70 - 130)**			**SW846 8260B**
	88	**(70 - 130)**	**1.2**	**(0-30)**	**SW846 8260B**
Vinyl acetate	**128**	**(70 - 130)**			**SW846 8260B**
	135 a	**(70 - 130)**	**5.1**	**(0-30)**	**SW846 8260B**
tert-Butyl alcohol	**105**	**(70 - 130)**			**SW846 8260B**
	107	**(70 - 130)**	**1.8**	**(0-30)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(50 - 150)
	77	(50 - 150)
1,2-Dichloroethane-d4	72	(50 - 150)
	73	(50 - 150)
Toluene-d8	80	(50 - 150)
	78	(50 - 150)
4-Bromofluorobenzene	94	(50 - 150)
	94	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11
Prep Date.....: 04/19/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1109091
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
cis-1,2-Dichloroethene	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	9.9	ug/L	99	0.19	SW846 8260B
trans-1,2-Dichloroethene	ND	10	10	ug/L	100		SW846 8260B
	ND	10	10	ug/L	100	0.09	SW846 8260B
1,2-Dibromoethane	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.9	ug/L	99	1.2	SW846 8260B
Bromochloromethane	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	101	1.8	SW846 8260B
m-Xylene & p-Xylene	ND	20	20	ug/L	98		SW846 8260B
	ND	20	20	ug/L	100	2.5	SW846 8260B
o-Xylene	ND	10	10	ug/L	100		SW846 8260B
	ND	10	10	ug/L	101	0.76	SW846 8260B
Chloromethane	ND	10	10	ug/L	102		SW846 8260B
	ND	10	9.4	ug/L	94	8.2	SW846 8260B
Bromomethane	ND	10	9.5	ug/L	95		SW846 8260B
	ND	10	9.8	ug/L	98	3.4	SW846 8260B
Vinyl chloride	ND	10	10	ug/L	101		SW846 8260B
	ND	10	10	ug/L	101	0.73	SW846 8260B
Chloroethane	ND	10	10	ug/L	103		SW846 8260B
	ND	10	10	ug/L	100	2.6	SW846 8260B
Methylene chloride	0.41	10	11	ug/L	106		SW846 8260B
	0.41	10	11	ug/L	111	4.3	SW846 8260B
Acetone	ND	20	19	ug/L	97		SW846 8260B
	ND	20	19	ug/L	96	1.5	SW846 8260B
Carbon disulfide	ND	10	13	ug/L	132 a		SW846 8260B
	ND	10	13	ug/L	133 a	1.2	SW846 8260B
1,1-Dichloroethene	ND	10	11	ug/L	111		SW846 8260B
	ND	10	11	ug/L	115	2.9	SW846 8260B
1,1-Dichloroethane	ND	10	9.7	ug/L	97		SW846 8260B
	ND	10	10	ug/L	100	2.2	SW846 8260B
1,2-Dichloroethene (total)	ND	20	20	ug/L	100		SW846 8260B
	ND	20	20	ug/L	100	0.05	SW846 8260B
Chloroform	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	9.9	ug/L	99	0.25	SW846 8260B
1,2-Dichloroethane	ND	10	9.7	ug/L	97		SW846 8260B
	ND	10	9.9	ug/L	99	1.6	SW846 8260B
2-Butanone	ND	20	21	ug/L	106		SW846 8260B
	ND	20	21	ug/L	105	0.69	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1,1-Trichloroethane	ND	10	10	ug/L	101		SW846 8260B
	ND	10	10	ug/L	101	0.31	SW846 8260B
Carbon tetrachloride	ND	10	10	ug/L	101		SW846 8260B
	ND	10	10	ug/L	101	0.02	SW846 8260B
Bromodichloromethane	ND	10	10	ug/L	101		SW846 8260B
	ND	10	10	ug/L	100	0.52	SW846 8260B
1,2-Dichloropropane	ND	10	10	ug/L	102		SW846 8260B
	ND	10	10	ug/L	101	0.83	SW846 8260B
cis-1,3-Dichloropropene	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	9.8	ug/L	98	1.6	SW846 8260B
Trichloroethene	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.8	ug/L	98	0.75	SW846 8260B
Dibromochloromethane	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	100	1.1	SW846 8260B
1,1,2-Trichloroethane	ND	10	10	ug/L	100		SW846 8260B
	ND	10	10	ug/L	100	0.12	SW846 8260B
Benzene	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	101	1.6	SW846 8260B
trans-1,3-Dichloropropene	ND	10	11	ug/L	109		SW846 8260B
	ND	10	11	ug/L	112	2.5	SW846 8260B
Bromoform	ND	10	9.7	ug/L	97		SW846 8260B
	ND	10	9.6	ug/L	96	0.62	SW846 8260B
4-Methyl-2-pentanone	ND	20	22	ug/L	111		SW846 8260B
	ND	20	23	ug/L	113	2.0	SW846 8260B
2-Hexanone	ND	20	23	ug/L	115		SW846 8260B
	ND	20	22	ug/L	112	3.0	SW846 8260B
Tetrachloroethene	ND	10	9.3	ug/L	93		SW846 8260B
	ND	10	9.3	ug/L	93	0.37	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	10	9.3	ug/L	93		SW846 8260B
	ND	10	9.7	ug/L	97	3.8	SW846 8260B
Toluene	ND	10	9.6	ug/L	96		SW846 8260B
	ND	10	9.7	ug/L	97	1.1	SW846 8260B
Chlorobenzene	ND	10	9.5	ug/L	95		SW846 8260B
	ND	10	9.5	ug/L	95	0.31	SW846 8260B
Ethylbenzene	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	100	1.7	SW846 8260B
Styrene	ND	10	10	ug/L	103		SW846 8260B
	ND	10	10	ug/L	105	1.6	SW846 8260B
Xylenes (total)	ND	30	30	ug/L	98		SW846 8260B
	ND	30	30	ug/L	100	1.9	SW846 8260B
n-Hexane	ND	10	8.6	ug/L	86		SW846 8260B
	ND	10	8.6	ug/L	86	0.63	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Cyclohexane	**ND**	**10**	**9.6**	**ug/L**	**96**		**SW846 8260B**
	ND	**10**	**9.7**	**ug/L**	**97**	**1.4**	**SW846 8260B**
1,2-Dibromo-3-chloro- propane	**ND**	**10**	**7.1**	**ug/L**	**71**		**SW846 8260B**
	ND	**10**	**7.4**	**ug/L**	**74**	**3.5**	**SW846 8260B**
1,2-Dichlorobenzene	**ND**	**10**	**9.7**	**ug/L**	**97**		**SW846 8260B**
	ND	**10**	**9.9**	**ug/L**	**99**	**1.4**	**SW846 8260B**
1,3-Dichlorobenzene	**ND**	**10**	**9.3**	**ug/L**	**93**		**SW846 8260B**
	ND	**10**	**9.3**	**ug/L**	**93**	**0.54**	**SW846 8260B**
1,4-Dichlorobenzene	**ND**	**10**	**9.2**	**ug/L**	**92**		**SW846 8260B**
	ND	**10**	**9.5**	**ug/L**	**95**	**2.9**	**SW846 8260B**
Dichlorodifluoromethane	**ND**	**10**	**5.7**	**ug/L**	**57 a**		**SW846 8260B**
	ND	**10**	**5.6**	**ug/L**	**56 a**	**2.6**	**SW846 8260B**
Freon 113	**ND**	**10**	**10**	**ug/L**	**105**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**108**	**3.2**	**SW846 8260B**
Isopropylbenzene	**ND**	**10**	**9.7**	**ug/L**	**97**		**SW846 8260B**
	ND	**10**	**9.9**	**ug/L**	**99**	**1.4**	**SW846 8260B**
Methyl acetate	**ND**	**10**	**9.6**	**ug/L**	**96**		**SW846 8260B**
	ND	**10**	**9.4**	**ug/L**	**94**	**1.6**	**SW846 8260B**
Methylcyclohexane	**ND**	**10**	**8.9**	**ug/L**	**89**		**SW846 8260B**
	ND	**10**	**9.1**	**ug/L**	**91**	**2.2**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**ND**	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**100**	**2.8**	**SW846 8260B**
1,2,4-Trichloro- benzene	**0.51**	**10**	**5.8**	**ug/L**	**53 a**		**SW846 8260B**
	0.51	**10**	**6.1**	**ug/L**	**56 a**	**4.7**	**SW846 8260B**
Trichlorofluoromethane	**ND**	**10**	**13**	**ug/L**	**125**		**SW846 8260B**
	ND	**10**	**12**	**ug/L**	**123**	**2.0**	**SW846 8260B**
Acrolein	**ND**	**30**	**38**	**ug/L**	**127**		**SW846 8260B**
	ND	**30**	**37**	**ug/L**	**124**	**2.9**	**SW846 8260B**
Acrylonitrile	**ND**	**30**	**31**	**ug/L**	**104**		**SW846 8260B**
	ND	**30**	**32**	**ug/L**	**106**	**1.6**	**SW846 8260B**
Bromobenzene	**ND**	**10**	**8.1**	**ug/L**	**81**		**SW846 8260B**
	ND	**10**	**8.6**	**ug/L**	**86**	**5.8**	**SW846 8260B**
n-Butylbenzene	**ND**	**10**	**9.1**	**ug/L**	**91**		**SW846 8260B**
	ND	**10**	**9.2**	**ug/L**	**92**	**1.4**	**SW846 8260B**
sec-Butylbenzene	**ND**	**10**	**8.5**	**ug/L**	**85**		**SW846 8260B**
	ND	**10**	**8.5**	**ug/L**	**85**	**0.10**	**SW846 8260B**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
tert-Butylbenzene	ND	10	8.3	ug/L	83		SW846 8260B
	ND	10	8.5	ug/L	85	2.4	SW846 8260B
2-Chlorotoluene	ND	10	8.5	ug/L	85		SW846 8260B
	ND	10	8.9	ug/L	89	4.7	SW846 8260B
4-Chlorotoluene	ND	10	8.7	ug/L	87		SW846 8260B
	ND	10	8.8	ug/L	88	0.94	SW846 8260B
Dibromomethane	ND	10	10	ug/L	103		SW846 8260B
	ND	10	11	ug/L	106	2.4	SW846 8260B
trans-1,4-Dichloro-2-butene	ND	10	20	ug/L	199 a		SW846 8260B
	ND	10	20	ug/L	197 a	1.1	SW846 8260B
1,3-Dichloropropane	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	101	1.4	SW846 8260B
2,2-Dichloropropane	ND	10	10	ug/L	104		SW846 8260B
	ND	10	10	ug/L	103	0.53	SW846 8260B
1,1-Dichloropropene	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.9	ug/L	99	0.75	SW846 8260B
Ethyl methacrylate	ND	10	0.0	ug/L	0.0 a		SW846 8260B
	ND	10	0.0	ug/L	0.0 a	0.0	SW846 8260B
Hexachlorobutadiene	0.77	10	5.5	ug/L	48 a		SW846 8260B
	0.77	10	5.7	ug/L	50 a	4.1	SW846 8260B
Iodomethane	ND	10	13	ug/L	134 a		SW846 8260B
	ND	10	14	ug/L	140 a	4.8	SW846 8260B
p-Isopropyltoluene	ND	10	9.3	ug/L	93		SW846 8260B
	ND	10	9.3	ug/L	93	0.39	SW846 8260B
Naphthalene	0.61	10	5.9	ug/L	53 a		SW846 8260B
	0.61	10	6.5	ug/L	59 a	9.2	SW846 8260B
n-Propylbenzene	ND	10	8.8	ug/L	88		SW846 8260B
	ND	10	8.9	ug/L	89	1.2	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	10	9.9	ug/L	99		SW846 8260B
	ND	10	10	ug/L	101	1.5	SW846 8260B
1,2,3-Trichlorobenzene	0.89	10	5.7	ug/L	49 a		SW846 8260B
	0.89	10	6.1	ug/L	52 a	6.3	SW846 8260B
1,2,3-Trichloropropane	ND	10	9.2	ug/L	92		SW846 8260B
	ND	10	9.7	ug/L	97	4.6	SW846 8260B
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	10	10	ug/L	105		SW846 8260B
	ND	10	11	ug/L	108	3.2	SW846 8260B
1,2,4-Trimethylbenzene	ND	10	9.1	ug/L	91		SW846 8260B
	ND	10	9.4	ug/L	94	2.5	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP131AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-018 MGP131AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,3,5-Trimethylbenzene	**ND**	**10**	**8.7**	**ug/L**	**87**		**SW846 8260B**
	ND	**10**	**8.8**	**ug/L**	**88**	**1.2**	**SW846 8260B**
Vinyl acetate	**ND**	**10**	**13**	**ug/L**	**128**		**SW846 8260B**
	ND	**10**	**14**	**ug/L**	**135 a**	**5.1**	**SW846 8260B**
tert-Butyl alcohol	**ND**	**200**	**210**	**ug/L**	**105**		**SW846 8260B**
	ND	**200**	**210**	**ug/L**	**107**	**1.8**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	79	(50 - 150)
	77	(50 - 150)
1,2-Dichloroethane-d4	72	(50 - 150)
	73	(50 - 150)
Toluene-d8	80	(50 - 150)
	78	(50 - 150)
4-Bromofluorobenzene	94	(50 - 150)
	94	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11
Prep Date.....: 04/19/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1109091
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,2-Dichloroethene	**99**	**(70 - 130)**			**SW846 8260B**
	94	**(70 - 130)**	**5.3**	**(0-30)**	**SW846 8260B**
trans-1,2-Dichloroethene	**102**	**(70 - 130)**			**SW846 8260B**
	98	**(70 - 130)**	**3.8**	**(0-30)**	**SW846 8260B**
1,2-Dibromoethane	**100**	**(70 - 130)**			**SW846 8260B**
	97	**(70 - 130)**	**3.4**	**(0-30)**	**SW846 8260B**
Bromochloromethane	**100**	**(70 - 130)**			**SW846 8260B**
	94	**(70 - 130)**	**5.7**	**(0-30)**	**SW846 8260B**
m-Xylene & p-Xylene	**102**	**(70 - 130)**			**SW846 8260B**
	96	**(70 - 130)**	**5.7**	**(0-30)**	**SW846 8260B**
o-Xylene	**103**	**(70 - 130)**			**SW846 8260B**
	97	**(70 - 130)**	**5.9**	**(0-30)**	**SW846 8260B**
Chloromethane	**102**	**(70 - 130)**			**SW846 8260B**
	91	**(70 - 130)**	**11**	**(0-30)**	**SW846 8260B**
Bromomethane	**98**	**(70 - 130)**			**SW846 8260B**
	92	**(70 - 130)**	**6.2**	**(0-30)**	**SW846 8260B**
Vinyl chloride	**100**	**(70 - 130)**			**SW846 8260B**
	98	**(70 - 130)**	**1.9**	**(0-30)**	**SW846 8260B**
Chloroethane	**101**	**(70 - 130)**			**SW846 8260B**
	100	**(70 - 130)**	**1.1**	**(0-30)**	**SW846 8260B**
Methylene chloride	**113**	**(70 - 130)**			**SW846 8260B**
	106	**(70 - 130)**	**6.2**	**(0-30)**	**SW846 8260B**
Acetone	**94**	**(70 - 130)**			**SW846 8260B**
	89	**(70 - 130)**	**5.1**	**(0-30)**	**SW846 8260B**
Carbon disulfide	**138 a**	**(70 - 130)**			**SW846 8260B**
	134 a	**(70 - 130)**	**2.9**	**(0-30)**	**SW846 8260B**
1,1-Dichloroethene	**115**	**(70 - 130)**			**SW846 8260B**
	115	**(70 - 130)**	**0.26**	**(0-30)**	**SW846 8260B**
1,1-Dichloroethane	**98**	**(70 - 130)**			**SW846 8260B**
	95	**(70 - 130)**	**3.4**	**(0-30)**	**SW846 8260B**
1,2-Dichloroethene (total)	**101**	**(70 - 130)**			**SW846 8260B**
	96	**(70 - 130)**	**4.6**	**(0-30)**	**SW846 8260B**
Chloroform	**99**	**(70 - 130)**			**SW846 8260B**
	94	**(70 - 130)**	**6.0**	**(0-30)**	**SW846 8260B**
1,2-Dichloroethane	**101**	**(70 - 130)**			**SW846 8260B**
	93	**(70 - 130)**	**8.4**	**(0-30)**	**SW846 8260B**
2-Butanone	**106**	**(70 - 130)**			**SW846 8260B**
	103	**(70 - 130)**	**2.9**	**(0-30)**	**SW846 8260B**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1,1-Trichloroethane	103	(70 - 130)			SW846 8260B
	99	(70 - 130)	3.6	(0-30)	SW846 8260B
Carbon tetrachloride	104	(70 - 130)			SW846 8260B
	106	(70 - 130)	2.0	(0-30)	SW846 8260B
Bromodichloromethane	103	(70 - 130)			SW846 8260B
	95	(70 - 130)	7.7	(0-30)	SW846 8260B
1,2-Dichloropropane	103	(70 - 130)			SW846 8260B
	96	(70 - 130)	6.6	(0-30)	SW846 8260B
cis-1,3-Dichloropropene	98	(70 - 130)			SW846 8260B
	91	(70 - 130)	7.5	(0-30)	SW846 8260B
Trichloroethene	97	(70 - 130)			SW846 8260B
	92	(70 - 130)	5.5	(0-30)	SW846 8260B
Dibromochloromethane	105	(70 - 130)			SW846 8260B
	98	(70 - 130)	7.1	(0-30)	SW846 8260B
1,1,2-Trichloroethane	102	(70 - 130)			SW846 8260B
	98	(70 - 130)	4.0	(0-30)	SW846 8260B
Benzene	101	(70 - 130)			SW846 8260B
	95	(70 - 130)	6.0	(0-30)	SW846 8260B
trans-1,3-Dichloropropene	111	(70 - 130)			SW846 8260B
	105	(70 - 130)	5.4	(0-30)	SW846 8260B
Bromoform	100	(70 - 130)			SW846 8260B
	97	(70 - 130)	3.7	(0-30)	SW846 8260B
4-Methyl-2-pentanone	112	(70 - 130)			SW846 8260B
	108	(70 - 130)	3.3	(0-30)	SW846 8260B
2-Hexanone	116	(70 - 130)			SW846 8260B
	116	(70 - 130)	0.03	(0-30)	SW846 8260B
Tetrachloroethene	95	(70 - 130)			SW846 8260B
	92	(70 - 130)	3.1	(0-30)	SW846 8260B
1,1,2,2-Tetrachloroethane	94	(70 - 130)			SW846 8260B
	90	(70 - 130)	4.2	(0-30)	SW846 8260B
Toluene	101	(70 - 130)			SW846 8260B
	94	(70 - 130)	7.2	(0-30)	SW846 8260B
Chlorobenzene	97	(70 - 130)			SW846 8260B
	93	(70 - 130)	4.4	(0-30)	SW846 8260B
Ethylbenzene	102	(70 - 130)			SW846 8260B
	98	(70 - 130)	4.1	(0-30)	SW846 8260B
Styrene	106	(70 - 130)			SW846 8260B
	99	(70 - 130)	7.0	(0-30)	SW846 8260B
Xylenes (total)	102	(70 - 130)			SW846 8260B
	96	(70 - 130)	5.8	(0-30)	SW846 8260B
n-Hexane	89	(70 - 130)			SW846 8260B
	99	(70 - 130)	10	(0-30)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Cyclohexane	**100**	**(70 - 130)**			**SW846 8260B**
	106	**(70 - 130)**	**5.8**	**(0-30)**	**SW846 8260B**
1,2-Dibromo-3-chloro- propane	**75**	**(70 - 130)**			**SW846 8260B**
	74	**(70 - 130)**	**1.5**	**(0-30)**	**SW846 8260B**
1,2-Dichlorobenzene	**97**	**(70 - 130)**			**SW846 8260B**
	93	**(70 - 130)**	**4.6**	**(0-30)**	**SW846 8260B**
1,3-Dichlorobenzene	**91**	**(70 - 130)**			**SW846 8260B**
	87	**(70 - 130)**	**4.6**	**(0-30)**	**SW846 8260B**
1,4-Dichlorobenzene	**93**	**(70 - 130)**			**SW846 8260B**
	89	**(70 - 130)**	**4.4**	**(0-30)**	**SW846 8260B**
Dichlorodifluoromethane	**60 a**	**(70 - 130)**			**SW846 8260B**
	63 a	**(70 - 130)**	**4.6**	**(0-30)**	**SW846 8260B**
Freon 113	**109**	**(70 - 130)**			**SW846 8260B**
	114	**(70 - 130)**	**4.2**	**(0-30)**	**SW846 8260B**
Isopropylbenzene	**101**	**(70 - 130)**			**SW846 8260B**
	97	**(70 - 130)**	**3.8**	**(0-30)**	**SW846 8260B**
Methyl acetate	**100**	**(70 - 130)**			**SW846 8260B**
	97	**(70 - 130)**	**3.3**	**(0-30)**	**SW846 8260B**
Methylcyclohexane	**93**	**(70 - 130)**			**SW846 8260B**
	98	**(70 - 130)**	**5.2**	**(0-30)**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**97**	**(70 - 130)**			**SW846 8260B**
	95	**(70 - 130)**	**2.0**	**(0-30)**	**SW846 8260B**
1,2,4-Trichloro- benzene	**52 a**	**(70 - 130)**			**SW846 8260B**
	55 a	**(70 - 130)**	**6.0**	**(0-30)**	**SW846 8260B**
Trichlorofluoromethane	**136 a**	**(70 - 130)**			**SW846 8260B**
	135 a	**(70 - 130)**	**0.73**	**(0-30)**	**SW846 8260B**
Acrolein	**128**	**(70 - 130)**			**SW846 8260B**
	119	**(70 - 130)**	**6.9**	**(0-30)**	**SW846 8260B**
Acrylonitrile	**108**	**(70 - 130)**			**SW846 8260B**
	106	**(70 - 130)**	**2.2**	**(0-30)**	**SW846 8260B**
Bromobenzene	**84**	**(70 - 130)**			**SW846 8260B**
	80	**(70 - 130)**	**5.1**	**(0-30)**	**SW846 8260B**
n-Butylbenzene	**90**	**(70 - 130)**			**SW846 8260B**
	89	**(70 - 130)**	**2.1**	**(0-30)**	**SW846 8260B**
sec-Butylbenzene	**85**	**(70 - 130)**			**SW846 8260B**
	84	**(70 - 130)**	**1.4**	**(0-30)**	**SW846 8260B**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
tert-Butylbenzene	**83**	**(70 - 130)**			**SW846 8260B**
	79	**(70 - 130)**	**4.7**	**(0-30)**	**SW846 8260B**
2-Chlorotoluene	**87**	**(70 - 130)**			**SW846 8260B**
	83	**(70 - 130)**	**4.1**	**(0-30)**	**SW846 8260B**
4-Chlorotoluene	**89**	**(70 - 130)**			**SW846 8260B**
	85	**(70 - 130)**	**4.6**	**(0-30)**	**SW846 8260B**
Dibromomethane	**106**	**(70 - 130)**			**SW846 8260B**
	99	**(70 - 130)**	**5.9**	**(0-30)**	**SW846 8260B**
trans-1,4-Dichloro-2-butene	**212 a**	**(70 - 130)**			**SW846 8260B**
	209 a	**(70 - 130)**	**1.1**	**(0-30)**	**SW846 8260B**
1,3-Dichloropropane	**99**	**(70 - 130)**			**SW846 8260B**
	95	**(70 - 130)**	**4.2**	**(0-30)**	**SW846 8260B**
2,2-Dichloropropane	**104**	**(70 - 130)**			**SW846 8260B**
	101	**(70 - 130)**	**2.5**	**(0-30)**	**SW846 8260B**
1,1-Dichloropropene	**101**	**(70 - 130)**			**SW846 8260B**
	98	**(70 - 130)**	**3.2**	**(0-30)**	**SW846 8260B**
Ethyl methacrylate	**0.0 a**	**(70 - 130)**			**SW846 8260B**
	0.0 a	**(70 - 130)**	**0.0**	**(0-30)**	**SW846 8260B**
Hexachlorobutadiene	**53 a**	**(70 - 130)**			**SW846 8260B**
	55 a	**(70 - 130)**	**5.0**	**(0-30)**	**SW846 8260B**
Iodomethane	**140 a**	**(70 - 130)**			**SW846 8260B**
	134 a	**(70 - 130)**	**4.7**	**(0-30)**	**SW846 8260B**
p-Isopropyltoluene	**92**	**(70 - 130)**			**SW846 8260B**
	90	**(70 - 130)**	**1.9**	**(0-30)**	**SW846 8260B**
Naphthalene	**49 a**	**(70 - 130)**			**SW846 8260B**
	58 a	**(70 - 130)**	**17**	**(0-30)**	**SW846 8260B**
n-Propylbenzene	**86**	**(70 - 130)**			**SW846 8260B**
	82	**(70 - 130)**	**4.6**	**(0-30)**	**SW846 8260B**
1,1,1,2-Tetrachloroethane	**103**	**(70 - 130)**			**SW846 8260B**
	97	**(70 - 130)**	**6.2**	**(0-30)**	**SW846 8260B**
1,2,3-Trichlorobenzene	**49 a**	**(70 - 130)**			**SW846 8260B**
	56 a	**(70 - 130)**	**13**	**(0-30)**	**SW846 8260B**
1,2,3-Trichloropropane	**89**	**(70 - 130)**			**SW846 8260B**
	90	**(70 - 130)**	**1.6**	**(0-30)**	**SW846 8260B**
1,1,2-Trichloro-1,2,2-trifluoroethane	**109**	**(70 - 130)**			**SW846 8260B**
	114	**(70 - 130)**	**4.2**	**(0-30)**	**SW846 8260B**
1,2,4-Trimethylbenzene	**92**	**(70 - 130)**			**SW846 8260B**
	88	**(70 - 130)**	**4.3**	**(0-30)**	**SW846 8260B**

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3,5-Trimethylbenzene	**89**	**(70 - 130)**			**SW846 8260B**
	85	**(70 - 130)**	**4.9**	**(0-30)**	**SW846 8260B**
Vinyl acetate	**129**	**(70 - 130)**			**SW846 8260B**
	122	**(70 - 130)**	**5.0**	**(0-30)**	**SW846 8260B**
tert-Butyl alcohol	**104**	**(70 - 130)**			**SW846 8260B**
	102	**(70 - 130)**	**2.4**	**(0-30)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	77	(50 - 150)
	77	(50 - 150)
1,2-Dichloroethane-d4	74	(50 - 150)
	73	(50 - 150)
Toluene-d8	81	(50 - 150)
	80	(50 - 150)
4-Bromofluorobenzene	96	(50 - 150)
	96	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11
Prep Date.....: 04/19/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1109091
Dilution Factor: 1 **Initial Wgt/Vol:** 5 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
cis-1,2-Dichloroethene	**ND**	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	ND	**10**	**9.4**	**ug/L**	**94**	**5.3**	**SW846 8260B**
trans-1,2-Dichloroethene	**ND**	**10**	**10**	**ug/L**	**102**		**SW846 8260B**
	ND	**10**	**9.8**	**ug/L**	**98**	**3.8**	**SW846 8260B**
1,2-Dibromoethane	**ND**	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	ND	**10**	**9.7**	**ug/L**	**97**	**3.4**	**SW846 8260B**
Bromochloromethane	**ND**	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	ND	**10**	**9.4**	**ug/L**	**94**	**5.7**	**SW846 8260B**
m-Xylene & p-Xylene	**ND**	**20**	**20**	**ug/L**	**102**		**SW846 8260B**
	ND	**20**	**19**	**ug/L**	**96**	**5.7**	**SW846 8260B**
o-Xylene	**ND**	**10**	**10**	**ug/L**	**103**		**SW846 8260B**
	ND	**10**	**9.7**	**ug/L**	**97**	**5.9**	**SW846 8260B**
Chloromethane	**ND**	**10**	**10**	**ug/L**	**102**		**SW846 8260B**
	ND	**10**	**9.1**	**ug/L**	**91**	**11**	**SW846 8260B**
Bromomethane	**ND**	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**9.2**	**ug/L**	**92**	**6.2**	**SW846 8260B**
Vinyl chloride	**ND**	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	ND	**10**	**9.8**	**ug/L**	**98**	**1.9**	**SW846 8260B**
Chloroethane	**ND**	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**100**	**1.1**	**SW846 8260B**
Methylene chloride	**ND**	**10**	**12**	**ug/L**	**113**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**106**	**6.2**	**SW846 8260B**
Acetone	**ND**	**20**	**19**	**ug/L**	**94**		**SW846 8260B**
	ND	**20**	**18**	**ug/L**	**89**	**5.1**	**SW846 8260B**
Carbon disulfide	**ND**	**10**	**14**	**ug/L**	**138 a**		**SW846 8260B**
	ND	**10**	**13**	**ug/L**	**134 a**	**2.9**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10**	**11**	**ug/L**	**115**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**115**	**0.26**	**SW846 8260B**
1,1-Dichloroethane	**ND**	**10**	**9.8**	**ug/L**	**98**		**SW846 8260B**
	ND	**10**	**9.5**	**ug/L**	**95**	**3.4**	**SW846 8260B**
1,2-Dichloroethene (total)	**ND**	**20**	**20**	**ug/L**	**101**		**SW846 8260B**
	ND	**20**	**19**	**ug/L**	**96**	**4.6**	**SW846 8260B**
Chloroform	**ND**	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	ND	**10**	**9.4**	**ug/L**	**94**	**6.0**	**SW846 8260B**
1,2-Dichloroethane	**ND**	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	ND	**10**	**9.3**	**ug/L**	**93**	**8.4**	**SW846 8260B**
2-Butanone	**ND**	**20**	**21**	**ug/L**	**106**		**SW846 8260B**
	ND	**20**	**21**	**ug/L**	**103**	**2.9**	**SW846 8260B**

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,1,1-Trichloroethane	ND	10	10	ug/L	103		SW846 8260B
	ND	10	9.9	ug/L	99	3.6	SW846 8260B
Carbon tetrachloride	ND	10	10	ug/L	104		SW846 8260B
	ND	10	11	ug/L	106	2.0	SW846 8260B
Bromodichloromethane	ND	10	10	ug/L	103		SW846 8260B
	ND	10	9.5	ug/L	95	7.7	SW846 8260B
1,2-Dichloropropane	ND	10	10	ug/L	103		SW846 8260B
	ND	10	9.6	ug/L	96	6.6	SW846 8260B
cis-1,3-Dichloropropene	ND	10	9.8	ug/L	98		SW846 8260B
	ND	10	9.1	ug/L	91	7.5	SW846 8260B
Trichloroethene	ND	10	9.7	ug/L	97		SW846 8260B
	ND	10	9.2	ug/L	92	5.5	SW846 8260B
Dibromochloromethane	ND	10	10	ug/L	105		SW846 8260B
	ND	10	9.8	ug/L	98	7.1	SW846 8260B
1,1,2-Trichloroethane	ND	10	10	ug/L	102		SW846 8260B
	ND	10	9.8	ug/L	98	4.0	SW846 8260B
Benzene	ND	10	10	ug/L	101		SW846 8260B
	ND	10	9.5	ug/L	95	6.0	SW846 8260B
trans-1,3-Dichloropropene	ND	10	11	ug/L	111		SW846 8260B
	ND	10	11	ug/L	105	5.4	SW846 8260B
Bromoform	ND	10	10	ug/L	100		SW846 8260B
	ND	10	9.7	ug/L	97	3.7	SW846 8260B
4-Methyl-2-pentanone	ND	20	22	ug/L	112		SW846 8260B
	ND	20	22	ug/L	108	3.3	SW846 8260B
2-Hexanone	ND	20	23	ug/L	116		SW846 8260B
	ND	20	23	ug/L	116	0.03	SW846 8260B
Tetrachloroethene	ND	10	9.5	ug/L	95		SW846 8260B
	ND	10	9.2	ug/L	92	3.1	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	10	9.4	ug/L	94		SW846 8260B
	ND	10	9.0	ug/L	90	4.2	SW846 8260B
Toluene	ND	10	10	ug/L	101		SW846 8260B
	ND	10	9.4	ug/L	94	7.2	SW846 8260B
Chlorobenzene	ND	10	9.7	ug/L	97		SW846 8260B
	ND	10	9.3	ug/L	93	4.4	SW846 8260B
Ethylbenzene	ND	10	10	ug/L	102		SW846 8260B
	ND	10	9.8	ug/L	98	4.1	SW846 8260B
Styrene	ND	10	11	ug/L	106		SW846 8260B
	ND	10	9.9	ug/L	99	7.0	SW846 8260B
Xylenes (total)	ND	30	31	ug/L	102		SW846 8260B
	ND	30	29	ug/L	96	5.8	SW846 8260B
n-Hexane	ND	10	8.9	ug/L	89		SW846 8260B
	ND	10	9.9	ug/L	99	10	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Cyclohexane	**ND**	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**106**	**5.8**	**SW846 8260B**
1,2-Dibromo-3-chloro- propane	**ND**	**10**	**7.5**	**ug/L**	**75**		**SW846 8260B**
	ND	**10**	**7.4**	**ug/L**	**74**	**1.5**	**SW846 8260B**
1,2-Dichlorobenzene	**ND**	**10**	**9.7**	**ug/L**	**97**		**SW846 8260B**
	ND	**10**	**9.3**	**ug/L**	**93**	**4.6**	**SW846 8260B**
1,3-Dichlorobenzene	**ND**	**10**	**9.1**	**ug/L**	**91**		**SW846 8260B**
	ND	**10**	**8.7**	**ug/L**	**87**	**4.6**	**SW846 8260B**
1,4-Dichlorobenzene	**ND**	**10**	**9.3**	**ug/L**	**93**		**SW846 8260B**
	ND	**10**	**8.9**	**ug/L**	**89**	**4.4**	**SW846 8260B**
Dichlorodifluoromethane	**ND**	**10**	**6.0**	**ug/L**	**60 a**		**SW846 8260B**
	ND	**10**	**6.3**	**ug/L**	**63 a**	**4.6**	**SW846 8260B**
Freon 113	**ND**	**10**	**11**	**ug/L**	**109**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**114**	**4.2**	**SW846 8260B**
Isopropylbenzene	**ND**	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	ND	**10**	**9.7**	**ug/L**	**97**	**3.8**	**SW846 8260B**
Methyl acetate	**ND**	**10**	**10**	**ug/L**	**100**		**SW846 8260B**
	ND	**10**	**9.7**	**ug/L**	**97**	**3.3**	**SW846 8260B**
Methylcyclohexane	**ND**	**10**	**9.3**	**ug/L**	**93**		**SW846 8260B**
	ND	**10**	**9.8**	**ug/L**	**98**	**5.2**	**SW846 8260B**
Methyl tert-butyl ether (MTBE)	**ND**	**10**	**9.7**	**ug/L**	**97**		**SW846 8260B**
	ND	**10**	**9.5**	**ug/L**	**95**	**2.0**	**SW846 8260B**
1,2,4-Trichloro- benzene	**ND**	**10**	**5.2**	**ug/L**	**52 a**		**SW846 8260B**
	ND	**10**	**5.5**	**ug/L**	**55 a**	**6.0**	**SW846 8260B**
Trichlorofluoromethane	**ND**	**10**	**14**	**ug/L**	**136 a**		**SW846 8260B**
	ND	**10**	**13**	**ug/L**	**135 a**	**0.73**	**SW846 8260B**
Acrolein	**ND**	**30**	**38**	**ug/L**	**128**		**SW846 8260B**
	ND	**30**	**36**	**ug/L**	**119**	**6.9**	**SW846 8260B**
Acrylonitrile	**ND**	**30**	**32**	**ug/L**	**108**		**SW846 8260B**
	ND	**30**	**32**	**ug/L**	**106**	**2.2**	**SW846 8260B**
Bromobenzene	**ND**	**10**	**8.4**	**ug/L**	**84**		**SW846 8260B**
	ND	**10**	**8.0**	**ug/L**	**80**	**5.1**	**SW846 8260B**
n-Butylbenzene	**ND**	**10**	**9.0**	**ug/L**	**90**		**SW846 8260B**
	ND	**10**	**8.9**	**ug/L**	**89**	**2.1**	**SW846 8260B**
sec-Butylbenzene	**ND**	**10**	**8.5**	**ug/L**	**85**		**SW846 8260B**
	ND	**10**	**8.4**	**ug/L**	**84**	**1.4**	**SW846 8260B**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
tert-Butylbenzene	**ND**	**10**	**8.3**	**ug/L**	**83**		**SW846 8260B**
	ND	**10**	**7.9**	**ug/L**	**79**	**4.7**	**SW846 8260B**
2-Chlorotoluene	**ND**	**10**	**8.7**	**ug/L**	**87**		**SW846 8260B**
	ND	**10**	**8.3**	**ug/L**	**83**	**4.1**	**SW846 8260B**
4-Chlorotoluene	**ND**	**10**	**8.9**	**ug/L**	**89**		**SW846 8260B**
	ND	**10**	**8.5**	**ug/L**	**85**	**4.6**	**SW846 8260B**
Dibromomethane	**ND**	**10**	**11**	**ug/L**	**106**		**SW846 8260B**
	ND	**10**	**9.9**	**ug/L**	**99**	**5.9**	**SW846 8260B**
trans-1,4-Dichloro- 2-butene	**ND**	**10**	**21**	**ug/L**	**212 a**		**SW846 8260B**
	ND	**10**	**21**	**ug/L**	**209 a**	**1.1**	**SW846 8260B**
1,3-Dichloropropane	**ND**	**10**	**9.9**	**ug/L**	**99**		**SW846 8260B**
	ND	**10**	**9.5**	**ug/L**	**95**	**4.2**	**SW846 8260B**
2,2-Dichloropropane	**ND**	**10**	**10**	**ug/L**	**104**		**SW846 8260B**
	ND	**10**	**10**	**ug/L**	**101**	**2.5**	**SW846 8260B**
1,1-Dichloropropene	**ND**	**10**	**10**	**ug/L**	**101**		**SW846 8260B**
	ND	**10**	**9.8**	**ug/L**	**98**	**3.2**	**SW846 8260B**
Ethyl methacrylate	**ND**	**10**	**0.0**	**ug/L**	**0.0 a**		**SW846 8260B**
	ND	**10**	**0.0**	**ug/L**	**0.0 a**	**0.0**	**SW846 8260B**
Hexachlorobutadiene	**ND**	**10**	**5.3**	**ug/L**	**53 a**		**SW846 8260B**
	ND	**10**	**5.5**	**ug/L**	**55 a**	**5.0**	**SW846 8260B**
Iodomethane	**ND**	**10**	**14**	**ug/L**	**140 a**		**SW846 8260B**
	ND	**10**	**13**	**ug/L**	**134 a**	**4.7**	**SW846 8260B**
p-Isopropyltoluene	**ND**	**10**	**9.2**	**ug/L**	**92**		**SW846 8260B**
	ND	**10**	**9.0**	**ug/L**	**90**	**1.9**	**SW846 8260B**
Naphthalene	**ND**	**10**	**4.9**	**ug/L**	**49 a**		**SW846 8260B**
	ND	**10**	**5.8**	**ug/L**	**58 a**	**17**	**SW846 8260B**
n-Propylbenzene	**ND**	**10**	**8.6**	**ug/L**	**86**		**SW846 8260B**
	ND	**10**	**8.2**	**ug/L**	**82**	**4.6**	**SW846 8260B**
1,1,1,2-Tetrachloroethane	**ND**	**10**	**10**	**ug/L**	**103**		**SW846 8260B**
	ND	**10**	**9.7**	**ug/L**	**97**	**6.2**	**SW846 8260B**
1,2,3-Trichlorobenzene	**ND**	**10**	**4.9**	**ug/L**	**49 a**		**SW846 8260B**
	ND	**10**	**5.6**	**ug/L**	**56 a**	**13**	**SW846 8260B**
1,2,3-Trichloropropane	**ND**	**10**	**8.9**	**ug/L**	**89**		**SW846 8260B**
	ND	**10**	**9.0**	**ug/L**	**90**	**1.6**	**SW846 8260B**
1,1,2-Trichloro- 1,2,2-trifluoroethane	**ND**	**10**	**11**	**ug/L**	**109**		**SW846 8260B**
	ND	**10**	**11**	**ug/L**	**114**	**4.2**	**SW846 8260B**
1,2,4-Trimethylbenzene	**ND**	**10**	**9.2**	**ug/L**	**92**		**SW846 8260B**
	ND	**10**	**8.8**	**ug/L**	**88**	**4.3**	**SW846 8260B**

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: A1D080416 **Work Order #...:** MGP1D1AC-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080405-002 MGP1D1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,3,5-Trimethylbenzene	**ND**	**10**	**8.9**	**ug/L**	**89**		**SW846 8260B**
	ND	**10**	**8.5**	**ug/L**	**85**	**4.9**	**SW846 8260B**
Vinyl acetate	**ND**	**10**	**13**	**ug/L**	**129**		**SW846 8260B**
	ND	**10**	**12**	**ug/L**	**122**	**5.0**	**SW846 8260B**
tert-Butyl alcohol	**ND**	**200**	**210**	**ug/L**	**104**		**SW846 8260B**
	ND	**200**	**200**	**ug/L**	**102**	**2.4**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	77	(50 - 150)
	77	(50 - 150)
1,2-Dichloroethane-d4	74	(50 - 150)
	73	(50 - 150)
Toluene-d8	81	(50 - 150)
	80	(50 - 150)
4-Bromofluorobenzene	96	(50 - 150)
	96	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Lot/SDG Number: **A1D080416**

Sample Control Chain of Custody - TAL North Canton
GC/MS Volatiles

Lot Number	Sample	Work Order	Analysis Type	Analysis Date	Analyst
A1D080416	7	MGP5R1AA	Volatile Organics, GC/MS (8260B)	04/19/11	Laura Evans
A1D080416	9	MGP531AA	Volatile Organics, GC/MS (8260B)	04/19/11	Laura Evans

GCMS SEMIVOLATILE DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

GC/MS Semivolatiles

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R1AC **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11
Prep Date.....: 04/11/11 **Analysis Date..:** 04/14/11
Prep Batch #...: 1101057
Dilution Factor: 1 **Initial Wgt/Vol:** 980 mL **Final Wgt/Vol..:** 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	0.20	ug/L
Acenaphthylene	ND	0.20	ug/L
Anthracene	ND	0.20	ug/L
Benzo(a)anthracene	ND	0.20	ug/L
Benzo(b)fluoranthene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.20	ug/L
Benzoic acid	ND	10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(a)pyrene	ND	0.20	ug/L
Benzyl alcohol	ND	5.0	ug/L
bis(2-Chloroethoxy) methane	ND	1.0	ug/L
bis(2-Chloroethyl)-ether	ND	1.0	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	2.0	ug/L
Butyl benzyl phthalate	ND	1.0	ug/L
4-Chloroaniline	ND	2.0	ug/L
4-Chloro-3-methylphenol	ND	2.0	ug/L
2-Chloronaphthalene	ND	1.0	ug/L
2-Chlorophenol	ND	1.0	ug/L
4-Chlorophenyl phenyl ether	ND	2.0	ug/L
Chrysene	ND	0.20	ug/L
Dibenz(a,h)anthracene	ND	0.20	ug/L
Dibenzofuran	ND	1.0	ug/L
Di-n-butyl phthalate	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
3,3'-Dichlorobenzidine	ND	5.0	ug/L
2,4-Dichlorophenol	ND	2.0	ug/L
Diethyl phthalate	ND	1.0	ug/L
2,4-Dimethylphenol	ND	2.0	ug/L
Dimethyl phthalate	ND	1.0	ug/L
Di-n-octyl phthalate	ND	1.0	ug/L

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

GC/MS Semivolatiles

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R1AC **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4,6-Dinitro-2-methylphenol	ND	5.0	ug/L
2,4-Dinitrotoluene	**1.2 J**	**5.0**	**ug/L**
2,6-Dinitrotoluene	ND	5.0	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Hexachlorobenzene	ND	0.20	ug/L
Hexachlorobutadiene	ND	1.0	ug/L
Hexachlorocyclopenta-diene	ND	10	ug/L
Hexachloroethane	ND	1.0	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
Isophorone	ND	1.0	ug/L
2-Methylnaphthalene	ND	0.20	ug/L
2-Methylphenol	ND	1.0	ug/L
4-Methylphenol	ND	1.0	ug/L
Naphthalene	ND	0.20	ug/L
2-Nitroaniline	ND	2.0	ug/L
3-Nitroaniline	ND	2.0	ug/L
4-Nitroaniline	ND	2.0	ug/L
Nitrobenzene	ND	1.0	ug/L
2-Nitrophenol	ND	2.0	ug/L
4-Nitrophenol	ND	5.0	ug/L
N-Nitrosodi-n-propyl-amine	ND	1.0	ug/L
N-Nitrosodiphenylamine	ND	1.0	ug/L
Pentachlorophenol	ND	5.0	ug/L
Phenanthrene	ND	0.20	ug/L
Phenol	ND	1.0	ug/L
Pyrene	ND	0.20	ug/L
1,2,4-Trichloro-benzene	ND	1.0	ug/L
2,4,5-Trichloro-phenol	ND	5.0	ug/L
2,4,6-Trichloro-phenol	ND	5.0	ug/L
Carbazole	ND	1.0	ug/L
2,2'-oxybis (1-Chloropropane)	ND	1.0	ug/L

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

GC/MS Semivolatiles

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R1AC **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	44 *	(50 - 150)
2-Fluorobiphenyl	48 *	(50 - 150)
Terphenyl-d14	58	(50 - 150)
Phenol-d5	52	(50 - 150)
2-Fluorophenol	49 *	(50 - 150)
2,4,6-Tribromophenol	56	(50 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

GC/MS Semivolatiles

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R2AC **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11
Prep Date.....: 04/19/11 **Analysis Date..:** 04/21/11
Prep Batch #...: 1109035
Dilution Factor: 1 **Initial Wgt/Vol:** 960 mL **Final Wgt/Vol..:** 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	52	(50 - 150)
2-Fluorobiphenyl	56	(50 - 150)
Terphenyl-d14	73	(50 - 150)
Phenol-d5	54	(50 - 150)
2-Fluorophenol	51	(50 - 150)
2,4,6-Tribromophenol	57	(50 - 150)

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

GC/MS Semivolatiles

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP531AC **Matrix.....:** WG
Date Sampled...: 04/07/11 15:00 **Date Received..:** 04/08/11
Prep Date.....: 04/11/11 **Analysis Date..:** 04/14/11
Prep Batch #...: 1101057
Dilution Factor: 1 **Initial Wgt/Vol:** 960 mL **Final Wgt/Vol..:** 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	0.20	ug/L
Acenaphthylene	ND	0.20	ug/L
Anthracene	ND	0.20	ug/L
Benzo(a)anthracene	ND	0.20	ug/L
Benzo(b)fluoranthene	ND	0.20	ug/L
Benzo(k)fluoranthene	ND	0.20	ug/L
Benzoic acid	ND	10	ug/L
Benzo(ghi)perylene	ND	0.20	ug/L
Benzo(a)pyrene	ND	0.20	ug/L
Benzyl alcohol	ND	5.0	ug/L
bis(2-Chloroethoxy) methane	ND	1.0	ug/L
bis(2-Chloroethyl)-ether	ND	1.0	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	2.0	ug/L
Butyl benzyl phthalate	ND	1.0	ug/L
4-Chloroaniline	ND	2.0	ug/L
4-Chloro-3-methylphenol	ND	2.0	ug/L
2-Chloronaphthalene	ND	1.0	ug/L
2-Chlorophenol	ND	1.0	ug/L
4-Chlorophenyl phenyl ether	ND	2.0	ug/L
Chrysene	ND	0.20	ug/L
Dibenz(a,h)anthracene	ND	0.20	ug/L
Dibenzofuran	ND	1.0	ug/L
Di-n-butyl phthalate	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
3,3'-Dichlorobenzidine	ND	5.0	ug/L
2,4-Dichlorophenol	ND	2.0	ug/L
Diethyl phthalate	ND	1.0	ug/L
2,4-Dimethylphenol	ND	2.0	ug/L
Dimethyl phthalate	ND	1.0	ug/L
Di-n-octyl phthalate	ND	1.0	ug/L

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

GC/MS Semivolatiles

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP531AC **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4,6-Dinitro-2-methylphenol	ND	5.0	ug/L
2,4-Dinitrotoluene	ND	5.0	ug/L
2,6-Dinitrotoluene	ND	5.0	ug/L
Fluoranthene	ND	0.20	ug/L
Fluorene	ND	0.20	ug/L
Hexachlorobenzene	ND	0.20	ug/L
Hexachlorobutadiene	ND	1.0	ug/L
Hexachlorocyclopenta-diene	ND	10	ug/L
Hexachloroethane	ND	1.0	ug/L
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L
Isophorone	ND	1.0	ug/L
2-Methylnaphthalene	ND	0.20	ug/L
2-Methylphenol	ND	1.0	ug/L
4-Methylphenol	ND	1.0	ug/L
Naphthalene	ND	0.20	ug/L
2-Nitroaniline	ND	2.0	ug/L
3-Nitroaniline	ND	2.0	ug/L
4-Nitroaniline	ND	2.0	ug/L
Nitrobenzene	ND	1.0	ug/L
2-Nitrophenol	ND	2.0	ug/L
4-Nitrophenol	ND	5.0	ug/L
N-Nitrosodi-n-propyl-amine	ND	1.0	ug/L
N-Nitrosodiphenylamine	ND	1.0	ug/L
Pentachlorophenol	ND	5.0	ug/L
Phenanthrene	ND	0.20	ug/L
Phenol	ND	1.0	ug/L
Pyrene	ND	0.20	ug/L
1,2,4-Trichloro-benzene	ND	1.0	ug/L
2,4,5-Trichloro-phenol	ND	5.0	ug/L
2,4,6-Trichloro-phenol	ND	5.0	ug/L
Carbazole	ND	1.0	ug/L
2,2'-oxybis (1-Chloropropane)	ND	1.0	ug/L

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

GC/MS Semivolatiles

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP531AC **Matrix.....:** WG

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	45 *	(50 - 150)
2-Fluorobiphenyl	48 *	(50 - 150)
Terphenyl-d14	56	(50 - 150)
Phenol-d5	51	(50 - 150)
2-Fluorophenol	50	(50 - 150)
2,4,6-Tribromophenol	54	(50 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

GC/MS Semivolatiles

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP532AC **Matrix.....:** WG
Date Sampled...: 04/07/11 15:00 **Date Received..:** 04/08/11
Prep Date.....: 04/19/11 **Analysis Date..:** 04/21/11
Prep Batch #...: 1109035
Dilution Factor: 1 **Initial Wgt/Vol:** 960 mL **Final Wgt/Vol..:** 2 mL
Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	57	(50 - 150)
2-Fluorobiphenyl	61	(50 - 150)
Terphenyl-d14	74	(50 - 150)
Phenol-d5	63	(50 - 150)
2-Fluorophenol	61	(50 - 150)
2,4,6-Tribromophenol	67	(50 - 150)

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D110000-057

Prep Date.....: 04/11/11 **Final Wgt/Vol..:** 2 mL
Analysis Date..: 04/14/11 **Prep Batch #...:** 1101057
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	0.20	ug/L	SW846 8270C
Acenaphthylene	ND	0.20	ug/L	SW846 8270C
Anthracene	ND	0.20	ug/L	SW846 8270C
Benzo(a)anthracene	ND	0.20	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	0.20	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	0.20	ug/L	SW846 8270C
Benzoic acid	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	0.20	ug/L	SW846 8270C
Benzo(a)pyrene	ND	0.20	ug/L	SW846 8270C
Benzyl alcohol	ND	5.0	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	1.0	ug/L	SW846 8270C
bis(2-Chloroethyl)-ether	ND	1.0	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
4-Bromophenyl phenyl ether	ND	2.0	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	1.0	ug/L	SW846 8270C
4-Chloroaniline	ND	2.0	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	2.0	ug/L	SW846 8270C
2-Chloronaphthalene	ND	1.0	ug/L	SW846 8270C
2-Chlorophenol	ND	1.0	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	2.0	ug/L	SW846 8270C
Chrysene	ND	0.20	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	0.20	ug/L	SW846 8270C
Dibenzofuran	ND	1.0	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	1.0	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	5.0	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	2.0	ug/L	SW846 8270C
Diethyl phthalate	ND	1.0	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	2.0	ug/L	SW846 8270C
Dimethyl phthalate	ND	1.0	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	1.0	ug/L	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	5.0	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	5.0	ug/L	SW846 8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,6-Dinitrotoluene	ND	5.0	ug/L	SW846 8270C
Fluoranthene	ND	0.20	ug/L	SW846 8270C
Fluorene	ND	0.20	ug/L	SW846 8270C
Hexachlorobenzene	ND	0.20	ug/L	SW846 8270C
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	1.0	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	0.20	ug/L	SW846 8270C
Isophorone	ND	1.0	ug/L	SW846 8270C
2-Methylnaphthalene	ND	0.20	ug/L	SW846 8270C
2-Methylphenol	ND	1.0	ug/L	SW846 8270C
4-Methylphenol	ND	1.0	ug/L	SW846 8270C
Naphthalene	ND	0.20	ug/L	SW846 8270C
2-Nitroaniline	ND	2.0	ug/L	SW846 8270C
3-Nitroaniline	ND	2.0	ug/L	SW846 8270C
4-Nitroaniline	ND	2.0	ug/L	SW846 8270C
Nitrobenzene	ND	1.0	ug/L	SW846 8270C
2-Nitrophenol	ND	2.0	ug/L	SW846 8270C
4-Nitrophenol	ND	5.0	ug/L	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	1.0	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	1.0	ug/L	SW846 8270C
Pentachlorophenol	ND	5.0	ug/L	SW846 8270C
Phenanthrene	ND	0.20	ug/L	SW846 8270C
Phenol	ND	1.0	ug/L	SW846 8270C
Pyrene	ND	0.20	ug/L	SW846 8270C
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	5.0	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	5.0	ug/L	SW846 8270C
Carbazole	ND	1.0	ug/L	SW846 8270C
2,2'-oxybis (1-Chloropropane)	ND	1.0	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	46 *	(50 - 150)
2-Fluorobiphenyl	49 *	(50 - 150)
Terphenyl-d14	59	(50 - 150)
Phenol-d5	53	(50 - 150)
2-Fluorophenol	50	(50 - 150)
2,4,6-Tribromophenol	54	(50 - 150)

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AA **Matrix.....:** WATER

NOTE(S):

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

* Surrogate recovery is outside stated control limits.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6N11AA **Matrix.....:** WATER
MB Lot-Sample #: A1D190000-035

Prep Date.....: 04/19/11 **Final Wgt/Vol..:** 2 mL
Analysis Date..: 04/21/11 **Prep Batch #...:** 1109035
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4-Dinitrophenol	ND	5.0	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	54	(50 - 150)
2-Fluorobiphenyl	58	(50 - 150)
Terphenyl-d14	75	(50 - 150)
Phenol-d5	62	(50 - 150)
2-Fluorophenol	59	(50 - 150)
2,4,6-Tribromophenol	66	(50 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D110000-057
Prep Date.....: 04/11/11 **Analysis Date..:** 04/14/11
Prep Batch #...: 1101057
Dilution Factor: 1 **Final Wgt/Vol..:** 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2,4-Trichloro-benzene	46	(30 - 120)	SW846 8270C
Acenaphthene	49	(31 - 120)	SW846 8270C
2,4-Dinitrotoluene	50	(34 - 151)	SW846 8270C
Pyrene	49	(35 - 139)	SW846 8270C
N-Nitrosodi-n-propyl-amine	47	(30 - 132)	SW846 8270C
1,4-Dichlorobenzene	49	(30 - 115)	SW846 8270C
Pentachlorophenol	46	(30 - 150)	SW846 8270C
Phenol	53	(30 - 115)	SW846 8270C
2-Chlorophenol	52	(30 - 120)	SW846 8270C
4-Chloro-3-methylphenol	51	(31 - 121)	SW846 8270C
4-Nitrophenol	51	(30 - 138)	SW846 8270C
1,2-Dichlorobenzene	49	(30 - 120)	SW846 8270C
1,3-Dichlorobenzene	47	(30 - 120)	SW846 8270C
2,4,5-Trichloro-phenol	52	(36 - 135)	SW846 8270C
4-Methylphenol	51	(31 - 115)	SW846 8270C
4-Nitroaniline	46	(30 - 140)	SW846 8270C
Acenaphthylene	48	(37 - 115)	SW846 8270C
Anthracene	50	(45 - 118)	SW846 8270C
Benzo(a)anthracene	46	(43 - 138)	SW846 8270C
Benzo(a)pyrene	42	(38 - 144)	SW846 8270C
Benzo(b)fluoranthene	45	(31 - 146)	SW846 8270C
Benzo(ghi)perylene	48	(35 - 129)	SW846 8270C
Benzo(k)fluoranthene	55	(40 - 127)	SW846 8270C
bis(2-Chloroethoxy) methane	50	(30 - 115)	SW846 8270C
bis(2-Chloroethyl)-ether	50	(30 - 115)	SW846 8270C
bis(2-Chloroisopropyl) ether	50	(50 - 150)	SW846 8270C
bis(2-Ethylhexyl) phthalate	51	(30 - 154)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D110000-057

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,4,6-Trichloro-phenol	50	(39 - 115)	SW846 8270C
2,4-Dichlorophenol	51	(34 - 115)	SW846 8270C
2,4-Dimethylphenol	42	(31 - 120)	SW846 8270C
2,6-Dinitrotoluene	52	(43 - 122)	SW846 8270C
2-Chloronaphthalene	49	(35 - 115)	SW846 8270C
2-Methylnaphthalene	56	(32 - 115)	SW846 8270C
2-Methylphenol	50	(30 - 116)	SW846 8270C
2-Nitroaniline	45	(36 - 140)	SW846 8270C
2-Nitrophenol	51	(33 - 115)	SW846 8270C
3,3'-Dichlorobenzidine	30	(30 - 160)	SW846 8270C
3-Nitroaniline	44	(30 - 138)	SW846 8270C
4,6-Dinitro-2-methylphenol	48	(42 - 144)	SW846 8270C
4-Bromophenyl phenyl ether	52	(43 - 118)	SW846 8270C
4-Chloroaniline	41	(30 - 133)	SW846 8270C
4-Chlorophenyl phenyl ether	50	(40 - 115)	SW846 8270C
Butyl benzyl phthalate	52	(37 - 136)	SW846 8270C
Carbazole	49	(49 - 126)	SW846 8270C
Chrysene	51	(42 - 142)	SW846 8270C
Dibenz(a,h)anthracene	47	(38 - 130)	SW846 8270C
Dibenzofuran	49	(40 - 115)	SW846 8270C
Diethyl phthalate	50	(43 - 132)	SW846 8270C
Dimethyl phthalate	51	(42 - 116)	SW846 8270C
Di-n-octyl phthalate	46	(36 - 151)	SW846 8270C
Fluoranthene	50	(47 - 132)	SW846 8270C
Fluorene	49	(41 - 115)	SW846 8270C
Hexachlorobenzene	52	(42 - 123)	SW846 8270C
Hexachlorobutadiene	46	(30 - 120)	SW846 8270C
Hexachloroethane	45	(30 - 120)	SW846 8270C
Isophorone	48	(33 - 115)	SW846 8270C
Naphthalene	46	(30 - 119)	SW846 8270C
Nitrobenzene	49	(31 - 115)	SW846 8270C
N-Nitrosodiphenylamine	44	(35 - 124)	SW846 8270C
Phenanthrene	49	(45 - 117)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D110000-057

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Indeno(1,2,3-cd)pyrene	**48**	**(37 - 130)**	**SW846 8270C**
Di-n-butyl phthalate	**50**	**(46 - 123)**	**SW846 8270C**
Hexachlorocyclopenta-diene	**29 a**	**(30 - 115)**	**SW846 8270C**
Benzoic acid	**23 a**	**(30 - 136)**	**SW846 8270C**
Benzyl alcohol	**54**	**(29 - 115)**	**SW846 8270C**
Atrazine	**56**	**(30 - 120)**	**SW846 8270C**
Acetophenone	**54**	**(30 - 120)**	**SW846 8270C**
1,1'-Biphenyl	**52**	**(30 - 120)**	**SW846 8270C**
Caprolactam	**47**	**(30 - 120)**	**SW846 8270C**
Benzaldehyde	**90**	**(30 - 120)**	**SW846 8270C**
Aniline	**36**	**(30 - 127)**	**SW846 8270C**
N-Nitrosodimethylamine	**47**	**(30 - 115)**	**SW846 8270C**
Pyridine	**10 a**	**(50 - 150)**	**SW846 8270C**
1,2-Diphenylhydrazine	**50**	**(50 - 150)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	49 *	(50 - 150)
2-Fluorobiphenyl	49 *	(50 - 150)
Terphenyl-d14	58	(50 - 150)
Phenol-d5	53	(50 - 150)
2-Fluorophenol	52	(50 - 150)
2,4,6-Tribromophenol	54	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D110000-057
Prep Date.....: 04/11/11 **Analysis Date..:** 04/14/11
Prep Batch #...: 1101057
Dilution Factor: 1 **Final Wgt/Vol..:** 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
1,2,4-Trichloro-benzene	20	9.1	ug/L	46	SW846 8270C
Acenaphthene	20	9.8	ug/L	49	SW846 8270C
2,4-Dinitrotoluene	20	10	ug/L	50	SW846 8270C
Pyrene	20	9.8	ug/L	49	SW846 8270C
N-Nitrosodi-n-propyl-amine	20	9.3	ug/L	47	SW846 8270C
1,4-Dichlorobenzene	20	9.7	ug/L	49	SW846 8270C
Pentachlorophenol	20	9.2	ug/L	46	SW846 8270C
Phenol	20	11	ug/L	53	SW846 8270C
2-Chlorophenol	20	10	ug/L	52	SW846 8270C
4-Chloro-3-methylphenol	20	10	ug/L	51	SW846 8270C
4-Nitrophenol	20	10	ug/L	51	SW846 8270C
1,2-Dichlorobenzene	20	9.9	ug/L	49	SW846 8270C
1,3-Dichlorobenzene	20	9.4	ug/L	47	SW846 8270C
2,4,5-Trichloro-phenol	20	10	ug/L	52	SW846 8270C
4-Methylphenol	40	21	ug/L	51	SW846 8270C
4-Nitroaniline	20	9.3	ug/L	46	SW846 8270C
Acenaphthylene	20	9.7	ug/L	48	SW846 8270C
Anthracene	20	10	ug/L	50	SW846 8270C
Benzo(a)anthracene	20	9.2	ug/L	46	SW846 8270C
Benzo(a)pyrene	20	8.3	ug/L	42	SW846 8270C
Benzo(b)fluoranthene	20	9.1	ug/L	45	SW846 8270C
Benzo(ghi)perylene	20	9.6	ug/L	48	SW846 8270C
Benzo(k)fluoranthene	20	11	ug/L	55	SW846 8270C
bis(2-Chloroethoxy) methane	20	10	ug/L	50	SW846 8270C
bis(2-Chloroethyl)-ether	20	9.9	ug/L	50	SW846 8270C
bis(2-Chloroisopropyl) ether	20	10	ug/L	50	SW846 8270C
bis(2-Ethylhexyl) phthalate	20	10	ug/L	51	SW846 8270C

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D110000-057

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,4,6-Trichloro-phenol	20	10	ug/L	50	SW846 8270C
2,4-Dichlorophenol	20	10	ug/L	51	SW846 8270C
2,4-Dimethylphenol	20	8.3	ug/L	42	SW846 8270C
2,6-Dinitrotoluene	20	10	ug/L	52	SW846 8270C
2-Chloronaphthalene	20	9.7	ug/L	49	SW846 8270C
2-Methylnaphthalene	20	11	ug/L	56	SW846 8270C
2-Methylphenol	20	10	ug/L	50	SW846 8270C
2-Nitroaniline	20	9.0	ug/L	45	SW846 8270C
2-Nitrophenol	20	10	ug/L	51	SW846 8270C
3,3'-Dichlorobenzidine	20	6.0	ug/L	30	SW846 8270C
3-Nitroaniline	20	8.8	ug/L	44	SW846 8270C
4,6-Dinitro-2-methylphenol	20	9.6	ug/L	48	SW846 8270C
4-Bromophenyl phenyl ether	20	10	ug/L	52	SW846 8270C
4-Chloroaniline	20	8.1	ug/L	41	SW846 8270C
4-Chlorophenyl phenyl ether	20	10	ug/L	50	SW846 8270C
Butyl benzyl phthalate	20	10	ug/L	52	SW846 8270C
Carbazole	20	9.8	ug/L	49	SW846 8270C
Chrysene	20	10	ug/L	51	SW846 8270C
Dibenz(a,h)anthracene	20	9.4	ug/L	47	SW846 8270C
Dibenzofuran	20	9.9	ug/L	49	SW846 8270C
Diethyl phthalate	20	10	ug/L	50	SW846 8270C
Dimethyl phthalate	20	10	ug/L	51	SW846 8270C
Di-n-octyl phthalate	20	9.2	ug/L	46	SW846 8270C
Fluoranthene	20	10	ug/L	50	SW846 8270C
Fluorene	20	9.7	ug/L	49	SW846 8270C
Hexachlorobenzene	20	10	ug/L	52	SW846 8270C
Hexachlorobutadiene	20	9.2	ug/L	46	SW846 8270C
Hexachloroethane	20	9.1	ug/L	45	SW846 8270C
Isophorone	20	9.5	ug/L	48	SW846 8270C
Naphthalene	20	9.3	ug/L	46	SW846 8270C
Nitrobenzene	20	9.8	ug/L	49	SW846 8270C
N-Nitrosodiphenylamine	20	8.8	ug/L	44	SW846 8270C
Phenanthrene	20	9.9	ug/L	49	SW846 8270C

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGTVW1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D110000-057

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Indeno(1,2,3-cd)pyrene	**20**	**9.7**	**ug/L**	**48**	**SW846 8270C**
Di-n-butyl phthalate	**20**	**10**	**ug/L**	**50**	**SW846 8270C**
Hexachlorocyclopenta-diene	**20**	**5.9 a**	**ug/L**	**29**	**SW846 8270C**
Benzoic acid	**20**	**a**	**ug/L**	**23**	**SW846 8270C**
Benzyl alcohol	**20**	**11**	**ug/L**	**54**	**SW846 8270C**
Atrazine	**20**	**11**	**ug/L**	**56**	**SW846 8270C**
Acetophenone	**20**	**11**	**ug/L**	**54**	**SW846 8270C**
1,1'-Biphenyl	**20**	**10**	**ug/L**	**52**	**SW846 8270C**
Caprolactam	**20**	**9.5**	**ug/L**	**47**	**SW846 8270C**
Benzaldehyde	**20**	**18**	**ug/L**	**90**	**SW846 8270C**
Aniline	**20**	**7.2**	**ug/L**	**36**	**SW846 8270C**
N-Nitrosodimethylamine	**20**	**9.4**	**ug/L**	**47**	**SW846 8270C**
Pyridine	**20**	**2.1 a**	**ug/L**	**10**	**SW846 8270C**
1,2-Diphenylhydrazine	**20**	**10**	**ug/L**	**50**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	49 *	(50 - 150)
2-Fluorobiphenyl	49 *	(50 - 150)
Terphenyl-d14	58	(50 - 150)
Phenol-d5	53	(50 - 150)
2-Fluorophenol	52	(50 - 150)
2,4,6-Tribromophenol	54	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6N11AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D190000-035
Prep Date.....: 04/19/11 **Analysis Date..:** 04/21/11
Prep Batch #...: 1109035
Dilution Factor: 1 **Final Wgt/Vol..:** 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,4-Dinitrophenol	**42**	**(29 - 146)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	60	(50 - 150)
2-Fluorobiphenyl	64	(50 - 150)
Terphenyl-d14	73	(50 - 150)
Phenol-d5	69	(50 - 150)
2-Fluorophenol	67	(50 - 150)
2,4,6-Tribromophenol	72	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MG6N11AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D190000-035
Prep Date.....: 04/19/11 **Analysis Date..:** 04/21/11
Prep Batch #...: 1109035
Dilution Factor: 1 **Final Wgt/Vol..:** 2 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,4-Dinitrophenol	**20**	**8.5**	**ug/L**	**42**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	60	(50 - 150)
2-Fluorobiphenyl	64	(50 - 150)
Terphenyl-d14	73	(50 - 150)
Phenol-d5	69	(50 - 150)
2-Fluorophenol	67	(50 - 150)
2,4,6-Tribromophenol	72	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

Lot/SDG Number: **A1D080416**

Sample Control Chain of Custody - TAL North Canton
GC/MS Semivolatiles

Lot Number	Work Order	Analysis Type	Prep Date	Prep Analyst	Date of Transfer	Transferred By	Analysis Date	Analyst
A1D080416-007	MGP5R1AC	Base/Neutrals and Acids (8270C)	04/11/11	Eric Mills	04/12/11	Leslie Howell	04/14/11	John Gruber
A1D080416-007	MGP5R2AC	Base/Neutrals and Acids (8270C)	04/19/11	Eric Mills	04/20/11	Steve Earle	04/21/11	John Gruber
A1D080416-009	MGP531AC	Base/Neutrals and Acids (8270C)	04/11/11	Eric Mills	04/12/11	Leslie Howell	04/14/11	John Gruber
A1D080416-009	MGP532AC	Base/Neutrals and Acids (8270C)	04/19/11	Eric Mills	04/20/11	Steve Earle	04/21/11	John Gruber

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PESTICIDE DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

GC Semivolatiles

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R1AW **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/18/11
Prep Batch #...: 1099014
Dilution Factor: 5 **Initial Wgt/Vol:** 1000 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
alpha-BHC	ND	0.15	ug/L
beta-BHC	ND	0.15	ug/L
delta-BHC	ND	0.15	ug/L
gamma-BHC (Lindane)	ND	0.15	ug/L
Heptachlor	ND	0.15	ug/L
Aldrin	ND	0.15	ug/L
Heptachlor epoxide	ND	0.15	ug/L
Endosulfan I	ND	0.12	ug/L
Dieldrin	ND	0.15	ug/L
4,4'-DDE	ND	0.15	ug/L
Endrin	ND	0.15	ug/L
Endosulfan II	ND	0.12	ug/L
4,4'-DDD	ND	0.15	ug/L
Endosulfan sulfate	ND	0.15	ug/L
4,4'-DDT	ND	0.15	ug/L
Methoxychlor	ND	0.50	ug/L
Endrin ketone	ND	0.15	ug/L
Endrin aldehyde	ND	0.15	ug/L
alpha-Chlordane	ND	0.15	ug/L
gamma-Chlordane	ND	0.15	ug/L
Toxaphene	ND	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	84 DIL	(50 - 150)
Decachlorobiphenyl	14 DIL,*	(50 - 150)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

* Surrogate recovery is outside stated control limits.

Elevated reporting limits. The reporting limits are elevated due to matrix interference.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

GC Semivolatiles

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP531AW **Matrix.....:** WG
Date Sampled...: 04/07/11 15:00 **Date Received..:** 04/08/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
alpha-BHC	ND	0.030	ug/L
beta-BHC	ND	0.030	ug/L
delta-BHC	ND	0.030	ug/L
gamma-BHC (Lindane)	ND	0.030	ug/L
Heptachlor	ND	0.030	ug/L
Aldrin	ND	0.030	ug/L
Heptachlor epoxide	ND	0.030	ug/L
Endosulfan I	ND	0.025	ug/L
Dieldrin	ND	0.030	ug/L
4,4'-DDE	ND	0.030	ug/L
Endrin	ND	0.030	ug/L
Endosulfan II	ND	0.025	ug/L
4,4'-DDD	ND	0.030	ug/L
Endosulfan sulfate	ND	0.030	ug/L
4,4'-DDT	ND	0.030	ug/L
Methoxychlor	ND	0.10	ug/L
Endrin ketone	ND	0.030	ug/L
Endrin aldehyde	ND	0.030	ug/L
alpha-Chlordane	ND	0.030	ug/L
gamma-Chlordane	ND	0.030	ug/L
Toxaphene	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	78	(50 - 150)
Decachlorobiphenyl	58	(50 - 150)

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGR9L1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D090000-014

Prep Date.....: 04/09/11 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/17/11 **Prep Batch #...:** 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
alpha-BHC	ND	0.030	ug/L	SW846 8081A
beta-BHC	ND	0.030	ug/L	SW846 8081A
delta-BHC	ND	0.030	ug/L	SW846 8081A
gamma-BHC (Lindane)	ND	0.030	ug/L	SW846 8081A
Heptachlor	ND	0.030	ug/L	SW846 8081A
Aldrin	ND	0.030	ug/L	SW846 8081A
Heptachlor epoxide	ND	0.030	ug/L	SW846 8081A
Endosulfan I	ND	0.025	ug/L	SW846 8081A
Dieldrin	ND	0.030	ug/L	SW846 8081A
4,4'-DDE	ND	0.030	ug/L	SW846 8081A
Endrin	ND	0.030	ug/L	SW846 8081A
Endosulfan II	ND	0.025	ug/L	SW846 8081A
4,4'-DDD	ND	0.030	ug/L	SW846 8081A
Endosulfan sulfate	ND	0.030	ug/L	SW846 8081A
4,4'-DDT	ND	0.030	ug/L	SW846 8081A
Methoxychlor	ND	0.10	ug/L	SW846 8081A
Endrin ketone	ND	0.030	ug/L	SW846 8081A
Endrin aldehyde	ND	0.030	ug/L	SW846 8081A
alpha-Chlordane	ND	0.030	ug/L	SW846 8081A
gamma-Chlordane	ND	0.030	ug/L	SW846 8081A
Toxaphene	ND	2.0	ug/L	SW846 8081A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(50 - 150)
Decachlorobiphenyl	72	(50 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGR9L1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D090000-014
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
alpha-BHC	**96**	**(44 - 137)**	**SW846 8081A**
beta-BHC	**92**	**(50 - 135)**	**SW846 8081A**
delta-BHC	**96**	**(58 - 160)**	**SW846 8081A**
gamma-BHC (Lindane)	**98**	**(58 - 127)**	**SW846 8081A**
Heptachlor	**89**	**(48 - 150)**	**SW846 8081A**
Aldrin	**88**	**(53 - 128)**	**SW846 8081A**
Heptachlor epoxide	**90**	**(50 - 127)**	**SW846 8081A**
Endosulfan I	**54**	**(50 - 160)**	**SW846 8081A**
Dieldrin	**91**	**(50 - 124)**	**SW846 8081A**
4,4'-DDE	**92**	**(50 - 130)**	**SW846 8081A**
Endrin	**91**	**(50 - 137)**	**SW846 8081A**
Endosulfan II	**61**	**(50 - 144)**	**SW846 8081A**
4,4'-DDD	**100**	**(50 - 137)**	**SW846 8081A**
Endosulfan sulfate	**91**	**(50 - 160)**	**SW846 8081A**
4,4'-DDT	**92**	**(50 - 145)**	**SW846 8081A**
Methoxychlor	**94**	**(50 - 160)**	**SW846 8081A**
Endrin ketone	**87**	**(50 - 150)**	**SW846 8081A**
Endrin aldehyde	**72**	**(30 - 160)**	**SW846 8081A**
alpha-Chlordane	**89**	**(50 - 122)**	**SW846 8081A**
gamma-Chlordane	**92**	**(50 - 130)**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	86	(50 - 150)
Decachlorobiphenyl	40 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGR9L1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D090000-014
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
alpha-BHC	**1.0**	**0.96**	**ug/L**	**96**	**SW846 8081A**
beta-BHC	**1.0**	**0.92**	**ug/L**	**92**	**SW846 8081A**
delta-BHC	**1.0**	**0.96**	**ug/L**	**96**	**SW846 8081A**
gamma-BHC (Lindane)	**1.0**	**0.98**	**ug/L**	**98**	**SW846 8081A**
Heptachlor	**1.0**	**0.89**	**ug/L**	**89**	**SW846 8081A**
Aldrin	**1.0**	**0.88**	**ug/L**	**88**	**SW846 8081A**
Heptachlor epoxide	**1.0**	**0.90**	**ug/L**	**90**	**SW846 8081A**
Endosulfan I	**1.0**	**0.54**	**ug/L**	**54**	**SW846 8081A**
Dieldrin	**1.0**	**0.91**	**ug/L**	**91**	**SW846 8081A**
4,4'-DDE	**1.0**	**0.92**	**ug/L**	**92**	**SW846 8081A**
Endrin	**1.0**	**0.91**	**ug/L**	**91**	**SW846 8081A**
Endosulfan II	**1.0**	**0.61**	**ug/L**	**61**	**SW846 8081A**
4,4'-DDD	**1.0**	**1.0**	**ug/L**	**100**	**SW846 8081A**
Endosulfan sulfate	**1.0**	**0.91**	**ug/L**	**91**	**SW846 8081A**
4,4'-DDT	**1.0**	**0.92**	**ug/L**	**92**	**SW846 8081A**
Methoxychlor	**1.0**	**0.94**	**ug/L**	**94**	**SW846 8081A**
Endrin ketone	**1.0**	**0.87**	**ug/L**	**87**	**SW846 8081A**
Endrin aldehyde	**1.0**	**0.72**	**ug/L**	**72**	**SW846 8081A**
alpha-Chlordane	**1.0**	**0.89**	**ug/L**	**89**	**SW846 8081A**
gamma-Chlordane	**1.0**	**0.92**	**ug/L**	**92**	**SW846 8081A**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	86	(50 - 150)
Decachlorobiphenyl	40 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM7Q1AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AU-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
alpha-BHC	101	(50 - 150)			SW846 8081A
	94	(50 - 150)	6.8	(0-50)	SW846 8081A
beta-BHC	99	(50 - 150)			SW846 8081A
	91	(50 - 150)	7.6	(0-50)	SW846 8081A
delta-BHC	102	(50 - 150)			SW846 8081A
	95	(50 - 150)	7.2	(0-50)	SW846 8081A
gamma-BHC (Lindane)	101	(50 - 150)			SW846 8081A
	95	(50 - 150)	7.0	(0-50)	SW846 8081A
Heptachlor	94	(50 - 150)			SW846 8081A
	90	(50 - 150)	4.5	(0-50)	SW846 8081A
Aldrin	92	(50 - 150)			SW846 8081A
	87	(50 - 150)	6.5	(0-50)	SW846 8081A
Heptachlor epoxide	92	(50 - 150)			SW846 8081A
	86	(50 - 150)	6.2	(0-50)	SW846 8081A
Endosulfan I	61	(50 - 150)			SW846 8081A
	57	(50 - 150)	6.3	(0-50)	SW846 8081A
Dieldrin	98	(50 - 150)			SW846 8081A
	91	(50 - 150)	6.8	(0-50)	SW846 8081A
4,4'-DDE	100	(50 - 150)			SW846 8081A
	94	(50 - 150)	6.2	(0-50)	SW846 8081A
Endrin	98	(50 - 150)			SW846 8081A
	92	(50 - 150)	6.4	(0-50)	SW846 8081A
Endosulfan II	67	(50 - 150)			SW846 8081A
	65	(50 - 150)	4.3	(0-50)	SW846 8081A
4,4'-DDD	106	(50 - 150)			SW846 8081A
	101	(50 - 150)	4.4	(0-50)	SW846 8081A
Endosulfan sulfate	98	(50 - 150)			SW846 8081A
	94	(50 - 150)	4.0	(0-50)	SW846 8081A
4,4'-DDT	103	(50 - 150)			SW846 8081A
	99	(50 - 150)	3.4	(0-50)	SW846 8081A
Methoxychlor	104	(50 - 150)			SW846 8081A
	103	(50 - 150)	0.91	(0-50)	SW846 8081A
Endrin ketone	94	(50 - 150)			SW846 8081A
	91	(50 - 150)	3.2	(0-50)	SW846 8081A
Endrin aldehyde	78	(50 - 150)			SW846 8081A
	75	(50 - 150)	4.4	(0-50)	SW846 8081A
alpha-Chlordane	95	(50 - 150)			SW846 8081A
	89	(50 - 150)	6.6	(0-50)	SW846 8081A
gamma-Chlordane	98	(50 - 150)			SW846 8081A
	91	(50 - 150)	7.3	(0-50)	SW846 8081A

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM7Q1AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AU-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	91	(50 - 150)
	85	(50 - 150)
Decachlorobiphenyl	81	(50 - 150)
	86	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM7Q1AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AU-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
alpha-BHC	ND	2.0	2.0	ug/L	101		SW846 8081A
	ND	2.0	1.9	ug/L	94	6.8	SW846 8081A
beta-BHC	ND	2.0	2.0	ug/L	99		SW846 8081A
	ND	2.0	1.8	ug/L	91	7.6	SW846 8081A
delta-BHC	ND	2.0	2.0	ug/L	102		SW846 8081A
	ND	2.0	1.9	ug/L	95	7.2	SW846 8081A
gamma-BHC (Lindane)	ND	2.0	2.0	ug/L	101		SW846 8081A
	ND	2.0	1.9	ug/L	95	7.0	SW846 8081A
Heptachlor	ND	2.0	1.9	ug/L	94		SW846 8081A
	ND	2.0	1.8	ug/L	90	4.5	SW846 8081A
Aldrin	ND	2.0	1.8	ug/L	92		SW846 8081A
	ND	2.0	1.7	ug/L	87	6.5	SW846 8081A
Heptachlor epoxide	ND	2.0	1.8	ug/L	92		SW846 8081A
	ND	2.0	1.7	ug/L	86	6.2	SW846 8081A
Endosulfan I	ND	2.0	1.2	ug/L	61		SW846 8081A
	ND	2.0	1.1	ug/L	57	6.3	SW846 8081A
Dieldrin	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.8	ug/L	91	6.8	SW846 8081A
4,4'-DDE	ND	2.0	2.0	ug/L	100		SW846 8081A
	ND	2.0	1.9	ug/L	94	6.2	SW846 8081A
Endrin	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.8	ug/L	92	6.4	SW846 8081A
Endosulfan II	ND	2.0	1.3	ug/L	67		SW846 8081A
	ND	2.0	1.3	ug/L	65	4.3	SW846 8081A
4,4'-DDD	ND	2.0	2.1	ug/L	106		SW846 8081A
	ND	2.0	2.0	ug/L	101	4.4	SW846 8081A
Endosulfan sulfate	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.9	ug/L	94	4.0	SW846 8081A
4,4'-DDT	ND	2.0	2.1	ug/L	103		SW846 8081A
	ND	2.0	2.0	ug/L	99	3.4	SW846 8081A
Methoxychlor	ND	2.0	2.1	ug/L	104		SW846 8081A
	ND	2.0	2.1	ug/L	103	0.91	SW846 8081A
Endrin ketone	ND	2.0	1.9	ug/L	94		SW846 8081A
	ND	2.0	1.8	ug/L	91	3.2	SW846 8081A
Endrin aldehyde	ND	2.0	1.6	ug/L	78		SW846 8081A
	ND	2.0	1.5	ug/L	75	4.4	SW846 8081A
alpha-Chlordane	ND	2.0	1.9	ug/L	95		SW846 8081A
	ND	2.0	1.8	ug/L	89	6.6	SW846 8081A
gamma-Chlordane	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.8	ug/L	91	7.3	SW846 8081A

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MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM7Q1AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AU-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	91	(50 - 150)
	85	(50 - 150)
Decachlorobiphenyl	81	(50 - 150)
	86	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM891AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AU-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
alpha-BHC	97	(50 - 150)			SW846 8081A
	92	(50 - 150)	5.1	(0-50)	SW846 8081A
beta-BHC	96	(50 - 150)			SW846 8081A
	87	(50 - 150)	9.1	(0-50)	SW846 8081A
delta-BHC	99	(50 - 150)			SW846 8081A
	92	(50 - 150)	7.8	(0-50)	SW846 8081A
gamma-BHC (Lindane)	102	(50 - 150)			SW846 8081A
	96	(50 - 150)	6.7	(0-50)	SW846 8081A
Heptachlor	85	(50 - 150)			SW846 8081A
	81	(50 - 150)	5.2	(0-50)	SW846 8081A
Aldrin	86	(50 - 150)			SW846 8081A
	82	(50 - 150)	4.7	(0-50)	SW846 8081A
Heptachlor epoxide	95	(50 - 150)			SW846 8081A
	89	(50 - 150)	6.5	(0-50)	SW846 8081A
Endosulfan I	61	(50 - 150)			SW846 8081A
	55	(50 - 150)	9.6	(0-50)	SW846 8081A
Dieldrin	98	(50 - 150)			SW846 8081A
	89	(50 - 150)	9.4	(0-50)	SW846 8081A
4,4'-DDE	91	(50 - 150)			SW846 8081A
	84	(50 - 150)	8.1	(0-50)	SW846 8081A
Endrin	100	(50 - 150)			SW846 8081A
	90	(50 - 150)	11	(0-50)	SW846 8081A
Endosulfan II	66	(50 - 150)			SW846 8081A
	61	(50 - 150)	8.2	(0-50)	SW846 8081A
4,4'-DDD	106	(50 - 150)			SW846 8081A
	95	(50 - 150)	11	(0-50)	SW846 8081A
Endosulfan sulfate	100	(50 - 150)			SW846 8081A
	89	(50 - 150)	11	(0-50)	SW846 8081A
4,4'-DDT	98	(50 - 150)			SW846 8081A
	87	(50 - 150)	12	(0-50)	SW846 8081A
Methoxychlor	103	(50 - 150)			SW846 8081A
	92	(50 - 150)	12	(0-50)	SW846 8081A
Endrin ketone	96	(50 - 150)			SW846 8081A
	86	(50 - 150)	10	(0-50)	SW846 8081A
Endrin aldehyde	78	(50 - 150)			SW846 8081A
	71	(50 - 150)	9.6	(0-50)	SW846 8081A
alpha-Chlordane	92	(50 - 150)			SW846 8081A
	84	(50 - 150)	9.0	(0-50)	SW846 8081A
gamma-Chlordane	95	(50 - 150)			SW846 8081A
	88	(50 - 150)	7.8	(0-50)	SW846 8081A

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM891AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AU-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	82	(50 - 150)
	80	(50 - 150)
Decachlorobiphenyl	31 *	(50 - 150)
	28 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM891AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AU-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/17/11
Prep Batch #...: 1099014
Dilution Factor: 1 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
alpha-BHC	ND	2.0	1.9	ug/L	97		SW846 8081A
	ND	2.0	1.8	ug/L	92	5.1	SW846 8081A
beta-BHC	ND	2.0	1.9	ug/L	96		SW846 8081A
	ND	2.0	1.7	ug/L	87	9.1	SW846 8081A
delta-BHC	ND	2.0	2.0	ug/L	99		SW846 8081A
	ND	2.0	1.8	ug/L	92	7.8	SW846 8081A
gamma-BHC (Lindane)	ND	2.0	2.0	ug/L	102		SW846 8081A
	ND	2.0	1.9	ug/L	96	6.7	SW846 8081A
Heptachlor	ND	2.0	1.7	ug/L	85		SW846 8081A
	ND	2.0	1.6	ug/L	81	5.2	SW846 8081A
Aldrin	ND	2.0	1.7	ug/L	86		SW846 8081A
	ND	2.0	1.6	ug/L	82	4.7	SW846 8081A
Heptachlor epoxide	ND	2.0	1.9	ug/L	95		SW846 8081A
	ND	2.0	1.8	ug/L	89	6.5	SW846 8081A
Endosulfan I	ND	2.0	1.2	ug/L	61		SW846 8081A
	ND	2.0	1.1	ug/L	55	9.6	SW846 8081A
Dieldrin	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.8	ug/L	89	9.4	SW846 8081A
4,4'-DDE	ND	2.0	1.8	ug/L	91		SW846 8081A
	ND	2.0	1.7	ug/L	84	8.1	SW846 8081A
Endrin	ND	2.0	2.0	ug/L	100		SW846 8081A
	ND	2.0	1.8	ug/L	90	11	SW846 8081A
Endosulfan II	ND	2.0	1.3	ug/L	66		SW846 8081A
	ND	2.0	1.2	ug/L	61	8.2	SW846 8081A
4,4'-DDD	ND	2.0	2.1	ug/L	106		SW846 8081A
	ND	2.0	1.9	ug/L	95	11	SW846 8081A
Endosulfan sulfate	ND	2.0	2.0	ug/L	100		SW846 8081A
	ND	2.0	1.8	ug/L	89	11	SW846 8081A
4,4'-DDT	ND	2.0	2.0	ug/L	98		SW846 8081A
	ND	2.0	1.7	ug/L	87	12	SW846 8081A
Methoxychlor	ND	2.0	2.1	ug/L	103		SW846 8081A
	ND	2.0	1.8	ug/L	92	12	SW846 8081A
Endrin ketone	ND	2.0	1.9	ug/L	96		SW846 8081A
	ND	2.0	1.7	ug/L	86	10	SW846 8081A
Endrin aldehyde	ND	2.0	1.6	ug/L	78		SW846 8081A
	ND	2.0	1.4	ug/L	71	9.6	SW846 8081A
alpha-Chlordane	ND	2.0	1.8	ug/L	92		SW846 8081A
	ND	2.0	1.7	ug/L	84	9.0	SW846 8081A
gamma-Chlordane	ND	2.0	1.9	ug/L	95		SW846 8081A
	ND	2.0	1.8	ug/L	88	7.8	SW846 8081A

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MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM891AT-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AU-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	82	(50 - 150)
	80	(50 - 150)
Decachlorobiphenyl	31 *	(50 - 150)
	28 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

Lot/SDG Number: **A1D080416**

Sample Control Chain of Custody - TAL North Canton
GC Semivolatiles

Lot Number	Work Order	Analysis Type	Prep Date	Prep Analyst	Date of Transfer	Transferred By	Analysis Date	Analyst
A1D080416-007	MGP5R1AW	Pesticides (8081A)	04/09/11	Alex Robbins	04/11/11	Chris Coast	04/18/11	Carolyn Van Doren
A1D080416-009	MGP531AW	Pesticides (8081A)	04/09/11	Alex Robbins	04/11/11	Chris Coast	04/17/11	Carolynne Roach

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POLYCHLORINATED BIPHENYLS DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

GC Semivolatiles

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R1AG **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	0.50	ug/L
Aroclor 1221	ND	0.50	ug/L
Aroclor 1232	ND	0.50	ug/L
Aroclor 1242	ND	0.50	ug/L
Aroclor 1248	ND	0.50	ug/L
Aroclor 1254	ND	0.50	ug/L
Aroclor 1260	ND	0.50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	75	(50 - 150)
Decachlorobiphenyl	12 *	(50 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

GC Semivolatiles

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP531AG **Matrix.....:** WG
Date Sampled...: 04/07/11 15:00 **Date Received..:** 04/08/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL **Final Wgt/Vol..:** 5 mL
Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	0.50	ug/L
Aroclor 1221	ND	0.50	ug/L
Aroclor 1232	ND	0.50	ug/L
Aroclor 1242	ND	0.50	ug/L
Aroclor 1248	ND	0.50	ug/L
Aroclor 1254	ND	0.50	ug/L
Aroclor 1260	ND	0.50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	77	(50 - 150)
Decachlorobiphenyl	53	(50 - 150)

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGR9M1AA **Matrix.....:** WATER
MB Lot-Sample #: A1D090000-015

Prep Date.....: 04/09/11 **Final Wgt/Vol..:** 5 mL
Analysis Date..: 04/16/11 **Prep Batch #...:** 1099015
Dilution Factor: 1 **Initial Wgt/Vol:** 1000 mL

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	0.50	ug/L	SW846 8082
Aroclor 1221	ND	0.50	ug/L	SW846 8082
Aroclor 1232	ND	0.50	ug/L	SW846 8082
Aroclor 1242	ND	0.50	ug/L	SW846 8082
Aroclor 1248	ND	0.50	ug/L	SW846 8082
Aroclor 1254	ND	0.50	ug/L	SW846 8082
Aroclor 1260	ND	0.50	ug/L	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	81	(50 - 150)
Decachlorobiphenyl	70	(50 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGR9M1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D090000-015
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Aroclor 1016	**84**	**(58 - 141)**	**SW846 8082**
Aroclor 1260	**83**	**(71 - 143)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	77	(50 - 150)
Decachlorobiphenyl	39 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGR9M1AC **Matrix.....:** WATER
LCS Lot-Sample#: A1D090000-015
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Final Wgt/Vol..:** 5 mL
Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Aroclor 1016	**10**	**8.4**	**ug/L**	**84**	**SW846 8082**
Aroclor 1260	**10**	**8.3**	**ug/L**	**83**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	77	(50 - 150)
Decachlorobiphenyl	39 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM7Q1AV-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AW-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**90**	**(50 - 150)**			**SW846 8082**
	89	**(50 - 150)**	**0.78**	**(0-50)**	**SW846 8082**
Aroclor 1260	**89**	**(50 - 150)**			**SW846 8082**
	91	**(50 - 150)**	**2.2**	**(0-50)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	85	(50 - 150)
	87	(50 - 150)
Decachlorobiphenyl	72	(50 - 150)
	74	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM7Q1AV-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-016 MGM7Q1AW-MSD
Date Sampled...: 04/06/11 09:22 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/15/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	**ND**	**20**	**18**	**ug/L**	**90**		**SW846 8082**
	ND	**20**	**18**	**ug/L**	**89**	**0.78**	**SW846 8082**
Aroclor 1260	**ND**	**20**	**18**	**ug/L**	**89**		**SW846 8082**
	ND	**20**	**18**	**ug/L**	**91**	**2.2**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	85	(50 - 150)
	87	(50 - 150)
Decachlorobiphenyl	72	(50 - 150)
	74	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM891AV-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AW-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**91**	**(50 - 150)**			**SW846 8082**
	91	**(50 - 150)**	**0.0**	**(0-50)**	**SW846 8082**
Aroclor 1260	**81**	**(50 - 150)**			**SW846 8082**
	81	**(50 - 150)**	**0.0**	**(0-50)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	88	(50 - 150)
	88	(50 - 150)
Decachlorobiphenyl	45 *	(50 - 150)
	45 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: A1D080416 **Work Order #...:** MGM891AV-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D070402-030 MGM891AW-MSD
Date Sampled...: 04/06/11 13:09 **Date Received..:** 04/07/11
Prep Date.....: 04/09/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1099015
Dilution Factor: 2 **Initial Wgt/Vol:** 500 mL **Final Wgt/Vol..:** 5 mL

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	**ND**	**20**	**18**	**ug/L**	**91**		**SW846 8082**
	ND	**20**	**18**	**ug/L**	**91**	**0.0**	**SW846 8082**
Aroclor 1260	**ND**	**20**	**16**	**ug/L**	**81**		**SW846 8082**
	ND	**20**	**16**	**ug/L**	**81**	**0.0**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	88	(50 - 150)
	88	(50 - 150)
Decachlorobiphenyl	45 *	(50 - 150)
	45 *	(50 - 150)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

Lot/SDG Number: **A1D080416**

Sample Control Chain of Custody - TAL North Canton
GC Semivolatiles

Lot Number	Work Order	Analysis Type	Prep Date	Prep Analyst	Date of Transfer	Transferred By	Analysis Date	Analyst
A1D080416-007	MGP5R1AG	PCBs (8082)	04/09/11	Alex Robbins	04/11/11	Chris Coast	04/16/11	Lori Hass
A1D080416-009	MGP531AG	PCBs (8082)	04/09/11	Alex Robbins	04/11/11	Chris Coast	04/16/11	Lori Hass

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METALS DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GF

TOTAL Metals

Lot-Sample #...: A1D080416-008 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1104025						
Silver	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MGP5W1AX
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Aluminum	**404**	**50.0**	**ug/L**	**SW846 6020**	**04/14-04/18/11**	**MGP5W1AA**
		Dilution Factor: 1		Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8				
Arsenic	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MGP5W1AK
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Barium	**15.7**	**10.0**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MGP5W1AN**
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Beryllium	ND	1.0	ug/L	SW846 6020	04/14-04/18/11	MGP5W1AD
		Dilution Factor: 1		Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8				
Calcium	**42300**	**1000**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MGP5W1AP**
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Cadmium	**1.6**	**0.50**	**ug/L**	**SW846 6020**	**04/14-04/18/11**	**MGP5W1AE**
		Dilution Factor: 1		Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8				
Cobalt	**19.6**	**5.0**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MGP5W1AQ**
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Chromium	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MGP5W1A1
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Copper	**9.3**	**5.0**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MGP5W1AR**
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GF

TOTAL Metals

Lot-Sample #...: A1D080416-008 **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	ND	50.0	ug/L	SW846 6020	04/14-04/18/11	MGP5W1AF
		Dilution Factor: 1		Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8				
Mercury	ND	0.20	ug/L	SW846 7470A	04/14-04/15/11	MGP5W1A2
		Dilution Factor: 1		Analysis Time..: 10:34	Analyst ID.....: 002260	
		Instrument ID..: H1				
Potassium	**2500**	**1000**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MGP5W1AW**
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Magnesium	**3200**	**1000**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MGP5W1AT**
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Manganese	**243 J**	**10.0**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MGP5W1AU**
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Sodium	**3140**	**1000**	**ug/L**	**SW846 6020**	**04/14-04/18/11**	**MGP5W1AG**
		Dilution Factor: 1		Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8				
Nickel	**37.0**	**10.0**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MGP5W1AV**
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Lead	ND	3.0	ug/L	SW846 6010B	04/14-04/15/11	MGP5W1AL
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Antimony	ND	2.0	ug/L	SW846 6020	04/14-04/18/11	MGP5W1AC
		Dilution Factor: 1		Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8				
Selenium	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MGP5W1AM
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GF

TOTAL Metals

Lot-Sample #...: A1D080416-008 **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Thallium	**0.55 B**	**1.0**	**ug/L**	**SW846 6020**	**04/14-04/18/11**	**MGP5W1AH**
		Dilution Factor: 1		Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8				
Vanadium	ND	10.0	ug/L	SW846 6010B	04/14-04/15/11	MGP5W1A0
		Dilution Factor: 1		Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5				
Zinc	**72.4 J**	**10.0**	**ug/L**	**SW846 6020**	**04/14-04/18/11**	**MGP5W1AJ**
		Dilution Factor: 1		Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8				

NOTE(S):

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GF

TOTAL Metals

Lot-Sample #...: A1D080416-010 **Matrix.....:** WG
Date Sampled...: 04/07/11 15:00 **Date Received..:** 04/08/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1101020						
Silver	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGP6A1A2
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Aluminum	**34.4 B**	**50.0**	**ug/L**	**SW846 6020**	**04/11-04/13/11**	**MGP6A1AE**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 000079	
		Instrument ID..: I8				
Arsenic	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGP6A1AN
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Barium	**10.3**	**10.0**	**ug/L**	**SW846 6010B**	**04/11-04/14/11**	**MGP6A1AR**
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Beryllium	ND	1.0	ug/L	SW846 6020	04/11-04/13/11	MGP6A1AG
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 000079	
		Instrument ID..: I8				
Calcium	**27500**	**1000**	**ug/L**	**SW846 6010B**	**04/11-04/14/11**	**MGP6A1AT**
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Cadmium	ND	0.50	ug/L	SW846 6020	04/11-04/13/11	MGP6A1AH
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 000079	
		Instrument ID..: I8				
Cobalt	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGP6A1AU
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Chromium	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGP6A1AC
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Copper	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGP6A1AV
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GF

TOTAL Metals

Lot-Sample #...: A1D080416-010 **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	**4690**	**50.0**	**ug/L**	**SW846 6020**	**04/11-04/13/11**	**MGP6A1AJ**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 000079	
		Instrument ID..: I8				
Mercury	ND	0.20	ug/L	SW846 7470A	04/11-04/12/11	MGP6A1AD
		Dilution Factor: 1		Analysis Time..: 13:43	Analyst ID.....: 002260	
		Instrument ID..: H1				
Potassium	**717 B**	**1000**	**ug/L**	**SW846 6010B**	**04/11-04/14/11**	**MGP6A1A1**
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Magnesium	**14900**	**1000**	**ug/L**	**SW846 6010B**	**04/11-04/14/11**	**MGP6A1AW**
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Manganese	**1050**	**10.0**	**ug/L**	**SW846 6010B**	**04/11-04/14/11**	**MGP6A1AX**
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Sodium	**5070**	**1000**	**ug/L**	**SW846 6020**	**04/11-04/13/11**	**MGP6A1AK**
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 000079	
		Instrument ID..: I8				
Nickel	**32.2**	**10.0**	**ug/L**	**SW846 6010B**	**04/11-04/14/11**	**MGP6A1A0**
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Lead	ND	3.0	ug/L	SW846 6010B	04/11-04/14/11	MGP6A1AP
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				
Antimony	ND	2.0	ug/L	SW846 6020	04/11-04/13/11	MGP6A1AF
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 000079	
		Instrument ID..: I8				
Selenium	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGP6A1AQ
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				

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U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GF

TOTAL Metals

Lot-Sample #...: A1D080416-010 **Matrix.....:** WG

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Thallium	ND	1.0	ug/L	SW846 6020	04/11-04/13/11	MGP6A1AL
		Dilution Factor: 1		Analysis Time..: 13:26	Analyst ID.....: 000079	
		Instrument ID..: I8				
Vanadium	ND	10.0	ug/L	SW846 6010B	04/11-04/14/11	MGP6A1AA
		Dilution Factor: 1		Analysis Time..: 21:17	Analyst ID.....: 002260	
		Instrument ID..: I5				

Prep Batch #...: 1105011

Zinc	**64.4**	**10.0**	**ug/L**	**SW846 6020**	**04/15-04/18/11**	**MGP6A2AM**
		Dilution Factor: 1		Analysis Time..: 14:50	Analyst ID.....: 000079	
		Instrument ID..: I8				

NOTE(S):

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A1D110000-020 **Prep Batch #...:** 1101020						
Aluminum	ND	50.0	ug/L	SW846 6020	04/11-04/13/11	MGTR71AA
		Dilution Factor: 1				
		Analysis Time..: 11:41	Analyst ID.....: 000079		Instrument ID..: I8	
Antimony	ND	2.0	ug/L	SW846 6020	04/11-04/13/11	MGTR71AF
		Dilution Factor: 1				
		Analysis Time..: 11:41	Analyst ID.....: 000079		Instrument ID..: I8	
Arsenic	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AK
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Barium	ND	10.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AP
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Beryllium	ND	1.0	ug/L	SW846 6020	04/11-04/13/11	MGTR71AC
		Dilution Factor: 1				
		Analysis Time..: 11:41	Analyst ID.....: 000079		Instrument ID..: I8	
Cadmium	ND	0.50	ug/L	SW846 6020	04/11-04/13/11	MGTR71AD
		Dilution Factor: 1				
		Analysis Time..: 11:41	Analyst ID.....: 000079		Instrument ID..: I8	
Calcium	ND	1000	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AQ
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Chromium	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AT
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Cobalt	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AR
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Copper	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AU
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Iron	ND	50.0	ug/L	SW846 6020	04/11-04/13/11	MGTR71AE
		Dilution Factor: 1				
		Analysis Time..: 11:41	Analyst ID.....: 000079		Instrument ID..: I8	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	ND	3.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AL
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Magnesium	ND	1000	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AW
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Manganese	ND	10.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AX
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Mercury	ND	0.20	ug/L	SW846 7470A	04/11-04/12/11	MGTR71A2
		Dilution Factor: 1				
		Analysis Time..: 13:30	Analyst ID.....: 002260		Instrument ID..: H1	
Nickel	ND	10.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71A0
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Potassium	ND	1000	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AV
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Selenium	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AM
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Silver	ND	5.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71AN
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	
Sodium	ND	1000	ug/L	SW846 6020	04/11-04/13/11	MGTR71AJ
		Dilution Factor: 1				
		Analysis Time..: 11:41	Analyst ID.....: 000079		Instrument ID..: I8	
Thallium	ND	1.0	ug/L	SW846 6020	04/11-04/13/11	MGTR71AH
		Dilution Factor: 1				
		Analysis Time..: 11:41	Analyst ID.....: 000079		Instrument ID..: I8	
Vanadium	ND	10.0	ug/L	SW846 6010B	04/11-04/14/11	MGTR71A1
		Dilution Factor: 1				
		Analysis Time..: 19:00	Analyst ID.....: 002260		Instrument ID..: I5	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A1D140000-025 **Prep Batch #...:** 1104025						
Aluminum	ND	50.0	ug/L	SW846 6020	04/14-04/18/11	MG0051AA
		Dilution Factor: 1				
		Analysis Time..: 14:01	Analyst ID.....: 000079		Instrument ID..: I8	
Antimony	ND	2.0	ug/L	SW846 6020	04/14-04/18/11	MG0051AC
		Dilution Factor: 1				
		Analysis Time..: 14:01	Analyst ID.....: 000079		Instrument ID..: I8	
Arsenic	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051AK
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Barium	ND	10.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051AN
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Beryllium	ND	1.0	ug/L	SW846 6020	04/14-04/18/11	MG0051AD
		Dilution Factor: 1				
		Analysis Time..: 14:01	Analyst ID.....: 000079		Instrument ID..: I8	
Cadmium	ND	0.50	ug/L	SW846 6020	04/14-04/18/11	MG0051AE
		Dilution Factor: 1				
		Analysis Time..: 14:01	Analyst ID.....: 000079		Instrument ID..: I8	
Calcium	ND	1000	ug/L	SW846 6010B	04/14-04/15/11	MG0051AP
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Chromium	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051A1
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Cobalt	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051AQ
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Copper	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051AR
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Iron	ND	50.0	ug/L	SW846 6020	04/14-04/18/11	MG0051AF
		Dilution Factor: 1				
		Analysis Time..: 14:01	Analyst ID.....: 000079		Instrument ID..: I8	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	ND	3.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051AL
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Magnesium	ND	1000	ug/L	SW846 6010B	04/14-04/15/11	MG0051AT
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Manganese	**2.2 B**	**10.0**	**ug/L**	**SW846 6010B**	**04/14-04/15/11**	**MG0051AU**
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Mercury	ND	0.20	ug/L	SW846 7470A	04/14-04/15/11	MG0051A2
		Dilution Factor: 1				
		Analysis Time..: 10:44	Analyst ID.....: 002260		Instrument ID..: H1	
Nickel	ND	10.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051AV
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Potassium	ND	1000	ug/L	SW846 6010B	04/14-04/15/11	MG0051AW
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Selenium	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051AM
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Silver	ND	5.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051AX
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Sodium	ND	1000	ug/L	SW846 6020	04/14-04/18/11	MG0051AG
		Dilution Factor: 1				
		Analysis Time..: 14:01	Analyst ID.....: 000079		Instrument ID..: I8	
Thallium	ND	1.0	ug/L	SW846 6020	04/14-04/18/11	MG0051AH
		Dilution Factor: 1				
		Analysis Time..: 14:01	Analyst ID.....: 000079		Instrument ID..: I8	
Vanadium	ND	10.0	ug/L	SW846 6010B	04/14-04/15/11	MG0051A0
		Dilution Factor: 1				
		Analysis Time..: 06:43	Analyst ID.....: 002260		Instrument ID..: I5	
Zinc	**2.5 B**	**10.0**	**ug/L**	**SW846 6020**	**04/14-04/18/11**	**MG0051AJ**
		Dilution Factor: 1				
		Analysis Time..: 14:01	Analyst ID.....: 000079		Instrument ID..: I8	

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A1D150000-011 **Prep Batch #...:** 1105011						
Zinc	ND	10.0	ug/L	SW846 6020	04/15-04/18/11	MG2XW1AA

Dilution Factor: 1
Analysis Time..: 14:34 Analyst ID.....: 000079 Instrument ID..: I8

NOTE(S):

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

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D110000-020 **Prep Batch #...:** 1101020					
Aluminum	101	(80 - 120)	SW846 6020	04/11-04/13/11	MGTR71A3
		Dilution Factor: 1	Analysis Time..: 11:45	Analyst ID.....: 000079	
		Instrument ID..: I8			
Beryllium	106	(80 - 120)	SW846 6020	04/11-04/13/11	MGTR71A4
		Dilution Factor: 1	Analysis Time..: 11:45	Analyst ID.....: 000079	
		Instrument ID..: I8			
Cadmium	106	(80 - 120)	SW846 6020	04/11-04/13/11	MGTR71A5
		Dilution Factor: 1	Analysis Time..: 11:45	Analyst ID.....: 000079	
		Instrument ID..: I8			
Iron	102	(80 - 120)	SW846 6020	04/11-04/13/11	MGTR71A6
		Dilution Factor: 1	Analysis Time..: 11:45	Analyst ID.....: 000079	
		Instrument ID..: I8			
Antimony	102	(80 - 120)	SW846 6020	04/11-04/13/11	MGTR71A7
		Dilution Factor: 1	Analysis Time..: 11:45	Analyst ID.....: 000079	
		Instrument ID..: I8			
Thallium	102	(80 - 120)	SW846 6020	04/11-04/13/11	MGTR71A9
		Dilution Factor: 1	Analysis Time..: 11:45	Analyst ID.....: 000079	
		Instrument ID..: I8			
Sodium	110	(80 - 120)	SW846 6020	04/11-04/13/11	MGTR71CA
		Dilution Factor: 1	Analysis Time..: 11:45	Analyst ID.....: 000079	
		Instrument ID..: I8			
Arsenic	92	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CC
		Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260	
		Instrument ID..: I5			
Lead	101	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CD
		Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260	
		Instrument ID..: I5			
Selenium	103	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CE
		Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260	
		Instrument ID..: I5			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	95	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CF
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Barium	103	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CG
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Calcium	95	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CH
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Cobalt	97	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CJ
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Chromium	96	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CK
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Copper	100	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CL
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Potassium	100	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CM
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Magnesium	96	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CN
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Manganese	105	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CP
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Nickel	99	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CQ
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				
Vanadium	99	(80 - 120)	SW846 6010B	04/11-04/14/11	MGTR71CR
	Dilution Factor: 1	Analysis Time..: 19:18	Analyst ID.....: 002260		
	Instrument ID..: I5				

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Mercury	96	(80 - 120)	SW846 7470A	04/11-04/12/11	MGTR71CT
	Dilution Factor: 1	Analysis Time..: 13:31	Analyst ID.....: 002260		
	Instrument ID..: H1				
LCS Lot-Sample#: A1D140000-025 **Prep Batch #...:** 1104025					
Aluminum	100	(80 - 120)	SW846 6020	04/14-04/18/11	MG0051A3
	Dilution Factor: 1	Analysis Time..: 14:06	Analyst ID.....: 000079		
	Instrument ID..: I8				
Antimony	104	(80 - 120)	SW846 6020	04/14-04/18/11	MG0051A4
	Dilution Factor: 1	Analysis Time..: 14:06	Analyst ID.....: 000079		
	Instrument ID..: I8				
Beryllium	104	(80 - 120)	SW846 6020	04/14-04/18/11	MG0051A5
	Dilution Factor: 1	Analysis Time..: 14:06	Analyst ID.....: 000079		
	Instrument ID..: I8				
Cadmium	105	(80 - 120)	SW846 6020	04/14-04/18/11	MG0051A6
	Dilution Factor: 1	Analysis Time..: 14:06	Analyst ID.....: 000079		
	Instrument ID..: I8				
Iron	100	(80 - 120)	SW846 6020	04/14-04/18/11	MG0051A7
	Dilution Factor: 1	Analysis Time..: 14:06	Analyst ID.....: 000079		
	Instrument ID..: I8				
Sodium	102	(80 - 120)	SW846 6020	04/14-04/18/11	MG0051A8
	Dilution Factor: 1	Analysis Time..: 14:06	Analyst ID.....: 000079		
	Instrument ID..: I8				
Thallium	99	(80 - 120)	SW846 6020	04/14-04/18/11	MG0051A9
	Dilution Factor: 1	Analysis Time..: 14:06	Analyst ID.....: 000079		
	Instrument ID..: I8				
Zinc	110	(80 - 120)	SW846 6020	04/14-04/18/11	MG0051CA
	Dilution Factor: 1	Analysis Time..: 14:06	Analyst ID.....: 000079		
	Instrument ID..: I8				
Arsenic	92	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CC
	Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260		
	Instrument ID..: I5				
Lead	100	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CD
	Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260		
	Instrument ID..: I5				

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	103	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CE
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Barium	102	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CF
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Calcium	92	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CG
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Cobalt	96	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CH
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Copper	99	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CJ
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Magnesium	92	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CK
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Manganese	102	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CL
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Nickel	99	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CM
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Potassium	94	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CN
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Silver	94	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CP
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			
Vanadium	98	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CQ
		Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260	
		Instrument ID..: I5			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	95	(80 - 120)	SW846 6010B	04/14-04/15/11	MG0051CR
	Dilution Factor: 1	Analysis Time..: 06:49	Analyst ID.....: 002260		
	Instrument ID..: I5				
Mercury	105	(80 - 120)	SW846 7470A	04/14-04/15/11	MG0051CT
	Dilution Factor: 1	Analysis Time..: 10:47	Analyst ID.....: 002260		
	Instrument ID..: H1				

LCS Lot-Sample#: A1D150000-011 **Prep Batch #...:** 1105011

Zinc	108	(80 - 120)	SW846 6020	04/15-04/18/11	MG2XW1AC
	Dilution Factor: 1	Analysis Time..: 14:39	Analyst ID.....: 000079		
	Instrument ID..: I8				

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A1D110000-020 **Prep Batch #...:** 1101020							
Aluminum	10000	10100	ug/L	101	SW846 6020	04/11-04/13/11	MGTR71A3
			Dilution Factor: 1		Analysis Time..: 11:45	Analyst ID.....: 000079	
			Instrument ID..: I8				
Beryllium	100	106	ug/L	106	SW846 6020	04/11-04/13/11	MGTR71A4
			Dilution Factor: 1		Analysis Time..: 11:45	Analyst ID.....: 000079	
			Instrument ID..: I8				
Cadmium	100	106	ug/L	106	SW846 6020	04/11-04/13/11	MGTR71A5
			Dilution Factor: 1		Analysis Time..: 11:45	Analyst ID.....: 000079	
			Instrument ID..: I8				
Iron	10000	10200	ug/L	102	SW846 6020	04/11-04/13/11	MGTR71A6
			Dilution Factor: 1		Analysis Time..: 11:45	Analyst ID.....: 000079	
			Instrument ID..: I8				
Antimony	100	102	ug/L	102	SW846 6020	04/11-04/13/11	MGTR71A7
			Dilution Factor: 1		Analysis Time..: 11:45	Analyst ID.....: 000079	
			Instrument ID..: I8				
Thallium	100	102	ug/L	102	SW846 6020	04/11-04/13/11	MGTR71A9
			Dilution Factor: 1		Analysis Time..: 11:45	Analyst ID.....: 000079	
			Instrument ID..: I8				
Sodium	10000	11000	ug/L	110	SW846 6020	04/11-04/13/11	MGTR71CA
			Dilution Factor: 1		Analysis Time..: 11:45	Analyst ID.....: 000079	
			Instrument ID..: I8				
Arsenic	2000	1840	ug/L	92	SW846 6010B	04/11-04/14/11	MGTR71CC
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Lead	500	503	ug/L	101	SW846 6010B	04/11-04/14/11	MGTR71CD
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Selenium	2000	2060	ug/L	103	SW846 6010B	04/11-04/14/11	MGTR71CE
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	50.0	47.5	ug/L	95	SW846 6010B	04/11-04/14/11	MGTR71CF
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Barium	2000	2060	ug/L	103	SW846 6010B	04/11-04/14/11	MGTR71CG
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Calcium	50000	47700	ug/L	95	SW846 6010B	04/11-04/14/11	MGTR71CH
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Cobalt	500	483	ug/L	97	SW846 6010B	04/11-04/14/11	MGTR71CJ
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Chromium	200	192	ug/L	96	SW846 6010B	04/11-04/14/11	MGTR71CK
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Copper	250	251	ug/L	100	SW846 6010B	04/11-04/14/11	MGTR71CL
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Potassium	50000	49800	ug/L	100	SW846 6010B	04/11-04/14/11	MGTR71CM
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Magnesium	50000	48100	ug/L	96	SW846 6010B	04/11-04/14/11	MGTR71CN
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Manganese	500	523	ug/L	105	SW846 6010B	04/11-04/14/11	MGTR71CP
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Nickel	500	496	ug/L	99	SW846 6010B	04/11-04/14/11	MGTR71CQ
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				
Vanadium	500	494	ug/L	99	SW846 6010B	04/11-04/14/11	MGTR71CR
			Dilution Factor: 1		Analysis Time..: 19:18	Analyst ID.....: 002260	
			Instrument ID..: I5				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Mercury	5.0	4.8	ug/L	96	SW846 7470A	04/11-04/12/11	MGTR71CT
			Dilution Factor: 1		Analysis Time..: 13:31	Analyst ID.....: 002260	
			Instrument ID..: H1				

LCS Lot-Sample#: A1D140000-025 **Prep Batch #...:** 1104025

Aluminum	10000	9970	ug/L	100	SW846 6020	04/14-04/18/11	MG0051A3
			Dilution Factor: 1		Analysis Time..: 14:06	Analyst ID.....: 000079	
			Instrument ID..: I8				
Antimony	100	104	ug/L	104	SW846 6020	04/14-04/18/11	MG0051A4
			Dilution Factor: 1		Analysis Time..: 14:06	Analyst ID.....: 000079	
			Instrument ID..: I8				
Beryllium	100	104	ug/L	104	SW846 6020	04/14-04/18/11	MG0051A5
			Dilution Factor: 1		Analysis Time..: 14:06	Analyst ID.....: 000079	
			Instrument ID..: I8				
Cadmium	100	105	ug/L	105	SW846 6020	04/14-04/18/11	MG0051A6
			Dilution Factor: 1		Analysis Time..: 14:06	Analyst ID.....: 000079	
			Instrument ID..: I8				
Iron	10000	9990	ug/L	100	SW846 6020	04/14-04/18/11	MG0051A7
			Dilution Factor: 1		Analysis Time..: 14:06	Analyst ID.....: 000079	
			Instrument ID..: I8				
Sodium	10000	10200	ug/L	102	SW846 6020	04/14-04/18/11	MG0051A8
			Dilution Factor: 1		Analysis Time..: 14:06	Analyst ID.....: 000079	
			Instrument ID..: I8				
Thallium	100	98.8	ug/L	99	SW846 6020	04/14-04/18/11	MG0051A9
			Dilution Factor: 1		Analysis Time..: 14:06	Analyst ID.....: 000079	
			Instrument ID..: I8				
Zinc	1000	1100	ug/L	110	SW846 6020	04/14-04/18/11	MG0051CA
			Dilution Factor: 1		Analysis Time..: 14:06	Analyst ID.....: 000079	
			Instrument ID..: I8				
Arsenic	2000	1830	ug/L	92	SW846 6010B	04/14-04/15/11	MG0051CC
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Lead	500	499	ug/L	100	SW846 6010B	04/14-04/15/11	MG0051CD
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	2000	2070	ug/L	103	SW846 6010B	04/14-04/15/11	MG0051CE
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Barium	2000	2030	ug/L	102	SW846 6010B	04/14-04/15/11	MG0051CF
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Calcium	50000	46000	ug/L	92	SW846 6010B	04/14-04/15/11	MG0051CG
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Cobalt	500	480	ug/L	96	SW846 6010B	04/14-04/15/11	MG0051CH
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Copper	250	249	ug/L	99	SW846 6010B	04/14-04/15/11	MG0051CJ
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Magnesium	50000	46200	ug/L	92	SW846 6010B	04/14-04/15/11	MG0051CK
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Manganese	500	509	ug/L	102	SW846 6010B	04/14-04/15/11	MG0051CL
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Nickel	500	494	ug/L	99	SW846 6010B	04/14-04/15/11	MG0051CM
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Potassium	50000	47000	ug/L	94	SW846 6010B	04/14-04/15/11	MG0051CN
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Silver	50.0	46.9	ug/L	94	SW846 6010B	04/14-04/15/11	MG0051CP
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Vanadium	500	488	ug/L	98	SW846 6010B	04/14-04/15/11	MG0051CQ
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	200	189	ug/L	95	SW846 6010B	04/14-04/15/11	MG0051CR
			Dilution Factor: 1		Analysis Time..: 06:49	Analyst ID.....: 002260	
			Instrument ID..: I5				
Mercury	5.0	5.2	ug/L	105	SW846 7470A	04/14-04/15/11	MG0051CT
			Dilution Factor: 1		Analysis Time..: 10:47	Analyst ID.....: 002260	
			Instrument ID..: H1				

LCS Lot-Sample#: A1D150000-011 **Prep Batch #...:** 1105011

Zinc	1000	1080	ug/L	108	SW846 6020	04/15-04/18/11	MG2XW1AC
			Dilution Factor: 1		Analysis Time..: 14:39	Analyst ID.....: 000079	
			Instrument ID..: I8				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D080405-003 **Prep Batch #...:** 1101020					
Aluminum	100	(75 - 125)	SW846 6020	04/11-04/13/11	MGP1F1AC
		Dilution Factor: 1	Analysis Time..: 11:52	Instrument ID..: I8	
		Analyst ID.....: 000079			
Antimony	99	(75 - 125)	SW846 6020	04/11-04/13/11	MGP1F1AQ
		Dilution Factor: 1	Analysis Time..: 11:52	Instrument ID..: I8	
		Analyst ID.....: 000079			
Arsenic	95	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1A5
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Barium	100	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1CJ
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Beryllium	103	(75 - 125)	SW846 6020	04/11-04/13/11	MGP1F1AF
		Dilution Factor: 1	Analysis Time..: 11:52	Instrument ID..: I8	
		Analyst ID.....: 000079			
Cadmium	104	(75 - 125)	SW846 6020	04/11-04/13/11	MGP1F1AJ
		Dilution Factor: 1	Analysis Time..: 11:52	Instrument ID..: I8	
		Analyst ID.....: 000079			
Calcium	96	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1CM
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Chromium	98	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1CU
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Cobalt	100	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1CQ
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Copper	98	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1CX
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	98	(75 - 125)	SW846 6020	04/11-04/13/11	MGP1F1AM
		Dilution Factor: 1	Analysis Time..: 11:52	Instrument ID..: I8	
		Analyst ID.....: 000079			
Lead	105	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1A8
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Magnesium	97	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1C5
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Manganese	106	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1C8
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Mercury	102	(80 - 120)	SW846 7470A	04/11-04/12/11	MGP1F1DJ
		Dilution Factor: 1	Analysis Time..: 13:33	Instrument ID..: H1	
		Analyst ID.....: 002260			
Nickel	102	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1DC
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Potassium	92	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1C2
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Selenium	106	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1CC
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Silver	94	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1CF
		Dilution Factor: 1	Analysis Time..: 19:24	Instrument ID..: I5	
		Analyst ID.....: 002260			
Sodium	107	(75 - 125)	SW846 6020	04/11-04/13/11	MGP1F1A2
		Dilution Factor: 1	Analysis Time..: 11:52	Instrument ID..: I8	
		Analyst ID.....: 000079			
Thallium	101	(75 - 125)	SW846 6020	04/11-04/13/11	MGP1F1AX
		Dilution Factor: 1	Analysis Time..: 11:52	Instrument ID..: I8	
		Analyst ID.....: 000079			

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	100	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP1F1DF
		Dilution Factor: 1	Analysis Time..: 19:24		Instrument ID..: I5
		Analyst ID.....: 002260			
Zinc	98	(75 - 125)	SW846 6020	04/11-04/13/11	MGP1F1AU
		Dilution Factor: 1	Analysis Time..: 11:52		Instrument ID..: I8
		Analyst ID.....: 000079			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D080405-003 **Prep Batch #...:** 1101020								
Aluminum	ND	10000	9970	ug/L	100	SW846 6020	04/11-04/13/11	MGP1F1AC
			Dilution Factor: 1		Analysis Time..: 11:52		Instrument ID..: I8	
			Analyst ID.....: 000079					
Antimony	ND	100	99.2	ug/L	99	SW846 6020	04/11-04/13/11	MGP1F1AQ
			Dilution Factor: 1		Analysis Time..: 11:52		Instrument ID..: I8	
			Analyst ID.....: 000079					
Arsenic	ND	2000	1900	ug/L	95	SW846 6010B	04/11-04/14/11	MGP1F1A5
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Barium	12.0	2000	2020	ug/L	100	SW846 6010B	04/11-04/14/11	MGP1F1CJ
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Beryllium	ND	100	103	ug/L	103	SW846 6020	04/11-04/13/11	MGP1F1AF
			Dilution Factor: 1		Analysis Time..: 11:52		Instrument ID..: I8	
			Analyst ID.....: 000079					
Cadmium	ND	100	104	ug/L	104	SW846 6020	04/11-04/13/11	MGP1F1AJ
			Dilution Factor: 1		Analysis Time..: 11:52		Instrument ID..: I8	
			Analyst ID.....: 000079					
Calcium	29000	50000	76900	ug/L	96	SW846 6010B	04/11-04/14/11	MGP1F1CM
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Chromium	ND	200	195	ug/L	98	SW846 6010B	04/11-04/14/11	MGP1F1CU
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Cobalt	ND	500	498	ug/L	100	SW846 6010B	04/11-04/14/11	MGP1F1CQ
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Copper	ND	250	245	ug/L	98	SW846 6010B	04/11-04/14/11	MGP1F1CX
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	ND	10000	9830	ug/L	98	SW846 6020	04/11-04/13/11	MGP1F1AM
			Dilution Factor: 1		Analysis Time..: 11:52		Instrument ID..: I8	
			Analyst ID.....: 000079					
Lead	ND	500	524	ug/L	105	SW846 6010B	04/11-04/14/11	MGP1F1A8
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Magnesium	3960	50000	52400	ug/L	97	SW846 6010B	04/11-04/14/11	MGP1F1C5
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Manganese	2.7	500	533	ug/L	106	SW846 6010B	04/11-04/14/11	MGP1F1C8
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Mercury	ND	1.0	1.0	ug/L	102	SW846 7470A	04/11-04/12/11	MGP1F1DJ
			Dilution Factor: 1		Analysis Time..: 13:33		Instrument ID..: H1	
			Analyst ID.....: 002260					
Nickel	ND	500	512	ug/L	102	SW846 6010B	04/11-04/14/11	MGP1F1DC
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Potassium	591	50000	46400	ug/L	92	SW846 6010B	04/11-04/14/11	MGP1F1C2
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Selenium	ND	2000	2110	ug/L	106	SW846 6010B	04/11-04/14/11	MGP1F1CC
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Silver	ND	50.0	46.9	ug/L	94	SW846 6010B	04/11-04/14/11	MGP1F1CF
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Sodium	1710	10000	12400	ug/L	107	SW846 6020	04/11-04/13/11	MGP1F1A2
			Dilution Factor: 1		Analysis Time..: 11:52		Instrument ID..: I8	
			Analyst ID.....: 000079					
Thallium	0.18	100	101	ug/L	101	SW846 6020	04/11-04/13/11	MGP1F1AX
			Dilution Factor: 1		Analysis Time..: 11:52		Instrument ID..: I8	
			Analyst ID.....: 000079					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	ND	500	498	ug/L	100	SW846 6010B	04/11-04/14/11	MGP1F1DF
			Dilution Factor: 1		Analysis Time..: 19:24		Instrument ID..: I5	
			Analyst ID.....: 002260					
Zinc	7.3	100	106	ug/L	98	SW846 6020	04/11-04/13/11	MGP1F1AU
			Dilution Factor: 1		Analysis Time..: 11:52		Instrument ID..: I8	
			Analyst ID.....: 000079					

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D080405-019 **Prep Batch #...:** 1101020					
Aluminum	100	(75 - 125)	SW846 6020	04/11-04/13/11	MGP151AM
		Dilution Factor: 1	Analysis Time..: 12:55	Instrument ID..: I8	
		Analyst ID.....: 000079			
Antimony	100	(75 - 125)	SW846 6020	04/11-04/13/11	MGP151A2
		Dilution Factor: 1	Analysis Time..: 12:55	Instrument ID..: I8	
		Analyst ID.....: 000079			
Arsenic	92	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151AF
		Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5	
		Analyst ID.....: 002260			
Barium	102	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151CU
		Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5	
		Analyst ID.....: 002260			
Beryllium	103	(75 - 125)	SW846 6020	04/11-04/13/11	MGP151AQ
		Dilution Factor: 1	Analysis Time..: 12:55	Instrument ID..: I8	
		Analyst ID.....: 000079			
Cadmium	104	(75 - 125)	SW846 6020	04/11-04/13/11	MGP151AU
		Dilution Factor: 1	Analysis Time..: 12:55	Instrument ID..: I8	
		Analyst ID.....: 000079			
Calcium	88	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151CX
		Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5	
		Analyst ID.....: 002260			
Chromium	95	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151C5
		Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5	
		Analyst ID.....: 002260			
Cobalt	96	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151C2
		Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5	
		Analyst ID.....: 002260			
Copper	99	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151C8
		Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5	
		Analyst ID.....: 002260			

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	101	(75 - 125)	SW846 6020	04/11-04/13/11	MGP151AX
	Dilution Factor: 1	Analysis Time..: 12:55	Instrument ID..: I8		
	Analyst ID.....: 000079				
Lead	100	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151AJ
	Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5		
	Analyst ID.....: 002260				
Magnesium	92	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151CF
	Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5		
	Analyst ID.....: 002260				
Manganese	74 N	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151CJ
	Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5		
	Analyst ID.....: 002260				
Mercury	102	(80 - 120)	SW846 7470A	04/11-04/12/11	MGP151DJ
	Dilution Factor: 1	Analysis Time..: 13:39	Instrument ID..: H1		
	Analyst ID.....: 002260				
Nickel	99	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151DC
	Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5		
	Analyst ID.....: 002260				
Potassium	102	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151CC
	Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5		
	Analyst ID.....: 002260				
Selenium	102	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151CM
	Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5		
	Analyst ID.....: 002260				
Silver	93	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151CQ
	Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5		
	Analyst ID.....: 002260				
Sodium	105	(75 - 125)	SW846 6020	04/11-04/13/11	MGP151AC
	Dilution Factor: 1	Analysis Time..: 12:55	Instrument ID..: I8		
	Analyst ID.....: 000079				
Thallium	101	(75 - 125)	SW846 6020	04/11-04/13/11	MGP151A8
	Dilution Factor: 1	Analysis Time..: 12:55	Instrument ID..: I8		
	Analyst ID.....: 000079				

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	98	(75 - 125)	SW846 6010B	04/11-04/14/11	MGP151DF
		Dilution Factor: 1	Analysis Time..: 20:35	Instrument ID..: I5	
		Analyst ID.....: 002260			
Zinc	102	(75 - 125)	SW846 6020	04/11-04/13/11	MGP151A5
		Dilution Factor: 1	Analysis Time..: 12:55	Instrument ID..: I8	
		Analyst ID.....: 000079			

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D080405-019 **Prep Batch #...:** 1101020								
Aluminum	ND	10000	9990	ug/L	100	SW846 6020	04/11-04/13/11	MGP151AM
			Dilution Factor: 1		Analysis Time..: 12:55		Instrument ID..: I8	
			Analyst ID.....: 000079					
Antimony	ND	100	100	ug/L	100	SW846 6020	04/11-04/13/11	MGP151A2
			Dilution Factor: 1		Analysis Time..: 12:55		Instrument ID..: I8	
			Analyst ID.....: 000079					
Arsenic	ND	2000	1840	ug/L	92	SW846 6010B	04/11-04/14/11	MGP151AF
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Barium	218	2000	2260	ug/L	102	SW846 6010B	04/11-04/14/11	MGP151CU
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Beryllium	ND	100	103	ug/L	103	SW846 6020	04/11-04/13/11	MGP151AQ
			Dilution Factor: 1		Analysis Time..: 12:55		Instrument ID..: I8	
			Analyst ID.....: 000079					
Cadmium	ND	100	104	ug/L	104	SW846 6020	04/11-04/13/11	MGP151AU
			Dilution Factor: 1		Analysis Time..: 12:55		Instrument ID..: I8	
			Analyst ID.....: 000079					
Calcium	30900	50000	74900	ug/L	88	SW846 6010B	04/11-04/14/11	MGP151CX
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Chromium	ND	200	189	ug/L	95	SW846 6010B	04/11-04/14/11	MGP151C5
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Cobalt	ND	500	479	ug/L	96	SW846 6010B	04/11-04/14/11	MGP151C2
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Copper	ND	250	249	ug/L	99	SW846 6010B	04/11-04/14/11	MGP151C8
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	6800	10000	16900	ug/L	101	SW846 6020	04/11-04/13/11	MGP151AX
			Dilution Factor: 1		Analysis Time..: 12:55		Instrument ID..: I8	
			Analyst ID.....: 000079					
Lead	ND	500	499	ug/L	100	SW846 6010B	04/11-04/14/11	MGP151AJ
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Magnesium	15400	50000	61700	ug/L	92	SW846 6010B	04/11-04/14/11	MGP151CF
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Manganese	1590	500	1960 N	ug/L	74	SW846 6010B	04/11-04/14/11	MGP151CJ
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Mercury	ND	1.0	1.0	ug/L	102	SW846 7470A	04/11-04/12/11	MGP151DJ
			Dilution Factor: 1		Analysis Time..: 13:39		Instrument ID..: H1	
			Analyst ID.....: 002260					
Nickel	ND	500	496	ug/L	99	SW846 6010B	04/11-04/14/11	MGP151DC
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Potassium	3080	50000	53900	ug/L	102	SW846 6010B	04/11-04/14/11	MGP151CC
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Selenium	ND	2000	2050	ug/L	102	SW846 6010B	04/11-04/14/11	MGP151CM
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Silver	ND	50.0	46.6	ug/L	93	SW846 6010B	04/11-04/14/11	MGP151CQ
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Sodium	6250	10000	16700	ug/L	105	SW846 6020	04/11-04/13/11	MGP151AC
			Dilution Factor: 1		Analysis Time..: 12:55		Instrument ID..: I8	
			Analyst ID.....: 000079					
Thallium	ND	100	101	ug/L	101	SW846 6020	04/11-04/13/11	MGP151A8
			Dilution Factor: 1		Analysis Time..: 12:55		Instrument ID..: I8	
			Analyst ID.....: 000079					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	ND	500	490	ug/L	98	SW846 6010B	04/11-04/14/11	MGP151DF
			Dilution Factor: 1		Analysis Time..: 20:35		Instrument ID..: I5	
			Analyst ID.....: 002260					
Zinc	4.7	100	106	ug/L	102	SW846 6020	04/11-04/13/11	MGP151A5
			Dilution Factor: 1		Analysis Time..: 12:55		Instrument ID..: I8	
			Analyst ID.....: 000079					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D080416-008 **Prep Batch #...:** 1104025					
Aluminum	99	(75 - 125)	SW846 6020	04/14-04/18/11	MGP5W1A3
		Dilution Factor: 1	Analysis Time..: 14:13	Instrument ID..: I8	
		Analyst ID.....: 000079			
Antimony	104	(75 - 125)	SW846 6020	04/14-04/18/11	MGP5W1A4
		Dilution Factor: 1	Analysis Time..: 14:13	Instrument ID..: I8	
		Analyst ID.....: 000079			
Arsenic	96	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CC
		Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5	
		Analyst ID.....: 002260			
Barium	101	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CF
		Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5	
		Analyst ID.....: 002260			
Beryllium	101	(75 - 125)	SW846 6020	04/14-04/18/11	MGP5W1A5
		Dilution Factor: 1	Analysis Time..: 14:13	Instrument ID..: I8	
		Analyst ID.....: 000079			
Cadmium	104	(75 - 125)	SW846 6020	04/14-04/18/11	MGP5W1A6
		Dilution Factor: 1	Analysis Time..: 14:13	Instrument ID..: I8	
		Analyst ID.....: 000079			
Calcium	94	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CG
		Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5	
		Analyst ID.....: 002260			
Chromium	98	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CR
		Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5	
		Analyst ID.....: 002260			
Cobalt	99	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CH
		Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5	
		Analyst ID.....: 002260			
Copper	99	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CJ
		Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5	
		Analyst ID.....: 002260			

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	100	(75 - 125)	SW846 6020	04/14-04/18/11	MGP5W1A7
	Dilution Factor: 1	Analysis Time..: 14:13	Instrument ID..: I8		
	Analyst ID.....: 000079				
Lead	104	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CD
	Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5		
	Analyst ID.....: 002260				
Magnesium	98	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CK
	Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5		
	Analyst ID.....: 002260				
Manganese	106	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CL
	Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5		
	Analyst ID.....: 002260				
Mercury	108	(80 - 120)	SW846 7470A	04/14-04/15/11	MGP5W1CT
	Dilution Factor: 1	Analysis Time..: 10:34	Instrument ID..: H1		
	Analyst ID.....: 002260				
Nickel	101	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CM
	Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5		
	Analyst ID.....: 002260				
Potassium	92	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CN
	Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5		
	Analyst ID.....: 002260				
Selenium	105	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CE
	Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5		
	Analyst ID.....: 002260				
Silver	92	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CP
	Dilution Factor: 1	Analysis Time..: 06:55	Instrument ID..: I5		
	Analyst ID.....: 002260				
Sodium	98	(75 - 125)	SW846 6020	04/14-04/18/11	MGP5W1A8
	Dilution Factor: 1	Analysis Time..: 14:13	Instrument ID..: I8		
	Analyst ID.....: 000079				
Thallium	97	(75 - 125)	SW846 6020	04/14-04/18/11	MGP5W1A9
	Dilution Factor: 1	Analysis Time..: 14:13	Instrument ID..: I8		
	Analyst ID.....: 000079				

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	100	(75 - 125)	SW846 6010B	04/14-04/15/11	MGP5W1CQ
		Dilution Factor: 1	Analysis Time..: 06:55		Instrument ID..: I5
		Analyst ID.....: 002260			
Zinc	107	(75 - 125)	SW846 6020	04/14-04/18/11	MGP5W1CA
		Dilution Factor: 1	Analysis Time..: 14:13		Instrument ID..: I8
		Analyst ID.....: 000079			

NOTE(S):

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

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A1D080416-008 **Prep Batch #...:** 1104025								
Aluminum	404	10000	10400	ug/L	99	SW846 6020	04/14-04/18/11	MGP5W1A3
			Dilution Factor: 1		Analysis Time..: 14:13		Instrument ID..: I8	
			Analyst ID.....: 000079					
Antimony	ND	100	104	ug/L	104	SW846 6020	04/14-04/18/11	MGP5W1A4
			Dilution Factor: 1		Analysis Time..: 14:13		Instrument ID..: I8	
			Analyst ID.....: 000079					
Arsenic	ND	2000	1920	ug/L	96	SW846 6010B	04/14-04/15/11	MGP5W1CC
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Barium	15.7	2000	2040	ug/L	101	SW846 6010B	04/14-04/15/11	MGP5W1CF
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Beryllium	ND	100	101	ug/L	101	SW846 6020	04/14-04/18/11	MGP5W1A5
			Dilution Factor: 1		Analysis Time..: 14:13		Instrument ID..: I8	
			Analyst ID.....: 000079					
Cadmium	1.6	100	106	ug/L	104	SW846 6020	04/14-04/18/11	MGP5W1A6
			Dilution Factor: 1		Analysis Time..: 14:13		Instrument ID..: I8	
			Analyst ID.....: 000079					
Calcium	42300	50000	89300	ug/L	94	SW846 6010B	04/14-04/15/11	MGP5W1CG
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Chromium	ND	200	196	ug/L	98	SW846 6010B	04/14-04/15/11	MGP5W1CR
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Cobalt	19.6	500	516	ug/L	99	SW846 6010B	04/14-04/15/11	MGP5W1CH
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Copper	9.3	250	258	ug/L	99	SW846 6010B	04/14-04/15/11	MGP5W1CJ
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	ND	10000	9960	ug/L	100	SW846 6020	04/14-04/18/11	MGP5W1A7
			Dilution Factor: 1		Analysis Time..: 14:13		Instrument ID..: I8	
			Analyst ID.....: 000079					
Lead	ND	500	521	ug/L	104	SW846 6010B	04/14-04/15/11	MGP5W1CD
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Magnesium	3200	50000	52000	ug/L	98	SW846 6010B	04/14-04/15/11	MGP5W1CK
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Manganese	243	500	775	ug/L	106	SW846 6010B	04/14-04/15/11	MGP5W1CL
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Mercury	ND	1.0	1.1	ug/L	108	SW846 7470A	04/14-04/15/11	MGP5W1CT
			Dilution Factor: 1		Analysis Time..: 10:34		Instrument ID..: H1	
			Analyst ID.....: 002260					
Nickel	37.0	500	542	ug/L	101	SW846 6010B	04/14-04/15/11	MGP5W1CM
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Potassium	2500	50000	48500	ug/L	92	SW846 6010B	04/14-04/15/11	MGP5W1CN
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Selenium	ND	2000	2110	ug/L	105	SW846 6010B	04/14-04/15/11	MGP5W1CE
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Silver	ND	50.0	46.1	ug/L	92	SW846 6010B	04/14-04/15/11	MGP5W1CP
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Sodium	3140	10000	12900	ug/L	98	SW846 6020	04/14-04/18/11	MGP5W1A8
			Dilution Factor: 1		Analysis Time..: 14:13		Instrument ID..: I8	
			Analyst ID.....: 000079					
Thallium	0.55	100	97.6	ug/L	97	SW846 6020	04/14-04/18/11	MGP5W1A9
			Dilution Factor: 1		Analysis Time..: 14:13		Instrument ID..: I8	
			Analyst ID.....: 000079					

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	ND	500	498	ug/L	100	SW846 6010B	04/14-04/15/11	MGP5W1CQ
			Dilution Factor: 1		Analysis Time..: 06:55		Instrument ID..: I5	
			Analyst ID.....: 002260					
Zinc	72.4	1000	1140	ug/L	107	SW846 6020	04/14-04/18/11	MGP5W1CA
			Dilution Factor: 1		Analysis Time..: 14:13		Instrument ID..: I8	
			Analyst ID.....: 000079					

NOTE(S):

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

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: A1D080416 **Work Order #...:** MGP1F-SMP MGP1F-DUP **Matrix.....:** WATER

Date Sampled...: 04/07/11 09:01 **Date Received..:** 04/08/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Copper						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Nickel						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Vanadium						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Mercury						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 7470A	04/11-04/12/11	1101020
		Dilution Factor: 1				Analysis Time..: 13:33	Analyst ID.....: 002260	
		Instrument ID..: H1						
Sodium						SD Lot-Sample #: A1D080405-003		
	1710	1630	ug/L	5.1	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 11:52	Analyst ID.....: 000079	
		Instrument ID..: I8						
Arsenic						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Lead						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Aluminum						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 11:52	Analyst ID.....: 000079	
		Instrument ID..: I8						
Beryllium						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 11:52	Analyst ID.....: 000079	
		Instrument ID..: I8						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D080416-000 **Work Order #...:** MGP1F-SMP MGP1F-DUP **Matrix.....:** WATER

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cadmium						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 11:52	Analyst ID.....: 000079	
		Instrument ID..: I8						
Iron						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 11:52	Analyst ID.....: 000079	
		Instrument ID..: I8						
Antimony						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 11:52	Analyst ID.....: 000079	
		Instrument ID..: I8						
Thallium						SD Lot-Sample #: A1D080405-003		
	0.18 B	ND	ug/L	200	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 11:52	Analyst ID.....: 000079	
		Instrument ID..: I8						
Potassium						SD Lot-Sample #: A1D080405-003		
	591 B	619 B	ug/L	4.6	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Magnesium						SD Lot-Sample #: A1D080405-003		
	3960	4280	ug/L	7.6	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Manganese						SD Lot-Sample #: A1D080405-003		
	2.7 B	ND	ug/L	200	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Selenium						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Silver						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D080416-000 **Work Order #...:** MGP1F-SMP MGP1F-DUP **Matrix.....:** WATER

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Barium						SD Lot-Sample #: A1D080405-003		
	12.0	11.5	ug/L	3.9	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Calcium						SD Lot-Sample #: A1D080405-003		
	29000	30800	ug/L	5.9	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Cobalt						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Chromium						SD Lot-Sample #: A1D080405-003		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 19:24	Analyst ID.....: 002260	
		Instrument ID..: I5						
Zinc						SD Lot-Sample #: A1D080405-003		
	7.3 B	ND	ug/L	200	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 11:52	Analyst ID.....: 000079	
		Instrument ID..: I8						

NOTE(S):

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

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: A1D080416 **Work Order #...:** MGP15-SMP MGP15-DUP **Matrix.....:** WATER

Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Antimony						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 12:55	Analyst ID.....: 000079	
		Instrument ID..: I8						
Thallium						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 12:55	Analyst ID.....: 000079	
		Instrument ID..: I8						
Sodium						SD Lot-Sample #: A1D080405-019		
	6250	6490	ug/L	3.7	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 12:55	Analyst ID.....: 000079	
		Instrument ID..: I8						
Arsenic						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Lead						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Aluminum						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 12:55	Analyst ID.....: 000079	
		Instrument ID..: I8						
Beryllium						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 12:55	Analyst ID.....: 000079	
		Instrument ID..: I8						
Cadmium						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 12:55	Analyst ID.....: 000079	
		Instrument ID..: I8						
Iron						SD Lot-Sample #: A1D080405-019		
	6800	7010	ug/L	3.1	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 12:55	Analyst ID.....: 000079	
		Instrument ID..: I8						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D080416-000 **Work Order #...:** MGP15-SMP MGP15-DUP **Matrix.....:** WATER

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cobalt						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Chromium						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Copper						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Potassium						SD Lot-Sample #: A1D080405-019		
	3080	3240	ug/L	5.1	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Magnesium						SD Lot-Sample #: A1D080405-019		
	15400	14900	ug/L	3.9	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Manganese						SD Lot-Sample #: A1D080405-019		
	1590	1580	ug/L	0.88	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Selenium						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Silver						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Barium						SD Lot-Sample #: A1D080405-019		
	218	226	ug/L	3.6	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D080416-000 **Work Order #...:** MGP15-SMP MGP15-DUP **Matrix.....:** WATER

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Calcium						SD Lot-Sample #: A1D080405-019		
	30900	30300	ug/L	2.2	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Nickel						SD Lot-Sample #: A1D080405-019		
	ND	2.9 B	ug/L	200	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Vanadium						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/11-04/14/11	1101020
		Dilution Factor: 1				Analysis Time..: 20:35	Analyst ID.....: 002260	
		Instrument ID..: I5						
Mercury						SD Lot-Sample #: A1D080405-019		
	ND	ND	ug/L	0	(0-20)	SW846 7470A	04/11-04/12/11	1101020
		Dilution Factor: 1				Analysis Time..: 13:39	Analyst ID.....: 002260	
		Instrument ID..: H1						
Zinc						SD Lot-Sample #: A1D080405-019		
	4.7 B	3.8 B	ug/L	21	(0-20)	SW846 6020	04/11-04/13/11	1101020
		Dilution Factor: 1				Analysis Time..: 12:55	Analyst ID.....: 000079	
		Instrument ID..: I8						

NOTE(S):

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

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Client Lot #...: A1D080416 **Work Order #...:** MGP5W-SMP MGP5W-DUP **Matrix.....:** WG

Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Silver						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Aluminum						SD Lot-Sample #: A1D080416-008		
	404	394	ug/L	2.5	(0-20)	SW846 6020	04/14-04/18/11	1104025
		Dilution Factor: 1				Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8						
Arsenic						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Barium						SD Lot-Sample #: A1D080416-008		
	15.7	15.5	ug/L	1.1	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Beryllium						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/14-04/18/11	1104025
		Dilution Factor: 1				Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8						
Calcium						SD Lot-Sample #: A1D080416-008		
	42300	41000	ug/L	3.0	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Cadmium						SD Lot-Sample #: A1D080416-008		
	1.6	1.6	ug/L	0.95	(0-20)	SW846 6020	04/14-04/18/11	1104025
		Dilution Factor: 1				Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8						
Cobalt						SD Lot-Sample #: A1D080416-008		
	19.6	18.6	ug/L	5.5	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Chromium						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						

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SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D080416-000 **Work Order #...:** MGP5W-SMP MGP5W-DUP **Matrix.....:** WG

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Copper						SD Lot-Sample #: A1D080416-008		
	9.3	10.7	ug/L	13	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Iron						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/14-04/18/11	1104025
		Dilution Factor: 1				Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8						
Mercury						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 7470A	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 10:34	Analyst ID.....: 002260	
		Instrument ID..: H1						
Potassium						SD Lot-Sample #: A1D080416-008		
	2500	2420	ug/L	3.4	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Magnesium						SD Lot-Sample #: A1D080416-008		
	3200	3110	ug/L	2.9	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Manganese						SD Lot-Sample #: A1D080416-008		
	243 J	236	ug/L	3.0	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Sodium						SD Lot-Sample #: A1D080416-008		
	3140	3070	ug/L	2.2	(0-20)	SW846 6020	04/14-04/18/11	1104025
		Dilution Factor: 1				Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8						
Nickel						SD Lot-Sample #: A1D080416-008		
	37.0	35.3	ug/L	4.6	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Lead						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						

(Continued on next page)

SAMPLE DUPLICATE EVALUATION REPORT

Metals

Lot-Sample #...: A1D080416-000 **Work Order #...:** MGP5W-SMP MGP5W-DUP **Matrix.....:** WG

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Antimony						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6020	04/14-04/18/11	1104025
		Dilution Factor: 1				Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8						
Selenium						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Thallium						SD Lot-Sample #: A1D080416-008		
	0.55 B	0.36 B	ug/L	40	(0-20)	SW846 6020	04/14-04/18/11	1104025
		Dilution Factor: 1				Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8						
Vanadium						SD Lot-Sample #: A1D080416-008		
	ND	ND	ug/L	0	(0-20)	SW846 6010B	04/14-04/15/11	1104025
		Dilution Factor: 1				Analysis Time..: 06:55	Analyst ID.....: 002260	
		Instrument ID..: I5						
Zinc						SD Lot-Sample #: A1D080416-008		
	72.4 J	73.2	ug/L	1.2	(0-20)	SW846 6020	04/14-04/18/11	1104025
		Dilution Factor: 1				Analysis Time..: 14:13	Analyst ID.....: 000079	
		Instrument ID..: I8						

NOTE(S):

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

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

Metals Internal Chain of Custody

Date Prepared: 04/11/11 **Prep Analyst:** Lisa Mcgall

Laboratory Sample ID			Lab ID	Method	Analysis Date	Analyst	Instrument
A1D080416	10		MGP6A	SW846 6010B	04/14/11	Brian Davies	I5
A1D080416	10		MGP6A	SW846 6020	04/13/11	Natalie Bucklew	I8
A1D080416	10		MGP6A	SW846 7470A	04/12/11	Brian Davies	H1

Date Prepared: 04/14/11 **Prep Analyst:** Lisa Mcgall

Laboratory Sample ID			Lab ID	Method	Analysis Date	Analyst	Instrument
A1D080416	8		MGP5W	SW846 6010B	04/15/11	Brian Davies	I5
A1D080416	8	S	MGP5W	SW846 6010B	04/15/11	Brian Davies	I5
A1D080416	8	X	MGP5W	SW846 6010B	04/15/11	Brian Davies	I5
A1D080416	8		MGP5W	SW846 6020	04/18/11	Natalie Bucklew	I8
A1D080416	8	S	MGP5W	SW846 6020	04/18/11	Natalie Bucklew	I8
A1D080416	8	X	MGP5W	SW846 6020	04/18/11	Natalie Bucklew	I8
A1D080416	8		MGP5W	SW846 7470A	04/15/11	Brian Davies	H1
A1D080416	8	S	MGP5W	SW846 7470A	04/15/11	Brian Davies	H1
A1D080416	8	X	MGP5W	SW846 7470A	04/15/11	Brian Davies	H1

Date Prepared: 04/15/11 **Prep Analyst:** Lisa Mcgall

Laboratory Sample ID			Lab ID	Method	Analysis Date	Analyst	Instrument
A1D080416	10		MGP6A	SW846 6020	04/18/11	Natalie Bucklew	I8

U - Unfiltered F - Filtered T - TCLP L - SPLP East W - SPLP West

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GENERAL CHEMISTRY DATA

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL2mw-266C-0040-GW

General Chemistry

Lot-Sample #...: A1D080416-001 **Work Order #...:** MGP5D **Matrix.....:** WG
Date Sampled...: 04/07/11 11:04 **Date Received..:** 04/08/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1				
Chloride	**1.6**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101301**
		Dilution Factor: 1				
Fluoride	**0.083 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101297**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101304
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/15/11	1105283
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1				
Sulfate	**27.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101310**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL2mw-267C-0050-GW

General Chemistry

Lot-Sample #...: A1D080416-003 **Work Order #...:** MGP5J **Matrix.....:** WG
Date Sampled...: 04/07/11 08:52 **Date Received..:** 04/08/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1				
Chloride	**3.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101301**
		Dilution Factor: 1				
Fluoride	**0.29 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101297**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101304
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/15/11	1105283
		Dilution Factor: 1				
Phosphate as P, Ortho	**0.37 B**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101306**
		Dilution Factor: 1				
Sulfate	**82.0**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101310**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL2mw-269C-0060-GW

General Chemistry

Lot-Sample #...: A1D080416-005 **Work Order #...:** MGP5N **Matrix.....:** WG
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1				
Chloride	**10.0**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101301**
		Dilution Factor: 1				
Fluoride	**0.16 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101297**
		Dilution Factor: 1				
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101304
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1				
Nitrogen, as Ammonia	ND	2.0	mg/L	MCAWW 350.2	04/15/11	1105283
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1				
Sulfate	**27.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101310**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

General Chemistry

Lot-Sample #...: A1D080416-007 **Work Order #...:** MGP5R **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1				
Chloride	**1.1**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101301**
		Dilution Factor: 1				
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/21/11	1112227
		Dilution Factor: 1				
Fluoride	**0.070 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101297**
		Dilution Factor: 1				
Nitrate as N	**0.74**	**0.10**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101304**
		Dilution Factor: 1				
Nitrate-Nitrite	**0.8**	**0.1**	**mg/L**	**MCAWW 353.2**	**04/12/11**	**1102391**
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1				
Nitrocellulose	ND	2.0	mg/L	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1				
Nitrogen, as Ammonia	**0.84 B**	**2.0**	**mg/L**	**MCAWW 350.2**	**04/15/11**	**1105283**
		Dilution Factor: 1				
Phosphate as P, Ortho	**0.18 B**	**0.50**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101306**
		Dilution Factor: 1				
Sulfate	**104**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101310**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

General Chemistry

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP53 **Matrix.....:** WG
Date Sampled...: 04/07/11 15:00 **Date Received..:** 04/08/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1				
Chloride	**1.2**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101301**
		Dilution Factor: 1				
Cyanide, Total	ND	0.010	mg/L	SW846 9012A	04/21/11	1112227
		Dilution Factor: 1				
Fluoride	**0.16 B**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101297**
		Dilution Factor: 1				
Nitrate as N	**0.033 B**	**0.10**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101304**
		Dilution Factor: 1				
Nitrate-Nitrite	**0.03 B**	**0.1**	**mg/L**	**MCAWW 353.2**	**04/12/11**	**1102391**
		Dilution Factor: 1				
Nitrite as N	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1				
Nitrocellulose	ND	2.0	mg/L	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1				
Nitrogen, as Ammonia	**0.84 B**	**2.0**	**mg/L**	**MCAWW 350.2**	**04/15/11**	**1105283**
		Dilution Factor: 1				
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1				
Sulfate	**84.5**	**1.0**	**mg/L**	**MCAWW 300.0A**	**04/08/11**	**1101310**
		Dilution Factor: 1				

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #: MGVN91AA		MB Lot-Sample #:	A1D110000-303	
	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1				
Chloride		Work Order #: MGVN71AA		MB Lot-Sample #:	A1D110000-301	
	ND	1.0	mg/L	MCAWW 300.0A	04/08/11	1101301
		Dilution Factor: 1				
Cyanide, Total		Work Order #: MHE9T1AA		MB Lot-Sample #:	A1D220000-227	
	ND	0.010	mg/L	SW846 9012A	04/21/11	1112227
		Dilution Factor: 1				
Fluoride		Work Order #: MGVN51AA		MB Lot-Sample #:	A1D110000-297	
	ND	1.0	mg/L	MCAWW 300.0A	04/08/11	1101297
		Dilution Factor: 1				
Nitrate as N		Work Order #: MGVPA1AA		MB Lot-Sample #:	A1D110000-304	
	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101304
		Dilution Factor: 1				
Nitrate-Nitrite		Work Order #: MGXCN1AA		MB Lot-Sample #:	G1D120000-391	
	ND	0.1	mg/L	MCAWW 353.2	04/12/11	1102391
		Dilution Factor: 1				
Nitrite as N		Work Order #: MGVN81AA		MB Lot-Sample #:	A1D110000-302	
	ND	0.10	mg/L	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1				
Nitrocellulose		Work Order #: MGWA31AA		MB Lot-Sample #:	G1D120000-167	
	ND	2.0	mg/L	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1				
Nitrogen, as Ammonia		Work Order #: MG3831AA		MB Lot-Sample #:	A1D150000-283	
	ND	2.0	mg/L	MCAWW 350.2	04/15/11	1105283
		Dilution Factor: 1				
Phosphate as P, Ortho		Work Order #: MGVPD1AA		MB Lot-Sample #:	A1D110000-306	
	ND	0.50	mg/L	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1				
Sulfate		Work Order #: MGVPF1AA		MB Lot-Sample #:	A1D110000-310	
	ND	1.0	mg/L	MCAWW 300.0A	04/08/11	1101310
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A1D080416 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#:MGVN91AC-LCS/MGVN91AD-LCSD LCS Lot-Sample#: A1D110000-303					
	94	(90 - 110)			MCAWW 300.0A	04/08/11	1101303
	94	(90 - 110)	0.36	(0-20)	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1					
Chloride		WO#:MGVN71AC-LCS/MGVN71AD-LCSD LCS Lot-Sample#: A1D110000-301					
	99	(90 - 110)			MCAWW 300.0A	04/09/11	1101301
	99	(90 - 110)	0.22	(0-20)	MCAWW 300.0A	04/09/11	1101301
		Dilution Factor: 1					
Fluoride		WO#:MGVN51AC-LCS/MGVN51AD-LCSD LCS Lot-Sample#: A1D110000-297					
	96	(90 - 110)			MCAWW 300.0A	04/09/11	1101297
	95	(90 - 110)	0.04	(0-20)	MCAWW 300.0A	04/09/11	1101297
		Dilution Factor: 1					
Nitrate as N		WO#:MGVPA1AC-LCS/MGVPA1AD-LCSD LCS Lot-Sample#: A1D110000-304					
	95	(90 - 110)			MCAWW 300.0A	04/08/11	1101304
	95	(90 - 110)	0.58	(0-20)	MCAWW 300.0A	04/08/11	1101304
		Dilution Factor: 1					
Nitrite as N		WO#:MGVN81AC-LCS/MGVN81AD-LCSD LCS Lot-Sample#: A1D110000-302					
	99	(90 - 110)			MCAWW 300.0A	04/08/11	1101302
	100	(90 - 110)	1.1	(0-20)	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#:MGVPD1AC-LCS/MGVPD1AD-LCSD LCS Lot-Sample#: A1D110000-306					
	108	(90 - 110)			MCAWW 300.0A	04/08/11	1101306
	111 N	(90 - 110)	2.6	(0-20)	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1					
Sulfate		WO#:MGVPF1AC-LCS/MGVPF1AD-LCSD LCS Lot-Sample#: A1D110000-310					
	94	(90 - 110)			MCAWW 300.0A	04/09/11	1101310
	95	(90 - 110)	0.27	(0-20)	MCAWW 300.0A	04/09/11	1101310
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: A1D080416 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#:MGVN91AC-LCS/MGVN91AD-LCSD LCS Lot-Sample#: A1D110000-303						
	10.0	9.4	mg/L	94		MCAWW 300.0A	04/08/11	1101303
	10.0	9.4	mg/L	94	0.36	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1						
Chloride		WO#:MGVN71AC-LCS/MGVN71AD-LCSD LCS Lot-Sample#: A1D110000-301						
	50.0	49.4	mg/L	99		MCAWW 300.0A	04/09/11	1101301
	50.0	49.6	mg/L	99	0.22	MCAWW 300.0A	04/09/11	1101301
		Dilution Factor: 1						
Fluoride		WO#:MGVN51AC-LCS/MGVN51AD-LCSD LCS Lot-Sample#: A1D110000-297						
	2.5	2.4	mg/L	96		MCAWW 300.0A	04/09/11	1101297
	2.5	2.4	mg/L	95	0.04	MCAWW 300.0A	04/09/11	1101297
		Dilution Factor: 1						
Nitrate as N		WO#:MGVPA1AC-LCS/MGVPA1AD-LCSD LCS Lot-Sample#: A1D110000-304						
	2.5	2.4	mg/L	95		MCAWW 300.0A	04/08/11	1101304
	2.5	2.4	mg/L	95	0.58	MCAWW 300.0A	04/08/11	1101304
		Dilution Factor: 1						
Nitrite as N		WO#:MGVN81AC-LCS/MGVN81AD-LCSD LCS Lot-Sample#: A1D110000-302						
	2.5	2.5	mg/L	99		MCAWW 300.0A	04/08/11	1101302
	2.5	2.5	mg/L	100	1.1	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1						
Phosphate as P, Ortho		WO#:MGVPD1AC-LCS/MGVPD1AD-LCSD LCS Lot-Sample#: A1D110000-306						
	2.5	2.7	mg/L	108		MCAWW 300.0A	04/08/11	1101306
	2.5	2.8 N	mg/L	111	2.6	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1						
Sulfate		WO#:MGVPF1AC-LCS/MGVPF1AD-LCSD LCS Lot-Sample#: A1D110000-310						
	50.0	47.1	mg/L	94		MCAWW 300.0A	04/09/11	1101310
	50.0	47.3	mg/L	95	0.27	MCAWW 300.0A	04/09/11	1101310
		Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total		Work Order #: MHE9T1AC	LCS Lot-Sample#: A1D220000-227		
	107	(80 - 120)	SW846 9012A	04/21/11	1112227
		Dilution Factor: 1			
Nitrate-Nitrite		Work Order #: MGXCN1AC	LCS Lot-Sample#: G1D120000-391		
	100	(90 - 110)	MCAWW 353.2	04/12/11	1102391
		Dilution Factor: 1			
Nitrocellulose		Work Order #: MGWA31AC	LCS Lot-Sample#: G1D120000-167		
	90	(26 - 144)	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1			
Nitrogen, as Ammonia		Work Order #: MG3831AC	LCS Lot-Sample#: A1D150000-283		
	88	(85 - 114)	MCAWW 350.2	04/15/11	1105283
		Dilution Factor: 1			

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Cyanide, Total			Work Order #: MHE9T1AC		LCS Lot-Sample#: A1D220000-227		
	0.33	0.35	mg/L	107	SW846 9012A	04/21/11	1112227
			Dilution Factor: 1				
Nitrate-Nitrite			Work Order #: MGXCN1AC		LCS Lot-Sample#: G1D120000-391		
	1.0	1	mg/L	100	MCAWW 353.2	04/12/11	1102391
			Dilution Factor: 1				
Nitrocellulose			Work Order #: MGWA31AC		LCS Lot-Sample#: G1D120000-167		
	5.1	4.6	mg/L	90	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
			Dilution Factor: 1				
Nitrogen, as Ammonia			Work Order #: MG3831AC		LCS Lot-Sample#: A1D150000-283		
	14	12	mg/L	88	MCAWW 350.2	04/15/11	1105283
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite		WO#: MGPCC1C4-MS/MGPCC1C5-MSD				MS Lot-Sample #: A1D070566-011	
	87 N	(90 - 110)			MCAWW 353.2	04/12/11	1102391
	89 N	(90 - 110)	1.7	(0-20)	MCAWW 353.2	04/12/11	1102391
		Dilution Factor: 1					
Nitrocellulose		WO#: MGLKA1AF-MS/MGLKA1AG-MSD				MS Lot-Sample #: A1D060428-014	
	80	(26 - 144)			TAL-SOP WS-WC-005	04/12-04/13/11	1102167
	79	(26 - 144)	0.99	(0-45)	TAL-SOP WS-WC-005	04/12-04/13/11	1102167
		Dilution Factor: 1					

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WATER
Date Sampled...: 04/06/11 14:05 **Date Received..:** 04/07/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrate-Nitrite			WO#: MGPCC1C4-MS/MGPCC1C5-MSD				MS Lot-Sample #: A1D070566-011		
	ND	1.0	0.9 N	mg/L	87		MCAWW 353.2	04/12/11	1102391
	ND	1.0	0.9 N	mg/L	89	1.7	MCAWW 353.2	04/12/11	1102391
			Dilution Factor: 1						
Nitrocellulose			WO#: MGLKA1AF-MS/MGLKA1AG-MSD				MS Lot-Sample #: A1D060428-014		
	ND	5.1	4.1	mg/L	80		TAL-SOP WS-WC	04/12-04/13/11	1102167
	ND	5.1	4.0	mg/L	79	0.99	TAL-SOP WS-WC	04/12-04/13/11	1102167
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		WO#: MGP5D1AR-MS/MGP5D1AT-MSD				MS Lot-Sample #:	A1D080416-001
	87	(80 - 120)			MCAWW 300.0A	04/08/11	1101303
	86	(80 - 120)	0.84	(0-20)	MCAWW 300.0A	04/08/11	1101303
		Dilution Factor: 1					
Chloride		WO#: MGP5D1AM-MS/MGP5D1AN-MSD				MS Lot-Sample #:	A1D080416-001
	91	(80 - 120)			MCAWW 300.0A	04/08/11	1101301
	91	(80 - 120)	0.16	(0-20)	MCAWW 300.0A	04/08/11	1101301
		Dilution Factor: 1					
Cyanide, Total		WO#: MGP5R1AX-MS/MGP5R1A0-MSD				MS Lot-Sample #:	A1D080416-007
	99	(80 - 120)			SW846 9012A	04/21/11	1112227
	88	(80 - 120)	11	(0-20)	SW846 9012A	04/21/11	1112227
		Dilution Factor: 1					
Fluoride		WO#: MGP5D1AK-MS/MGP5D1AL-MSD				MS Lot-Sample #:	A1D080416-001
	89	(80 - 120)			MCAWW 300.0A	04/08/11	1101297
	89	(80 - 120)	0.51	(0-20)	MCAWW 300.0A	04/08/11	1101297
		Dilution Factor: 1					
Nitrate as N		WO#: MGP5D1AU-MS/MGP5D1AV-MSD				MS Lot-Sample #:	A1D080416-001
	88	(80 - 120)			MCAWW 300.0A	04/08/11	1101304
	88	(80 - 120)	0.27	(0-20)	MCAWW 300.0A	04/08/11	1101304
		Dilution Factor: 1					
Nitrite as N		WO#: MGP5D1AP-MS/MGP5D1AQ-MSD				MS Lot-Sample #:	A1D080416-001
	109	(80 - 120)			MCAWW 300.0A	04/08/11	1101302
	110	(80 - 120)	1.0	(0-20)	MCAWW 300.0A	04/08/11	1101302
		Dilution Factor: 1					
Nitrogen, as Ammonia		WO#: MGP5D1A2-MS/MGP5D1A3-MSD				MS Lot-Sample #:	A1D080416-001
	91	(75 - 125)			MCAWW 350.2	04/15/11	1105283
	91	(75 - 125)	0.0	(0-20)	MCAWW 350.2	04/15/11	1105283
		Dilution Factor: 1					
Phosphate as P, Ortho		WO#: MGP5D1AW-MS/MGP5D1AX-MSD				MS Lot-Sample #:	A1D080416-001
	119	(80 - 120)			MCAWW 300.0A	04/08/11	1101306
	121 N	(80 - 120)	1.2	(0-20)	MCAWW 300.0A	04/08/11	1101306
		Dilution Factor: 1					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate		WO#: MGP5D1A0-MS/MGP5D1A1-MSD				MS Lot-Sample #: A1D080416-001	
	93	(80 - 120)			MCAWW 300.0A	04/08/11	1101310
	93	(80 - 120)	0.04	(0-20)	MCAWW 300.0A	04/08/11	1101310

Dilution Factor: 1

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide			WO#: MGP5D1AR-MS/MGP5D1AT-MSD				MS Lot-Sample #: A1D080416-001		
	ND	10.0	8.7	mg/L	87		MCAWW 300.0A	04/08/11	1101303
	ND	10.0	8.6	mg/L	86	0.84	MCAWW 300.0A	04/08/11	1101303
			Dilution Factor: 1						
Chloride			WO#: MGP5D1AM-MS/MGP5D1AN-MSD				MS Lot-Sample #: A1D080416-001		
	1.6	50.0	47.2	mg/L	91		MCAWW 300.0A	04/08/11	1101301
	1.6	50.0	47.3	mg/L	91	0.16	MCAWW 300.0A	04/08/11	1101301
			Dilution Factor: 1						
Cyanide, Total			WO#: MGP5R1AX-MS/MGP5R1A0-MSD				MS Lot-Sample #: A1D080416-007		
	ND	0.040	0.042	mg/L	99		SW846 9012A	04/21/11	1112227
	ND	0.040	0.038	mg/L	88	11	SW846 9012A	04/21/11	1112227
			Dilution Factor: 1						
Fluoride			WO#: MGP5D1AK-MS/MGP5D1AL-MSD				MS Lot-Sample #: A1D080416-001		
	0.083	2.5	2.3	mg/L	89		MCAWW 300.0A	04/08/11	1101297
	0.083	2.5	2.3	mg/L	89	0.51	MCAWW 300.0A	04/08/11	1101297
			Dilution Factor: 1						
Nitrate as N			WO#: MGP5D1AU-MS/MGP5D1AV-MSD				MS Lot-Sample #: A1D080416-001		
	ND	2.5	2.2	mg/L	88		MCAWW 300.0A	04/08/11	1101304
	ND	2.5	2.2	mg/L	88	0.27	MCAWW 300.0A	04/08/11	1101304
			Dilution Factor: 1						
Nitrite as N			WO#: MGP5D1AP-MS/MGP5D1AQ-MSD				MS Lot-Sample #: A1D080416-001		
	ND	2.5	2.7	mg/L	109		MCAWW 300.0A	04/08/11	1101302
	ND	2.5	2.7	mg/L	110	1.0	MCAWW 300.0A	04/08/11	1101302
			Dilution Factor: 1						
Nitrogen, as Ammonia			WO#: MGP5D1A2-MS/MGP5D1A3-MSD				MS Lot-Sample #: A1D080416-001		
	ND	4.0	3.9	mg/L	91		MCAWW 350.2	04/15/11	1105283
	ND	4.0	3.9	mg/L	91	0.0	MCAWW 350.2	04/15/11	1105283
			Dilution Factor: 1						
Phosphate as P, Ortho			WO#: MGP5D1AW-MS/MGP5D1AX-MSD				MS Lot-Sample #: A1D080416-001		
	ND	2.5	3.0	mg/L	119		MCAWW 300.0A	04/08/11	1101306
	ND	2.5	3.0 N	mg/L	121	1.2	MCAWW 300.0A	04/08/11	1101306
			Dilution Factor: 1						

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: A1D080416 **Matrix.....:** WG
Date Sampled...: 04/07/11 12:00 **Date Received..:** 04/08/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Sulfate			WO#: MGP5D1A0-MS/MGP5D1A1-MSD				MS Lot-Sample #: A1D080416-001		
	27.2	50.0	73.9	mg/L	93		MCAWW 300.0A	04/08/11	1101310
	27.2	50.0	74.0	mg/L	93	0.04	MCAWW 300.0A	04/08/11	1101310
			Dilution Factor: 1						

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A1D080416 **Work Order #...:** MGP5N-SMP MGP5N-DUP **Matrix.....:** WG

Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide						SD Lot-Sample #: A1D080416-005		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	04/08/11	1101303
			Dilution Factor: 1					
Chloride						SD Lot-Sample #: A1D080416-005		
	10.0	10	mg/L	0.30	(0-20)	MCAWW 300.0A	04/08/11	1101301
			Dilution Factor: 1					
Fluoride						SD Lot-Sample #: A1D080416-005		
	0.16 B	0.14 B	mg/L	15	(0-20)	MCAWW 300.0A	04/08/11	1101297
			Dilution Factor: 1					
Nitrate as N						SD Lot-Sample #: A1D080416-005		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	04/08/11	1101304
			Dilution Factor: 1					
Nitrite as N						SD Lot-Sample #: A1D080416-005		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	04/08/11	1101302
			Dilution Factor: 1					
Phosphate as P, Ortho						SD Lot-Sample #: A1D080416-005		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	04/08/11	1101306
			Dilution Factor: 1					
Sulfate						SD Lot-Sample #: A1D080416-005		
	27.2	27.3	mg/L	0.26	(0-20)	MCAWW 300.0A	04/08/11	1101310
			Dilution Factor: 1					

NOTE(S):

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

B Estimated result. Result is less than RL.

DENVER DATA

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-14465-1

SDG Number: A1D080416

Job Description: USGS - RVAAP

For:
TestAmerica Laboratories, Inc.
4101 Shuffel Street NW
North Canton, OH 44720

Attention: Mr. Mark J. Loeb

Approved for release.
Dee A Kettula
Project Mgmt. Assistant
4/26/2011 1:23 PM

Designee for
DiLea Griego
Project Manager I
dilea.griego@testamericainc.com
04/26/2011

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.
TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

CASE NARRATIVE

Client: TestAmerica Laboratories, Inc.

Project: USGS - RVAAP

Report Number: 280-14465-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/09/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.4ºC.

TOTAL METALS - METHODS SW846 6010B/6020

Uranium was detected in method blank MB 280-61885/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged “J”. If the associated sample reported a result above the MDL and/or RL, the result has been “B” flagged.

No other difficulties were encountered.

DATA REPORTING QUALIFIERS

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Lab Section	Qualifier	Description
Metals		
	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

EXECUTIVE SUMMARY - Detections

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
280-14465-1	**FWGLL2MW-266C-0040-GF**					
Boron		29	J	100	ug/L	6010B
Lithium		23		10	ug/L	6010B
SiO2, Silica		11000		500	ug/L	6010B
Uranium		0.043	J B	1.0	ug/L	6020
280-14465-2	**FWGLL2MW-267C-0050-GF**					
Boron		26	J	100	ug/L	6010B
Lithium		23		10	ug/L	6010B
SiO2, Silica		15000		500	ug/L	6010B
Uranium		0.066	J B	1.0	ug/L	6020
280-14465-3	**FWGLLWMW-269C-0060-GF**					
Boron		120		100	ug/L	6010B
Lithium		49		10	ug/L	6010B
SiO2, Silica		8800		500	ug/L	6010B
280-14465-4	**FWGLL1MW-084C-0200-GW**					
Boron		79	J	100	ug/L	6010B
Lithium		7.5	J	10	ug/L	6010B
SiO2, Silica		11000		500	ug/L	6010B
Uranium		0.62	J B	1.0	ug/L	6020
280-14465-5	**FWGLL4MW-198C-0210-GW**					
Boron		26	J	100	ug/L	6010B
Lithium		8.3	J	10	ug/L	6010B
SiO2, Silica		22000		500	ug/L	6010B

METHOD SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Total Metals	TAL DEN		SW846 3010A
Metals (ICP/MS)	TAL DEN	SW846 6020	
Preparation, Total Metals	TAL DEN		SW846 3020A

Lab References:

TAL DEN = TestAmerica Denver

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Method	Analyst	Analyst ID
SW846 6010B	Harre, John K	JKH
SW846 6020	Lill, Thomas E	TEL

SAMPLE SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-14465-1	FWGLL2MW-266C-0040-GF	Water	04/07/2011 1104	04/09/2011 0900
280-14465-1MS	FWGLL2MW-266C-0040-GF	Water	04/07/2011 1104	04/09/2011 0900
280-14465-1DU	FWGLL2MW-266C-0040-GF	Water	04/07/2011 1104	04/09/2011 0900
280-14465-2	FWGLL2MW-267C-0050-GF	Water	04/07/2011 0852	04/09/2011 0900
280-14465-3	FWGLLWMW-269C-0060-GF	Water	04/07/2011 0859	04/09/2011 0900
280-14465-4	FWGLL1MW-084C-0200-GW	Water	04/07/2011 1200	04/09/2011 0900
280-14465-5	FWGLL4MW-198C-0210-GW	Water	04/07/2011 1500	04/09/2011 0900

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Client Sample ID: **FWGLL2MW-266C-0040-GF**

Lab Sample ID: 280-14465-1
Client Matrix: Water

Date Sampled: 04/07/2011 1104
Date Received: 04/09/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1723			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	29	J	4.4	100
Lithium	23		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	11000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	221AREF.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0523			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.043	J B	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Client Sample ID: **FWGLL2MW-267C-0050-GF**

Lab Sample ID: 280-14465-2
Client Matrix: Water

Date Sampled: 04/07/2011 0852
Date Received: 04/09/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1729			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	26	J	4.4	100
Lithium	23		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	15000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	224SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0531			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.066	J B	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Client Sample ID: **FWGLLWMW-269C-0060-GF**

Lab Sample ID: 280-14465-3
Client Matrix: Water

Date Sampled: 04/07/2011 0859
Date Received: 04/09/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1732			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	120		4.4	100
Lithium	49		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	8800		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	225SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0534			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	ND		0.020	1.0

North Carrion

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Client Sample ID: **FWGLL1MW-084C-0200-GW**

Lab Sample ID: 280-14465-4
Client Matrix: Water

Date Sampled: 04/07/2011 1200
Date Received: 04/09/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1734			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	79	J	4.4	100
Lithium	7.5	J	2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	11000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	226SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0537			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	0.62	J B	0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Client Sample ID: **FWGLL4MW-198C-0210-GW**

Lab Sample ID: 280-14465-5
Client Matrix: Water

Date Sampled: 04/07/2011 1500
Date Received: 04/09/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-62690	Instrument ID:	MT_025
Prep Method:	3010A	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1736			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Boron	26	J	4.4	100
Lithium	8.3	J	2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	22000		74	500

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	280-62706	Instrument ID:	MT_024
Prep Method:	3020A	Prep Batch:	280-61885	Lab File ID:	227SMPL.D
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0539			Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Uranium	ND		0.020	1.0

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-61884					
LCS 280-61884/2-A	Lab Control Sample	T	Water	3010A	
MB 280-61884/1-A	Method Blank	T	Water	3010A	
280-14465-1	FWGLL2MW-266C-0040-GF	T	Water	3010A	
280-14465-1DU	Duplicate	T	Water	3010A	
280-14465-1MS	Matrix Spike	T	Water	3010A	
280-14465-2	FWGLL2MW-267C-0050-GF	T	Water	3010A	
280-14465-3	FWGLLWMW-269C-0060-GF	T	Water	3010A	
280-14465-4	FWGLL1MW-084C-0200-GW	T	Water	3010A	
280-14465-5	FWGLL4MW-198C-0210-GW	T	Water	3010A	
Prep Batch: 280-61885					
LCS 280-61885/2-A	Lab Control Sample	T	Water	3020A	
MB 280-61885/1-A	Method Blank	T	Water	3020A	
280-14465-1	FWGLL2MW-266C-0040-GF	T	Water	3020A	
280-14465-1DU	Duplicate	T	Water	3020A	
280-14465-1MS	Matrix Spike	T	Water	3020A	
280-14465-2	FWGLL2MW-267C-0050-GF	T	Water	3020A	
280-14465-3	FWGLLWMW-269C-0060-GF	T	Water	3020A	
280-14465-4	FWGLL1MW-084C-0200-GW	T	Water	3020A	
280-14465-5	FWGLL4MW-198C-0210-GW	T	Water	3020A	
Analysis Batch:280-62690					
LCS 280-61884/2-A	Lab Control Sample	T	Water	6010B	280-61884
MB 280-61884/1-A	Method Blank	T	Water	6010B	280-61884
280-14465-1	FWGLL2MW-266C-0040-GF	T	Water	6010B	280-61884
280-14465-1DU	Duplicate	T	Water	6010B	280-61884
280-14465-1MS	Matrix Spike	T	Water	6010B	280-61884
280-14465-2	FWGLL2MW-267C-0050-GF	T	Water	6010B	280-61884
280-14465-3	FWGLLWMW-269C-0060-GF	T	Water	6010B	280-61884
280-14465-4	FWGLL1MW-084C-0200-GW	T	Water	6010B	280-61884
280-14465-5	FWGLL4MW-198C-0210-GW	T	Water	6010B	280-61884
Analysis Batch:280-62706					
LCS 280-61885/2-A	Lab Control Sample	T	Water	6020	280-61885
MB 280-61885/1-A	Method Blank	T	Water	6020	280-61885
280-14465-1	FWGLL2MW-266C-0040-GF	T	Water	6020	280-61885
280-14465-1DU	Duplicate	T	Water	6020	280-61885
280-14465-1MS	Matrix Spike	T	Water	6020	280-61885
280-14465-2	FWGLL2MW-267C-0050-GF	T	Water	6020	280-61885
280-14465-3	FWGLLWMW-269C-0060-GF	T	Water	6020	280-61885
280-14465-4	FWGLL1MW-084C-0200-GW	T	Water	6020	280-61885
280-14465-5	FWGLL4MW-198C-0210-GW	T	Water	6020	280-61885

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis
T = Total

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Method Blank - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	MB 280-61884/1-A	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1651	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Boron	ND		4.4	100
Lithium	ND		2.6	10
Molybdenum	ND		3.1	20
SiO2, Silica	ND		74	500

Lab Control Sample - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	LCS 280-61884/2-A	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1653	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Boron	1000	1010	101	86 - 110	
Lithium	1000	1000	100	90 - 112	
Molybdenum	1000	987	99	90 - 110	
SiO2, Silica	21400	20500	96	90 - 110	

Matrix Spike - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14465-1	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1727	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Boron	29	J	1000	1060	103	87 - 113	
Lithium	23		1000	1030	101	89 - 114	
Molybdenum	ND		1000	1000	100	83 - 109	
SiO2, Silica	11000		21400	31800	97	75 - 141	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Serial Dilution - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14464-A-1-A SD ^5	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1657	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Boron	28	J	33.8	NC	10	J
Lithium	9.3	J	ND	NC	10	
Molybdenum	ND		ND	NC	10	
SiO2, Silica	22000		21900	0.47	10	

Duplicate - Batch: 280-61884

Method: 6010B
Preparation: 3010A

Lab Sample ID:	280-14465-1	Analysis Batch:	280-62690	Instrument ID:	MT_025
Client Matrix:	Water	Prep Batch:	280-61884	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/15/2011 1725	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 0730				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Boron	29	J	29.6	2	25	J
Lithium	23		23.9	3	25	
Molybdenum	ND		ND	NC	25	
SiO2, Silica	11000		11100	0.3	20	

North Canton

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Method Blank - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	MB 280-61885/1-A	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	208_BLK.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0447	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Uranium	0.0299	J	0.020	1.0

Lab Control Sample - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	LCS 280-61885/2-A	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	209_LCS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0449	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Uranium	40.0	43.2	108	85 - 119	

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Post Digestion Spike - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14464-A-1-D PDS	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	212PDS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0458	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Uranium	0.054	J	200	198	99	75 - 125	

Matrix Spike - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14465-1	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	223_MS.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0528	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Uranium	0.043	J	40.0	42.8	107	85 - 119	

North Carleton

Client: TestAmerica Laboratories, Inc.

Job Number: 280-14465-1
Sdg Number: A1D080416

Serial Dilution - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14464-A-1-D SD ^5	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	211SDIL.D
Dilution:	5.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0455	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	%Diff	Limit	Qual
Uranium	0.054	J	ND	NC	10	

Duplicate - Batch: 280-61885

Method: 6020
Preparation: 3020A

Lab Sample ID:	280-14465-1	Analysis Batch:	280-62706	Instrument ID:	MT_024
Client Matrix:	Water	Prep Batch:	280-61885	Lab File ID:	222_DU.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/16/2011 0526	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	04/15/2011 1530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Uranium	0.043	J	0.0425	2	20	J

METALS

COVER PAGE
METALS

Lab Name: TestAmerica Denver Job Number: 280-14465-1

SDG No.: A1D080416

Project: USGS - RVAAP

Client Sample ID	Lab Sample ID
FWGLL2MW-266C-0040-GF	280-14465-1
FWGLL2MW-267C-0050-GF	280-14465-2
FWGLLWMW-269C-0060-GF	280-14465-3
FWGLL1MW-084C-0200-GW	280-14465-4
FWGLL4MW-198C-0210-GW	280-14465-5

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGLL2MW-266C-0040-GF
Lab Sample ID: 280-14465-1
Lab Name: TestAmerica Denver
Job No.: 280-14465-1
SDG ID.: A1D080416
Matrix: Water
Date Sampled: 04/07/2011 11:04
Reporting Basis: WET
Date Received: 04/09/2011 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	29	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	23	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	11000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.043	1.0	0.020	ug/L	J	B	1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGLL2MW-267C-0050-GF
Lab Sample ID: 280-14465-2
Lab Name: TestAmerica Denver
Job No.: 280-14465-1
SDG ID.: A1D080416
Matrix: Water
Date Sampled: 04/07/2011 08:52
Reporting Basis: WET
Date Received: 04/09/2011 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	26	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	23	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	15000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.066	1.0	0.020	ug/L	J	B	1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGLLWMW-269C-0060-GF
Lab Sample ID: 280-14465-3
Lab Name: TestAmerica Denver
Job No.: 280-14465-1
SDG ID.: A1D080416
Matrix: Water
Date Sampled: 04/07/2011 08:59
Reporting Basis: WET
Date Received: 04/09/2011 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	120	100	4.4	ug/L			1	6010B
7439-93-2	Lithium	49	10	2.6	ug/L			1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	8800	500	74	ug/L			1	6010B
7440-61-1	Uranium	ND	1.0	0.020	ug/L			1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGLL1MW-084C-0200-GW
Lab Sample ID: 280-14465-4
Lab Name: TestAmerica Denver
Job No.: 280-14465-1
SDG ID.: A1D080416
Matrix: Water
Date Sampled: 04/07/2011 12:00
Reporting Basis: WET
Date Received: 04/09/2011 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	79	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	7.5	10	2.6	ug/L	J		1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	11000	500	74	ug/L			1	6010B
7440-61-1	Uranium	0.62	1.0	0.020	ug/L	J	B	1	6020

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: FWGLL4MW-198C-0210-GW
Lab Sample ID: 280-14465-5
Lab Name: TestAmerica Denver
Job No.: 280-14465-1
SDG ID.: A1D080416
Matrix: Water
Date Sampled: 04/07/2011 15:00
Reporting Basis: WET
Date Received: 04/09/2011 09:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-42-8	Boron	26	100	4.4	ug/L	J		1	6010B
7439-93-2	Lithium	8.3	10	2.6	ug/L	J		1	6010B
7439-98-7	Molybdenum	ND	20	3.1	ug/L			1	6010B
14808-60-7	SiO2, Silica	22000	500	74	ug/L			1	6010B
7440-61-1	Uranium	ND	1.0	0.020	ug/L			1	6020

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

ICV Source: ICP ICVL_00049 Concentration Units: ug/L

CCV Source: ICP CCVL_00151

Analyte	ICV 280-62690/8 04/15/2011 09:39				ICV 280-62690/9 04/15/2011 09:42				CCV 280-62690/51 04/15/2011 16:44			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Boron	259		250	104	262		250	105	517		500	103
Lithium	252		250	101	257		250	103	1000		1000	100
Molybdenum	242		250	97	245		250	98	500		500	100
SiO2, Silica	4220		4280	99	4260		4280	100	10300		10700	97

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

ICV Source: ICP ICVL_00049 Concentration Units: ug/L

CCV Source: ICP CCVL_00151

Analyte	CCV 280-62690/63 04/15/2011 17:11				CCV 280-62690/76 04/15/2011 17:41							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Boron	515		500	103	520		500	104				
Lithium	999		1000	100	1020		1000	102				
Molybdenum	497		500	99	504		500	101				
SiO2, Silica	10300		10700	96	10400		10700	98				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

ICV Source: MS ICV_00316 Concentration Units: ug/L

CCV Source: MS CCV_00317

Analyte	ICV 280-62706/4 04/15/2011 19:28				ICV 280-62706/6 04/15/2011 19:33				CCV 280-62706/18 04/15/2011 20:06			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Uranium	39.8		40.0	100	39.6		40.0	99	50.7		50.0	101

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

ICV Source: MS ICV_00316 Concentration Units: ug/L

CCV Source: MS CCV_00317

Analyte	CCV 280-62706/164 04/16/2011 04:41				CCV 280-62706/175 04/16/2011 05:12				CCV 280-62706/186 04/16/2011 05:42			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Uranium	52.2		50.0	104	51.9		50.0	104	52.1		50.0	104

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Method: 6010B Instrument ID: MT_025

Lab Sample ID: CRI 280-62690/14 Concentration Units: ug/L

CRQL Check Standard Source: ICP RL STD_00348

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Boron	100	104		104	50-150
Lithium	10.0	10.7		107	50-150
Molybdenum	10.0	10.2	J	102	50-150
SiO2, Silica	1070	1060	J	99	50-150

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

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Method: 6020 Instrument ID: MT_024

Lab Sample ID: CRI 280-62706/10 Concentration Units: ug/L

CRQL Check Standard Source: MS RL STD_00326

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Uranium	1.00	1.01		101	50-150

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

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Concentration Units: ug/L

Analyte	RL	ICB 280-62690/13 04/15/2011 09:54		CCB 280-62690/52 04/15/2011 16:46		CCB 280-62690/64 04/15/2011 17:13		CCB 280-62690/77 04/15/2011 17:43	
		Found	C	Found	C	Found	C	Found	C
Boron	100	ND		ND		ND		ND	
Lithium	10	ND		ND		ND		ND	
Molybdenum	20	ND		ND		ND		ND	
SiO2, Silica	1100	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Concentration Units: ug/L

Analyte	RL	ICB 280-62706/9 04/15/2011 19:42		CCB 280-62706/20 04/15/2011 20:11		CCB 280-62706/165 04/16/2011 04:44		CCB 280-62706/176 04/16/2011 05:14	
		Found	C	Found	C	Found	C	Found	C
Uranium	1.0	ND		0.0437	J	0.0690	J	0.0547	J

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Concentration Units: ug/L

Analyte	RL	CCB 280-62706/187 04/16/2011 05:45							
		Found	C	Found	C	Found	C	Found	C
Uranium	1.0	0.0503	J						

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Concentration Units: ug/L Lab Sample ID: MB 280-61884/1-A

Instrument Code: MT_025 Batch No.: 62690

CAS No.	Analyte	Concentration	C	Q	Method
7440-42-8	Boron	ND			6010B
7439-93-2	Lithium	ND			6010B
7439-98-7	Molybdenum	ND			6010B
14808-60-7	SiO2, Silica	ND			6010B

3-IN
METHOD BLANK
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Concentration Units: ug/L Lab Sample ID: MB 280-61885/1-A

Instrument Code: MT_024 Batch No.: 62706

CAS No.	Analyte	Concentration	C	Q	Method
7440-61-1	Uranium	0.0299	J		6020

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Lab Sample ID: ICSAB 280-62690/16 Instrument ID: MT_025

Lab File ID: ICS Source: ICP ICSAB_00029

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Boron	**2000**	**1818**	**91**
Lithium	**1000**	**1032**	**103**
Molybdenum	**1000**	**911**	**91**
SiO2, Silica	**21400**	**20802**	**97**
Aluminum	*500000*	*507520*	*102*
Antimony	*1000*	*965*	*97*
Arsenic	*2000*	*1958*	*98*
Barium	*500*	*488*	*98*
Beryllium	*500*	*471*	*94*
Bismuth	*1000*	*1059*	*106*
Cadmium	*1000*	*1023*	*102*
Calcium	*500000*	*457890*	*92*
Chromium	*500*	*475*	*95*
Cobalt	*500*	*454*	*91*
Copper	*500*	*534*	*107*
Iron	*200000*	*186780*	*93*
Lead	*1000*	*891*	*89*
Magnesium	*500000*	*479720*	*96*
Manganese	*500*	*484*	*97*
Nickel	*1000*	*893*	*89*
Phosphorus	*2000*	*1871*	*94*
Potassium	*50000*	*50456*	*101*
Selenium	*5000*	*4665*	*93*
Silicon	*10000*	*9721*	*97*
Silver	*1000*	*1071*	*107*
Sodium	*50000*	*52252*	*105*
Strontium	*1000*	*956*	*96*
Thallium	*10000*	*8279*	*83*
Thorium	*2000*	*2019*	*101*
Tin	*10000*	*8783*	*88*
Titanium	*1000*	*969*	*97*
Vanadium	*500*	*485*	*97*
Zinc	*1000*	*938*	*94*
Zirconium	*1000*	*955*	*95*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Lab Sample ID: ICSA 280-62690/17 Instrument ID: MT_025

Lab File ID: ICS Source: ICP ICSA_00035

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Boron		**-1.66**	
Lithium		**5.09**	
Molybdenum		**-0.870**	
SiO2, Silica		**10.4**	
Aluminum	*500000*	*498730*	*100*
Antimony		*-0.0900*	
Arsenic		*5.55*	
Barium		*0.310*	
Beryllium		*-0.0300*	
Bismuth		*5.62*	
Cadmium		*0.350*	
Calcium	*500000*	*453650*	*91*
Chromium		*2.79*	
Cobalt		*-1.52*	
Copper		*7.10*	
Iron	*200000*	*184780*	*92*
Lead		*-5.41*	
Magnesium	*500000*	*473400*	*95*
Manganese		*2.09*	
Nickel		*0.580*	
Phosphorus		*-3.20*	
Potassium		*-11.1*	
Selenium		*-0.390*	
Silicon		*4.86*	
Silver		*-0.450*	
Sodium		*69.5*	
Strontium		*-2.26*	
Thallium		*-1.82*	
Thorium		*-20.6*	
Tin		*-0.180*	
Titanium		*1.76*	
Vanadium		*1.98*	
Zinc		*6.58*	
Zirconium		*0.100*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Lab Sample ID: ICSA 280-62706/12 Instrument ID: MT_024

Lab File ID: 013ICSA.D ICS Source: MS ICSA_00316

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Found Percent Recovery
Uranium		**0.0066**	
Antimony		*0.286*	
Arsenic		*0.252*	
Barium		*0.169*	
Beryllium		*0.0126*	
Cadmium		*0.370*	
Chromium		*2.74*	
Cobalt		*0.0311*	
Copper		*0.235*	
Lead		*0.130*	
Manganese		*0.597*	
Molybdenum	*2000*	*2213*	*111*
Nickel		*1.05*	
Selenium		*0.0647*	
Silver		*0.0929*	
Thallium		*0.0405*	
Thorium		*0.947*	
Tin		*0.168*	
Vanadium		*0.165*	
Zinc		*1.50*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Lab Sample ID: ICSAB 280-62706/13 Instrument ID: MT_024

Lab File ID: 014ICSB.D ICS Source: MS ICSAB_00318

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Uranium	**100**	**104**	**104**
Antimony	*100*	*98.5*	*99*
Arsenic	*100*	*102*	*102*
Barium	*100*	*106*	*106*
Beryllium	*100*	*92.4*	*92*
Cadmium	*100*	*95.5*	*95*
Chromium	*100*	*111*	*111*
Cobalt	*100*	*103*	*103*
Copper	*100*	*90.4*	*90*
Lead	*100*	*93.2*	*93*
Manganese	*100*	*103*	*102*
Molybdenum	*2100*	*2317*	*110*
Nickel	*100*	*95.7*	*96*
Selenium	*100*	*103*	*103*
Silver	*100*	*87.9*	*88*
Thallium	*100*	*95.8*	*96*
Thorium	*100*	*118*	*118*
Tin	*100*	*104*	*104*
Vanadium	*100*	*114*	*114*
Zinc	*100*	*96.8*	*97*

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Lab Sample ID: ICSA 280-62706/66 Instrument ID: MT_024

Lab File ID: 067ICSA.D ICS Source: MS ICSA_00316

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Uranium		**0.0339**	
Antimony		*0.284*	
Arsenic		*0.337*	
Barium		*0.184*	
Beryllium		*0.0090*	
Cadmium		*0.465*	
Chromium		*2.68*	
Cobalt		*0.0484*	
Copper		*0.293*	
Lead		*0.143*	
Manganese		*0.631*	
Molybdenum	*2000*	*2178*	*109*
Nickel		*1.15*	
Selenium		*-0.0205*	
Silver		*0.104*	
Thallium		*0.0364*	
Tin		*0.342*	
Vanadium		*0.0376*	
Zinc		*1.58*	

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

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Lab Sample ID: ICSAB 280-62706/67 Instrument ID: MT_024

Lab File ID: 068ICSB.D ICS Source: MS ICSAB_00318

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Found Percent Recovery
Uranium	**100**	**103**	**103**
Antimony	*100*	*98.1*	*98*
Arsenic	*100*	*103*	*103*
Barium	*100*	*105*	*105*
Beryllium	*100*	*94.6*	*95*
Cadmium	*100*	*94.4*	*94*
Chromium	*100*	*112*	*112*
Cobalt	*100*	*104*	*104*
Copper	*100*	*92.0*	*92*
Lead	*100*	*92.4*	*92*
Manganese	*100*	*105*	*105*
Molybdenum	*2100*	*2346*	*112*
Nickel	*100*	*97.5*	*98*
Selenium	*100*	*103*	*103*
Silver	*100*	*86.0*	*86*
Thallium	*100*	*95.9*	*96*
Thorium	*100*	*117*	*117*
Tin	*100*	*102*	*102*
Vanadium	*100*	*114*	*114*
Zinc	*100*	*96.3*	*96*

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

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: FWGLL2MW-266C-0040-GF MS Lab ID: 280-14465-1 MS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Boron	1060		29	J	1000	103	87-113		6010B
Lithium	1030		23		1000	101	89-114		6010B
Molybdenum	1000		ND		1000	100	83-109		6010B
SiO2, Silica	31800		11000		21400	97	75-141		6010B
Uranium	42.8		0.043	J	40.0	107	85-119		6020

SSR = Spiked Sample Result

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

FORM VA - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: Lab ID: 280-14464-A-1-D PDS

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Matrix: Water Concentration Units: ug/L

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Uranium	198		0.054	J	200	99	75-125		6020

SSR = Spiked Sample Result

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

FORM VB - IN

6-IN
DUPLICATES
METALS

Client ID: FWGLL2MW-266C-0040-GF DU Lab ID: 280-14465-1 DU

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

% Solids for Sample: % Solids for Duplicate:

Matrix: Water Concentration Units: ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Boron	100	29	J	29.6	J	2		6010B
Lithium	10	23		23.9		3		6010B
Molybdenum	20	ND		ND		NC		6010B
SiO2, Silica	500	11000		11100		0.3		6010B
Uranium	1.0	0.043	J	0.0425	J	2		6020

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

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-61884/2-A

Lab Name: TestAmerica Denver Job No.: 280-14465-1

Sample Matrix: Water LCS Source: ICP SPK 2A_00024

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Boron	1000	1010		101	86	110		6010B
Lithium	1000	1000		100	90	112		6010B
Molybdenum	1000	987		99	90	110		6010B
SiO2, Silica	21400	20500		96	90	110		6010B

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

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS

Lab ID: LCS 280-61885/2-A

Lab Name: TestAmerica Denver Job No.: 280-14465-1

Sample Matrix: Water LCS Source: MS CALSTD-1_00037

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Uranium	40.0	43.2		108	85	119		6020

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

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-14464-A-1-A SD ^5

SDG No: A1D080416

Lab Name: TestAmerica Denver Job No: 280-14465-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Boron	28	J	33.8	J	NC		6010B
Lithium	9.3	J	ND		NC		6010B
Molybdenum	ND		ND		NC		6010B
SiO2, Silica	22000		21900		0.47		6010B

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

FORM VIII-IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 280-14464-A-1-D SD ^5

SDG No: A1D080416

Lab Name: TestAmerica Denver Job No: 280-14465-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Uranium	0.054	J	ND		NC		6020

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

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14465-1

SDG Number: A1D080416

Matrix: Water Instrument ID: MT_025

Method: 6010B MDL Date: 02/23/2011 08:42

Prep Method: 3010A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Boron	208.9	100	4.37
Lithium	670.7	10	2.61
Molybdenum	202	20	3.13
SiO2, Silica	288.1	500	74.3

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14465-1

SDG Number: A1D080416

Matrix: Water Instrument ID: MT_025

Method: 6010B XMDL Date: 02/23/2011 08:43

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Boron		100	4.37
Lithium		10	2.61
Molybdenum		20	3.13
SiO2, Silica		1100	74.3

9-IN
DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14465-1

SDG Number: A1D080416

Matrix: Water Instrument ID: MT_024

Method: 6020 MDL Date: 04/26/2010 12:11

Prep Method: 3020A

Analyte	Wavelength/ Mass	RL (ug/L)	MDL (ug/L)
Uranium	238	1	0.02

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: TestAmerica Denver Job Number: 280-14465-1

SDG Number: A1D080416

Matrix: Water Instrument ID: MT_024

Method: 6020 XMDL Date: 04/26/2010 12:12

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Uranium		1	0.02

ICP Data Review Checklist

TALS BATCH NUMBER: 62686-62700		Earliest due date: 4/18/11
Run Date: 4/15/11	Analyst: JKH	Instrument: 25
QC programs/Methods Run: SEE RUN LOGS		

Review Items	Yes	No	N/A	2nd Level
A. Preparation/Matrix QC				
1. LCS done per prep batch and within QC limits?	✓			✓
2. Method blank done per prep batch and < 1/2 RL or CRDL (CLP) or < 2.2x MDL 200.7 ?	✓			✓
3. MS run at required frequency and within limits?	✓			✓
4. MSD or DU run at required frequency and RPD within SOP limits?	✓			✓
5. Serial dilution done per prep batch (or per SDG for CLP)?	✓			✓
6. Post digest spike analyzed if required (CLP, DOD & AFCEE only)? NCM Whether needed for DODV3, AFCEE 4.0, 6010c?	✓			✓
B. Calibration/Instrument Run QC				
1. ICV/CCV analyzed at appropriate frequency and within control limits ? (**6010B**: CLP = 90 - 110%; **200.7:** ICV = 95 - 105%, CCV 90-110%) If not in control, was the ICV or CCV reanalyzed twice to show return to control as per NELAP?	✓			✓
2. ICB/CCB analyzed at appropriate frequency and < RL or < CRDL (CLP) or < 2X MDL (DOD V3,AFCEE 4.0)? Was it less than the MDLV (6010C)	✓			✓
3. High Standard (HIGH) reanalyzed before samples and recovered within QC limits? (+-5%)	✓			✓
4. RL STD run and recovered within QC limits ? (± 50% for non-CLP, ± 20% for DoD V3 / AFCEE 4.0 / USACE)	✓			✓
5. Was the LLICV/LLCCV analyzed at appropriate frequency for 6010C and within control (+-30 % or +-20%)	✓			✓
6. ICSA/ICSAB run at required frequency and within SOP limits? (ICSA < 2X MDL AFCEE 4.0, DOD V3 or <RL std work or <MDLV 6010C))	✓			✓
C. Sample Results				
1. For 6010B, were samples with concentrations > the linear range for any parameter diluted and reanalyzed? For 200.7, were samples with concentrations within 90% of the linear range diluted and reanalyzed?	✓			✓
2. Are all reported results bracketed by in control QC?	✓			✓
D. Other				
1. Are all nonconformances documented appropriately?	✓			✓
2. Calculations checked for errors?	✓			✓
3. Transcriptions checked for errors? (Example: Are dilution factors that are entered into the sequence log correct?)	✓			✓
4. All client/project specific requirements met?	✓			✓
5. Date/time of analysis verified as correct?	✓			✓
6. PDF attached, verified uncorrupted?	✓			✓

Analyst: JKH Date: 4/18/11

Comments:

2nd Level Reviewer: [signature] Date: 4/18/11

Comments:

62706 - 6020 water
62711 - Soil

TestAmerica Denver

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ICP/MS Technical Data Review Checklist

Lab Project ID Number(s): see attached cover sheet Check Method/SOP Used: ☐6020/DV-MT-0018 ☐200.8/DV-MT-0002

Review Items	-- Level 1 -- Yes	No	N/A	Level 2	Comments & Samples Affected
Tune					
1. Tune solution analyzed min. of 4 times for 6020 or 5 times for 200.8?	✓			✓	
2. Tune RSD <5%?	✓			✓	
2. Resolution ≤ 0.9 AMU full width at 10% peak height? **NOTE**: This also satisfies 200.8, 1.0 AMU at 5% peak height	✓			✓	
Initial Calibration					
1. Done with a minimum of 3 integrations of a high standard and blank?	✓			✓	
2. ICV/CCV run at beginning of run, 10% frequency, and end of run? Results with 10% of expected value?	✓			✓	
3. ICB/CCB run at beginning of run, 10% frequency, and end of run? Results +/- RL	✓			✓	
4. ICSA/AB analyzed at beginning of run and every 12 hours and results 80-120% of TV?	✓			✓	
5. RL Std analyzed at beginning of run and results +/- 50% of TV(for AFCEE 4.0, DoD V3 +/- 20% of true value)?	✓			✓	
Client Samples & QC Sample Results					
1. Were all samples within linear range, ≤ 90% of LDR for 200.8?	✓			✓	
2. Dilutions due to target elements? ____ Dilutions for other reasons? ✓	✓			✓	
3. All reported results bracketed by in control QC?	✓			✓	
4. All 6020 internal standards for all analyses 30-120% of intensities in blank or all 200.8 internal standards 60-125%?	✓			✓	
5. Was a 5X serial dilution analyzed for 6020 and, if so, are results ± 10% of original result, if original ≥ 100x MDL?	✓			✓	
6. LCS included in batch and within QC limits?	✓			✓	
7. Method blank included and <1/2RL?	✓			✓	
8. MS and MSD included in batch?	✓			✓	
9. PDS analyzed and recovery 75-125%?	✓			✓	
10. Manual calculations documented properly and checked?	✓			✓	
11. Are non-conformances documented on an NCM?	✓			✓	
12. Is the appropriate raw data included?	✓			✓	
13. Are all results manually entered into LIMS verified? Are all electronic data files archived to the appropriate network locations?	✓			✓	
14. Were special client requirements met?	✓			✓	

1st Level Reviewer: _____ Date: 4/19/11

2nd Level Reviewer: Yongming Li Date: 4/19/11

METALS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Batch Number: 61884 Batch Start Date: 04/15/11 07:30 Batch Analyst: Niman, Katie M

Batch Method: 3010A Batch End Date: 04/15/11 12:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	ICP SPK 2A 00024	ICP SPK 3A 00026	
MB 280-61884/1		3010A, 6010B			50 mL	50 mL			
LCS 280-61884/2		3010A, 6010B			50 mL	50 mL	0.5 mL	0.5 mL	
280-14465-A-1	FWGLL2MW-266C-0040-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14465-A-1 DU	FWGLL2MW-266C-0040-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14465-A-1 MS	FWGLL2MW-266C-0040-GF	3010A, 6010B	T	<2	50 mL	50 mL	0.5 mL	0.5 mL	
280-14465-A-2	FWGLL2MW-267C-0050-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14465-A-3	FWGLLWMW-269C-0060-GF	3010A, 6010B	T	<2	50 mL	50 mL			
280-14465-A-4	FWGLL1MW-084C-0200-GW	3010A, 6010B	T	<2	50 mL	50 mL			
280-14465-A-5	FWGLL4MW-198C-0210-GW	3010A, 6010B	T	<2	50 mL	50 mL			

Batch Notes	
Lot # of hydrochloric acid	J46037
Lot # of Nitric Acid	K09041
Hot Block ID number	02
Oven, Bath or Block Temperature 1	95 Degrees C
Oven, Bath or Block Temperature 2	95 Degrees C
Pipette ID	MET-007
Person who witnessed spiking	KMN
ID number of the thermometer	908001558
Digestion Tube/Cup Lot #	1010191
Uncorrected Temperature	95 Degrees C
Uncorrected Temperature 2	95 Degrees C

Basis	Basis Description
T	Total/NA

METALS BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-14465-1

SDG No.: A1D080416

Batch Number: 61885 Batch Start Date: 04/15/11 15:30 Batch Analyst: Mooney, Joseph C

Batch Method: 3020A Batch End Date: 04/15/11 20:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	MS CALSTD-1 00037	MS CALSTD-2 00036	
MB 280-61885/1		3020A, 6020			50 mL	50 mL			
LCS 280-61885/2		3020A, 6020			50 mL	50 mL	0.1 mL	0.1 mL	
280-14465-A-1	FWGLL2MW-266C-0040-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14465-A-1 DU	FWGLL2MW-266C-0040-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14465-A-1 MS	FWGLL2MW-266C-0040-GF	3020A, 6020	T	<2	50 mL	50 mL	0.1 mL	0.1 mL	
280-14465-A-2	FWGLL2MW-267C-0050-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14465-A-3	FWGLLWMW-269C-0060-GF	3020A, 6020	T	<2	50 mL	50 mL			
280-14465-A-4	FWGLL1MW-084C-0200-GW	3020A, 6020	T	<2	50 mL	50 mL			
280-14465-A-5	FWGLL4MW-198C-0210-GW	3020A, 6020	T	<2	50 mL	50 mL			

Batch Notes	
Lot # of Nitric Acid	K09041
Hot Block ID number	06
Oven, Bath or Block Temperature 1	94 Degrees C
Oven, Bath or Block Temperature 2	94 Degrees C
Pipette ID	MET-015
ID number of the thermometer	14859
Digestion Tube/Cup Lot #	1010191

Basis	Basis Description
T	Total/NA

Shipping and Receiving Documents

North Canton

2.4°

TestAmerica Laboratories, Inc.

SAMPLE ANALYSIS REQUISTION

Laboratory: **TestAmerica Denver**
4955 Yarrow Street
Arvada, CO 80002

Lab Request: SR126391

Report Package: Need Analytical Report

Expanded Deliverables 2011-04-22

Client Code: 1434673

Project Manager: MARK LOEB

Sample I.D.	Work Order Number	Client Sample ID	Sampling Date	Analysis Required
A1D080416-2	MGP5G	FWGLL2mw-266C-0040-GF	2011-04-07 11:04	WATER, 6020, Uranium by ICP/MS (Denver)
A1D080416-2	MGP5G	FWGLL2mw-266C-0040-GF	2011-04-07 11:04	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D080416-4	MGP5M	FWGLL2mw-267C-0050-GF	2011-04-07 8:52	WATER, 6020, Uranium by ICP/MS (Denver)
A1D080416-4	MGP5M	FWGLL2mw-267C-0050-GF	2011-04-07 8:52	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D080416-6	MGP5P	FWGLL2mw-269C-0060-GF	2011-04-07 8:59	WATER, 6020, Uranium by ICP/MS (Denver)
A1D080416-6	MGP5P	FWGLL2mw-269C-0060-GF	2011-04-07 8:59	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D080416-7	MGP5R	FWGLL1mw-084C-0200-GW	2011-04-07 12:00	WATER, 6020, Uranium by ICP/MS (Denver)
A1D080416-7	MGP5R	FWGLL1mw-084C-0200-GW	2011-04-07 12:00	WATER, 6010B, Metals B Li Mo Si (Denver)
A1D080416-9	MGP53	FWGLL4mw-198C-0210-GW	2011-04-07 15:00	WATER, 6020, Uranium by ICP/MS (Denver)
A1D080416-9	MGP53	FWGLL4mw-198C-0210-GW	2011-04-07 15:00	WATER, 6010B, Metals B Li Mo Si (Denver)

Page 756 of 756

Please use Client Sample ID for report

Call MARK LOEB with questions at 330-497-9396

at the TAL North Canton Laboratory

Shipping Method: FED EX

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: _____ Date/Time: 4/8/11 1100

Relinquished by: _____ Date/Time: _____

Received for lab by: _____ Date/Time: 4/9/11 0900

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

928

TestAmerica
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WEST SACRAMENTO DATA

Case Narrative

TestAmerica West Sacramento Project Number A1D080416

General Comments
The samples were received at 1 degrees C.

Following US EPA Region V guidelines, manual integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure, Acceptable Manual Integration Practices, SOP No.: S-Q-004, including Addendum 1. The reasons for manual integration have been documented on the affected chromatograms, which are provided in the raw data package. The raw data also includes the original chromatograms prior to any manual integration being performed. The following samples and analytes required manual integration:

LC10
8330 MRL standard (analyzed on 4/13/11 @ 11:49) – Tetryl, 3-Nitrotoluene, & PETN
8330 MRL standard (analyzed on 4/16/11 @ 06:49) - Tetryl & PETN
8330 MRL standard (analyzed on 4/19/11 @ 08:33) – Tetryl, 4-Nitrotoluene, & 3-Nitrotoluene
8330 MRL standard (analyzed on 4/19/11 @ 00:17) – Tetryl

WATER, 8330, Explosives
Sample(s): 7, 9
There was insufficient sample volume to prepare a matrix spike/matrix spike duplicate (MS/MSD) pair with this batch.

Sample(s): 7, 9
The percent difference values for RDX, 4-Amino-2,6-Dinitrotoluene, 2-Nitrotoluene, 2,6-Dintrotoluene, & 3-Nitrotoluene are above the project specific acceptance limit in some of the associated MRL standards. For corrective action a standard at approximately 2X the MDL was analyzed and these analytes were detected.

Sample(s): 7
This sample has high surrogate recoveries due to visible matrix interferences. The surrogate recoveries in the associated method blank and laboratory control sample (LCS) were within established control limits. The results for this sample may be biased high.

There were no other anomalies associated with this project.

WATER, 8330, Explosives

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

HPLC

Lot-Sample #...: A1D080416-007 Work Order #...: MGP5R1AF Matrix.....: WG
Date Sampled...: 04/07/11 12:00 Date Received..: 04/08/11
Prep Date.....: 04/13/11 Analysis Date..: 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1.06 Method.....: SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3,5-Trinitrobenzene	4.7 PG	0.11	ug/L
1,3-Dinitrobenzene	0.86	0.11	ug/L
2-Amino-4,6-dinitrotoluene	15	0.11	ug/L
2,4,6-Trinitrotoluene	11	0.11	ug/L
2,4-Dinitrotoluene	2.8	0.11	ug/L
2,6-Dinitrotoluene	1.1	0.11	ug/L
2-Nitrotoluene	ND	0.53	ug/L
3-Nitrotoluene	ND	0.53	ug/L
4-Nitrotoluene	ND	0.53	ug/L
HMX	0.98 PG	0.11	ug/L
Nitrobenzene	ND	0.11	ug/L
Nitroglycerin	ND	0.69	ug/L
RDX	0.59	0.11	ug/L
PETN	ND	0.69	ug/L
Tetryl	ND	0.11	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	449 *	(50 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits.

PG The percent difference between the original and confirmation analyses is greater than 40%.

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

HPLC

Lot-Sample #...: A1D080416-007	Work Order #...: MGP5R2AF		Matrix.....: WG
Date Sampled...: 04/07/11 12:00	Date Received..: 04/08/11		
Prep Date.....: 04/13/11	Analysis Date..: 04/19/11		
Prep Batch #...: 1103098			
Dilution Factor: 2.13	Method.....: SW846 8330		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Amino-2,6-dinitrotoluene	29	0.21	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	444 *	(50 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

HPLC

Lot-Sample #...: A1D080416-009 **Work Order #...:** MGP531AF **Matrix.....:** WG
Date Sampled...: 04/07/11 15:00 **Date Received..:** 04/08/11
Prep Date.....: 04/13/11 **Analysis Date..:** 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1.06 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3,5-Trinitrobenzene	ND	0.11	ug/L
1,3-Dinitrobenzene	ND	0.11	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.11	ug/L
2,4,6-Trinitrotoluene	ND	0.11	ug/L
2,4-Dinitrotoluene	ND	0.11	ug/L
2,6-Dinitrotoluene	ND	0.11	ug/L
2-Nitrotoluene	ND	0.53	ug/L
3-Nitrotoluene	ND	0.53	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.11	ug/L
4-Nitrotoluene	ND	0.53	ug/L
HMX	ND	0.11	ug/L
Nitrobenzene	ND	0.11	ug/L
Nitroglycerin	ND	0.69	ug/L
RDX	ND	0.11	ug/L
PETN	ND	0.69	ug/L
Tetryl	ND	0.11	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	102	(50 - 150)

QC DATA ASSOCIATION SUMMARY

A1D080416

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
007	WG	SW846 8330		1103098	
	WG	SW846 8330 (Modif		1102416	1102229
009	WG	SW846 8330		1103098	
	WG	SW846 8330 (Modif		1102416	1102229

METHOD BLANK REPORT

HPLC

Client Lot #...: A1D080416 **Work Order #...:** MGXKL1AA **Matrix.....:** WATER
MB Lot-Sample #: G1D130000-098

Prep Date.....: 04/13/11
Analysis Date..: 04/16/11 **Prep Batch #...:** 1103098
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,3,5-Trinitrobenzene	ND	0.10	ug/L	SW846 8330
1,3-Dinitrobenzene	ND	0.10	ug/L	SW846 8330
2-Amino-4,6-dinitrotoluene	ND	0.10	ug/L	SW846 8330
2,4,6-Trinitrotoluene	ND	0.10	ug/L	SW846 8330
2,4-Dinitrotoluene	ND	0.10	ug/L	SW846 8330
2,6-Dinitrotoluene	ND	0.10	ug/L	SW846 8330
2-Nitrotoluene	ND	0.50	ug/L	SW846 8330
3-Nitrotoluene	ND	0.50	ug/L	SW846 8330
4-Amino-2,6-dinitrotoluene	ND	0.10	ug/L	SW846 8330
4-Nitrotoluene	ND	0.50	ug/L	SW846 8330
HMX	ND	0.10	ug/L	SW846 8330
Nitrobenzene	ND	0.10	ug/L	SW846 8330
Nitroglycerin	ND	0.65	ug/L	SW846 8330
RDX	ND	0.10	ug/L	SW846 8330
PETN	ND	0.65	ug/L	SW846 8330
Tetryl	ND	0.10	ug/L	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	102	(50 - 150)

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D080416 Work Order #...: MGXKL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD
Prep Date.....: 04/13/11 Analysis Date..: 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,3,5-Trinitrobenzene	1.0	1.1	ug/L	115		SW846 8330
	1.0	1.1	ug/L	114	0.61	SW846 8330
1,3-Dinitrobenzene	1.0	1.2	ug/L	117		SW846 8330
	1.0	1.2	ug/L	116	0.25	SW846 8330
2-Amino-4,6-dinitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	110	0.45	SW846 8330
2,4,6-Trinitrotoluene	1.0	0.90	ug/L	90		SW846 8330
	1.0	0.89	ug/L	89	1.4	SW846 8330
2,4-Dinitrotoluene	1.0	1.1	ug/L	112		SW846 8330
	1.0	1.1	ug/L	111	0.98	SW846 8330
2,6-Dinitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	111	0.36	SW846 8330
2-Nitrotoluene	1.0	1.1	ug/L	110		SW846 8330
	1.0	1.1	ug/L	110	0.090	SW846 8330
3-Nitrotoluene	1.0	1.1	ug/L	109		SW846 8330
	1.0	1.1	ug/L	108	0.27	SW846 8330
4-Amino-2,6-dinitrotoluene	1.0	1.1	ug/L	109		SW846 8330
	1.0	1.1	ug/L	107	1.1	SW846 8330
4-Nitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	110	0.63	SW846 8330
HMX	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	111	0.090	SW846 8330
Nitrobenzene	1.0	1.1	ug/L	112		SW846 8330
	1.0	1.1	ug/L	112	0.17	SW846 8330
Nitroglycerin	5.0	5.1	ug/L	102		SW846 8330
	5.0	5.1	ug/L	101	0.94	SW846 8330
RDX	1.0	1.2	ug/L	116		SW846 8330
	1.0	1.2	ug/L	117	0.68	SW846 8330
PETN	5.0	5.0	ug/L	100		SW846 8330
	5.0	4.9	ug/L	98	1.5	SW846 8330
Tetryl	1.0	1.0	ug/L	101		SW846 8330
	1.0	1.0	ug/L	100	0.90	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	106	(50 - 150)
	106	(50 - 150)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...:	A1D080416	**Work Order #...:**	MGXKL1AC-LCS	**Matrix.....:**	WATER
LCS Lot-Sample#:	G1D130000-098		MGXKL1AD-LCSD		

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D080416 Work Order #...: MGXKL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD
Prep Date.....: 04/13/11 Analysis Date..: 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3,5-Trinitrobenzene	115	(53 - 135)			SW846 8330
	114	(53 - 135)	0.61	(0-30)	SW846 8330
1,3-Dinitrobenzene	117	(54 - 120)			SW846 8330
	116	(54 - 120)	0.25	(0-30)	SW846 8330
2-Amino-4,6-dinitrotoluene	111	(53 - 120)			SW846 8330
	110	(53 - 120)	0.45	(0-30)	SW846 8330
2,4,6-Trinitrotoluene	90	(37 - 120)			SW846 8330
	89	(37 - 120)	1.4	(0-30)	SW846 8330
2,4-Dinitrotoluene	112	(58 - 136)			SW846 8330
	111	(58 - 136)	0.98	(0-30)	SW846 8330
2,6-Dinitrotoluene	111	(52 - 144)			SW846 8330
	111	(52 - 144)	0.36	(0-30)	SW846 8330
2-Nitrotoluene	110	(52 - 120)			SW846 8330
	110	(52 - 120)	0.090	(0-30)	SW846 8330
3-Nitrotoluene	109	(48 - 136)			SW846 8330
	108	(48 - 136)	0.27	(0-30)	SW846 8330
4-Amino-2,6-dinitrotoluene	109	(58 - 159)			SW846 8330
	107	(58 - 159)	1.1	(0-30)	SW846 8330
4-Nitrotoluene	111	(46 - 136)			SW846 8330
	110	(46 - 136)	0.63	(0-30)	SW846 8330
HMX	111	(45 - 140)			SW846 8330
	111	(45 - 140)	0.090	(0-30)	SW846 8330
Nitrobenzene	112	(49 - 120)			SW846 8330
	112	(49 - 120)	0.17	(0-30)	SW846 8330
Nitroglycerin	102	(60 - 120)			SW846 8330
	101	(60 - 120)	0.94	(0-60)	SW846 8330
RDX	116	(39 - 120)			SW846 8330
	117	(39 - 120)	0.68	(0-30)	SW846 8330
PETN	100	(60 - 120)			SW846 8330
	98	(60 - 120)	1.5	(0-30)	SW846 8330
Tetryl	101	(30 - 120)			SW846 8330
	100	(30 - 120)	0.90	(0-30)	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	106	(50 - 150)
	106	(50 - 150)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D080416 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD

NOTE(S):

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

Bold print denotes control parameters

WATER, Nitroguanidine

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL1mw-084C-0200-GW

Dissolved HPLC

Lot-Sample #...: A1D080416-007	**Work Order #...:** MGP5R1AJ		**Matrix.....:** WG
Date Sampled...: 04/07/11 12:00	**Date Received..:** 04/08/11		
Prep Date.....: 04/12/11	**Analysis Date..:** 04/19/11		
Prep Batch #...: 1102416			
Dilution Factor: 1	**Method.....:** SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

U.S.Geological Survey (USGS)

Client Sample ID: FWGLL4mw-198C-0210-GW

Dissolved HPLC

Lot-Sample #...:	A1D080416-009	**Work Order #...:**	MGP531AJ	**Matrix.....:**	WG
Date Sampled...:	04/07/11 15:00	**Date Received..:**	04/08/11		
Prep Date.....:	04/12/11	**Analysis Date..:**	04/19/11		
Prep Batch #...:	1102416				
Dilution Factor:	1	**Method.....:**	SW846 8330 (Modif		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Nitroguanidine	ND	20	ug/L

QC DATA ASSOCIATION SUMMARY

A1D080416

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
007	WG	SW846 8330		1103098	
	WG	SW846 8330 (Modif		1102416	1102229
009	WG	SW846 8330		1103098	
	WG	SW846 8330 (Modif		1102416	1102229

METHOD BLANK REPORT

HPLC

Client Lot #...: A1D080416 **Work Order #...:** MGXET1AA **Matrix.....:** WATER
MB Lot-Sample #: G1D120000-416

Prep Date.....: 04/12/11
Analysis Date..: 04/19/11 **Prep Batch #...:** 1102416
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Nitroguanidine	ND	20	ug/L	SW846 8330 (Modif

NOTE(S):

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

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D080416 Work Order #...: MGXET1AC Matrix.....: WATER
LCS Lot-Sample#: G1D120000-416
Prep Date.....: 04/12/11 Analysis Date..: 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Nitroguanidine	250	260	ug/L	103	SW846 8330 (Modi

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D080416 Work Order #...: MGXET1AC Matrix.....: WATER
LCS Lot-Sample#: G1D120000-416
Prep Date.....: 04/12/11 Analysis Date..: 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Nitroguanidine	103	(73 - 117)	SW846 8330 (Modified

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D080416 **Work Order #...:** MGP071AJ-MS **Matrix.....:** WATER
MS Lot-Sample #: A1D080404-008 MGP071AK-MSD
Date Sampled...: 04/07/11 08:59 **Date Received..:** 04/08/11
Prep Date.....: 04/12/11 **Analysis Date..:** 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Nitroguanidine	ND	250	260	ug/L	104		SW846 8330 (Modified
	ND	250	260	ug/L	106	1.8	SW846 8330 (Modified

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D080416 Work Order #...: MGP071AJ-MS Matrix.....: WATER
MS Lot-Sample #: A1D080404-008 MGP071AK-MSD
Date Sampled...: 04/07/11 08:59 Date Received..: 04/08/11
Prep Date.....: 04/12/11 Analysis Date..: 04/19/11
Prep Batch #...: 1102416
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Nitroguanidine	104	(73 - 117)			SW846 8330 (Modified
	106	(73 - 117)	1.8	(0-15)	SW846 8330 (Modified

NOTE(S):

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

Bold print denotes control parameters

WATER, 8330, Explosives

QC Summary

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: A1D080416 Work Order #...: MGXKL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD
Prep Date.....: 04/13/11 Analysis Date..: 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
1,3,5-Trinitrobenzene	1.0	1.1	ug/L	115		SW846 8330
	1.0	1.1	ug/L	114	0.61	SW846 8330
1,3-Dinitrobenzene	1.0	1.2	ug/L	117		SW846 8330
	1.0	1.2	ug/L	116	0.25	SW846 8330
2-Amino-4,6-dinitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	110	0.45	SW846 8330
2,4,6-Trinitrotoluene	1.0	0.90	ug/L	90		SW846 8330
	1.0	0.89	ug/L	89	1.4	SW846 8330
2,4-Dinitrotoluene	1.0	1.1	ug/L	112		SW846 8330
	1.0	1.1	ug/L	111	0.98	SW846 8330
2,6-Dinitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	111	0.36	SW846 8330
2-Nitrotoluene	1.0	1.1	ug/L	110		SW846 8330
	1.0	1.1	ug/L	110	0.090	SW846 8330
3-Nitrotoluene	1.0	1.1	ug/L	109		SW846 8330
	1.0	1.1	ug/L	108	0.27	SW846 8330
4-Amino-2,6-dinitrotoluene	1.0	1.1	ug/L	109		SW846 8330
	1.0	1.1	ug/L	107	1.1	SW846 8330
4-Nitrotoluene	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	110	0.63	SW846 8330
HMX	1.0	1.1	ug/L	111		SW846 8330
	1.0	1.1	ug/L	111	0.090	SW846 8330
Nitrobenzene	1.0	1.1	ug/L	112		SW846 8330
	1.0	1.1	ug/L	112	0.17	SW846 8330
Nitroglycerin	5.0	5.1	ug/L	102		SW846 8330
	5.0	5.1	ug/L	101	0.94	SW846 8330
RDX	1.0	1.2	ug/L	116		SW846 8330
	1.0	1.2	ug/L	117	0.68	SW846 8330
PETN	5.0	5.0	ug/L	100		SW846 8330
	5.0	4.9	ug/L	98	1.5	SW846 8330
Tetryl	1.0	1.0	ug/L	101		SW846 8330
	1.0	1.0	ug/L	100	0.90	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	106	(50 - 150)
	106	(50 - 150)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...:	A1D080416	**Work Order #...:**	MGXKL1AC-LCS	**Matrix.....:**	WATER
LCS Lot-Sample#:	G1D130000-098		MGXKL1AD-LCSD		

NOTE(S):

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

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D080416 Work Order #...: MGXKL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD
Prep Date.....: 04/13/11 Analysis Date..: 04/16/11
Prep Batch #...: 1103098
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3,5-Trinitrobenzene	115	(53 - 135)			SW846 8330
	114	(53 - 135)	0.61	(0-30)	SW846 8330
1,3-Dinitrobenzene	117	(54 - 120)			SW846 8330
	116	(54 - 120)	0.25	(0-30)	SW846 8330
2-Amino-4,6-dinitrotoluene	111	(53 - 120)			SW846 8330
	110	(53 - 120)	0.45	(0-30)	SW846 8330
2,4,6-Trinitrotoluene	90	(37 - 120)			SW846 8330
	89	(37 - 120)	1.4	(0-30)	SW846 8330
2,4-Dinitrotoluene	112	(58 - 136)			SW846 8330
	111	(58 - 136)	0.98	(0-30)	SW846 8330
2,6-Dinitrotoluene	111	(52 - 144)			SW846 8330
	111	(52 - 144)	0.36	(0-30)	SW846 8330
2-Nitrotoluene	110	(52 - 120)			SW846 8330
	110	(52 - 120)	0.090	(0-30)	SW846 8330
3-Nitrotoluene	109	(48 - 136)			SW846 8330
	108	(48 - 136)	0.27	(0-30)	SW846 8330
4-Amino-2,6-dinitrotoluene	109	(58 - 159)			SW846 8330
	107	(58 - 159)	1.1	(0-30)	SW846 8330
4-Nitrotoluene	111	(46 - 136)			SW846 8330
	110	(46 - 136)	0.63	(0-30)	SW846 8330
HMX	111	(45 - 140)			SW846 8330
	111	(45 - 140)	0.090	(0-30)	SW846 8330
Nitrobenzene	112	(49 - 120)			SW846 8330
	112	(49 - 120)	0.17	(0-30)	SW846 8330
Nitroglycerin	102	(60 - 120)			SW846 8330
	101	(60 - 120)	0.94	(0-60)	SW846 8330
RDX	116	(39 - 120)			SW846 8330
	117	(39 - 120)	0.68	(0-30)	SW846 8330
PETN	100	(60 - 120)			SW846 8330
	98	(60 - 120)	1.5	(0-30)	SW846 8330
Tetryl	101	(30 - 120)			SW846 8330
	100	(30 - 120)	0.90	(0-30)	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
3,4-Dinitrotoluene	106	(50 - 150)
	106	(50 - 150)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A1D080416 **Work Order #...:** MGXKL1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: G1D130000-098 MGXKL1AD-LCSD

NOTE(S):

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

Bold print denotes control parameters

TestAmerica West Sacramento
GC/LC INSTRUMENT LOG

Page# 11

Inst ID: LC10 Batch ID: 01082011
Method : Method 8330 Test : SOP SAC-LC-0009
ICAL Date: See Calibration Report

Date	Time	Operator	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	Comments
08-JAN-2011	13:00	RN	8330 PRIMER	A-000001.	0 g	0 mL	1	
08-JAN-2011	13:34	RN	8330 PRIMER	A-000002.	0 g	0 mL	1	
08-JAN-2011	14:06	RN	8330 PRIMER	A-000003.	0 g	0 mL	1	
08-JAN-2011	14:36	RN	8330 PRIMER	A-000004.	0 g	0 mL	1	
08-JAN-2011	15:20	RN	8330 PRIMER	A-000005.	0 g	0 mL	1	
08-JAN-2011	16:03	RN	8330 PRIMER	A-000006.	0 g	0 mL	1	
08-JAN-2011	16:45	RN	8330 PRIMER	A-000007.	0 g	0 mL	1	
08-JAN-2011	17:28	RN	8330 PRIMER	A-000008.	0 g	0 mL	1	
08-JAN-2011	18:11	RN	8330 PRIMER	A-000009.	0 g	0 mL	1	
08-JAN-2011	18:54	RN	8330 PRIMER	A-000010.	0 g	0 mL	1	
08-JAN-2011	19:37	RN	Nitrobenzene	A-000011.	0 g	0 mL	1	
08-JAN-2011	20:20	RN	8330 PRIMER	A-000012.	0 g	0 mL	1	
08-JAN-2011	21:03	RN	8330 PRIMER	A-000013.	0 g	0 mL	1	
08-JAN-2011	21:47	RN	8330 PRIMER	A-000014.	0 g	0 mL	1	
08-JAN-2011	22:34	RN	8330 PRIMER	A-000015.	0 g	0 mL	1	
08-JAN-2011	23:14	RN	8330 PRIMER	A-000016.	0 g	0 mL	1	
08-JAN-2011	23:59	RN	8330 PRIMER	A-000017.	0 g	0 mL	1	
09-JAN-2011	00:41	RN	Tetryl Std	A-000018.	0 g	0 mL	1	
09-JAN-2011	01:26	RN	BLANK	A-000019.	0 g	0 mL	1	
09-JAN-2011	02:11	RN	ICAL L1 10GCSV0528 8330 5ng/mL	A-000020.	0 g	0 mL	1	
09-JAN-2011	02:56	RN	ICAL L2 10GCSV0527 8330 10ng/m	A-000021.	0 g	0 mL	1	
09-JAN-2011	03:41	RN	ICAL L3 10GCSV0526 8330 20ng/m	A-000022.	0 g	0 mL	1	
09-JAN-2011	04:26	RN	ICAL L4 10GCSV0525 8330 50ng/m	A-000023.	0 g	0 mL	1	
09-JAN-2011	05:11	RN	ICAL L5 10GCSV0524 8330 100ng/	A-000024.	0 g	0 mL	1	
09-JAN-2011	05:56	RN	ICAL L6 10GCSV0523 8330 200ng/	A-000025.	0 g	0 mL	1	
09-JAN-2011	06:42	RN	ICAL L7 10GCSV0522 8330 500ng/	A-000026.	0 g	0 mL	1	
09-JAN-2011	07:27	RN	ICAL L8 10GCSV0521 8330 1000ng	A-000027.	0 g	0 mL	1	
09-JAN-2011	08:12	RN	BLANK	A-000028.	0 g	0 mL	1	
09-JAN-2011	08:57	RN	MRL 10GCSV0528 8330 5ng/mL	A-000029.	0 g	0 mL	1	
09-JAN-2011	09:42	RN	MRL 10GCSV0526 8330 20ng/mL	A-000030.	0 g	0 mL	1	
09-JAN-2011	10:27	RN	ICV 10GCSV0502 8330 200ng/mL	A-000031.	0 g	0 mL	1	

printed before end of sequence.
RPN 1/9/11

TestAmerica West Sacramento
GC/LC INSTRUMENT LOG

Inst ID: LC10 Batch ID: 04132011
Method : Method 8330 Test : SOP SAC-LC-0009
ICAL Date: See Calibration Report

Date	Time	Operator	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	Comments
13-APR-2011	10:18	NS	PRIMER	A-000001.	1000 mL	20 mL	1	
13-APR-2011	11:04	NS	STD_06 11GCSV0170 8330 200-500	A-000002.	0 g	0 mL	1	
13-APR-2011	11:49	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000003.	0 g	0 mL	1	2x MDL Check
13-APR-2011	12:34	NS	MGQCX1AA 1098154 G1D080000-154	A-000004.	1000 mL	20 mL	1	
13-APR-2011	13:19	NS	MGQCX1AE 1098154 G1D080000-154	A-000005.	1000 mL	20 mL	1	
13-APR-2011	14:05	NS	MGQCX1AC 1098154 G1D080000-154	A-000006.	1000 mL	20 mL	1	
13-APR-2011	14:50	NS	MGQCX1AD 1098154 G1D080000-154	A-000007.	1000 mL	20 mL	1	
13-APR-2011	15:35	NS	MGJ191AA 1098154 A1D050444-1 1	A-000008.	1005.12 mL	20 mL	1	
13-APR-2011	16:20	NS	MGJ2C1AA 1098154 A1D050444-2 1	A-000009.	968.96 mL	20 mL	1	
13-APR-2011	17:05	NS	MGJ2D1AA 1098154 A1D050444-3 1	A-000010.	1024.28 mL	20 mL	1	
13-APR-2011	17:51	NS	MGJ2F1AA 1098154 A1D050444-4 1	A-000011.	1028.57 mL	20 mL	1	
13-APR-2011	18:36	NS	MGJ2H1AA 1098154 A1D050444-5 1	A-000012.	897.69 mL	20 mL	1	
13-APR-2011	19:21	NS	MGJ2J1AA 1098154 A1D050444-6 1	A-000013.	1018.9 mL	20 mL	1	
13-APR-2011	20:06	NS	STD_05 10GCSV0524 8330 100-200	A-000014.	0 g	0 mL	1	
13-APR-2011	20:51	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000015.	0 g	0 mL	1	
13-APR-2011	21:36	NS	MGJ2L1AA 1098154 A1D050444-7 1	A-000016.	1002.47 mL	20 mL	1	
13-APR-2011	22:21	NS	MGJ2M1AA 1098154 A1D050444-8 1	A-000017.	1019.86 mL	20 mL	1	
13-APR-2011	23:07	NS	MGJ2N1AA 1098154 A1D050444-9 1	A-000018.	1029.84 mL	20 mL	1	
13-APR-2011	23:52	NS	MGTWF1AA 1101074 G1D110000-74	A-000019.	1000 mL	20 mL	1	
14-APR-2011	00:37	NS	MGTWF1AD 1101074 G1D110000-74	A-000020.	1000 mL	20 mL	1	
14-APR-2011	01:22	NS	MGTWF1AC 1101074 G1D110000-74	A-000021.	1000 mL	20 mL	1	
14-APR-2011	02:07	NS	MGLG71AA 1101074 A1D060428-1 1	A-000022.	839.4 mL	20 mL	1	
14-APR-2011	02:52	NS	MGLH81AA 1101074 A1D060428-2 1	A-000023.	944.39 mL	20 mL	1	
14-APR-2011	03:37	NS	MGLJC1AA 1101074 A1D060428-3 1	A-000024.	909.33 mL	20 mL	1	
14-APR-2011	04:22	NS	MGLJD1AA 1101074 A1D060428-4 1	A-000025.	863.58 mL	20 mL	1	
14-APR-2011	05:08	NS	STD_05 10GCSV0524 8330 100-200	A-000026.	0 g	0 mL	1	
14-APR-2011	05:53	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000027.	0 g	0 mL	1	
14-APR-2011	06:38	NS	MGLJH1AA 1101074 A1D060428-5 1	A-000028.	942.73 mL	20 mL	1	
14-APR-2011	07:23	NS	MGLJM1AA 1101074 A1D060428-6 1	A-000029.	904.51 mL	20 mL	1	
14-APR-2011	08:08	NS	MGLJP1AC 1101074 A1D060428-7 1	A-000030.	814.65 mL	20 mL	1	
14-APR-2011	08:53	NS	MGLJR1AC 1101074 A1D060428-8 1	A-000031.	944.02 mL	20 mL	1	
14-APR-2011	09:38	NS	MGLJW1AC 1101074 A1D060428-9 1	A-000032.	865.83 mL	20 mL	1	
14-APR-2011	10:24	NS	MGLJX1AC 1101074 A1D060428-10	A-000033.	978.55 mL	20 mL	1	
14-APR-2011	11:09	NS	MGLJ01AC 1101074 A1D060428-11	A-000034.	872.07 mL	20 mL	1	
14-APR-2011	11:54	NS	QC CHECK	A-000035.	1000 mL	20 mL	1	
14-APR-2011	12:39	NS	MGLJ21AA 1101074 A1D060428-12	A-000036.	855.48 mL	20 mL	1	
14-APR-2011	13:24	NS	MGLJ71AA 1101074 A1D060428-13	A-000037.	899.68 mL	20 mL	1	
14-APR-2011	14:09	NS	STD_05 10GCSV0524 8330 100-200	A-000038.	0 g	0 mL	1	
14-APR-2011	14:54	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000039.	0 g	0 mL	1	
14-APR-2011	15:40	NS	MGLKA1AA 1101074 A1D060428-14	A-000040.	1008.87 mL	20 mL	1	
14-APR-2011	16:24	NS	MGLKA1AC 1101074 A1D060428-14	A-000041.	962.7 mL	20 mL	1	
14-APR-2011	17:09	NS	MGLKA1AD 1101074 A1D060428-14	A-000042.	995.11 mL	20 mL	1	
14-APR-2011	17:54	NS	MGLKH1AA 1101074 A1D060428-15	A-000043.	933.6 mL	20 mL	1	
14-APR-2011	18:39	NS	MGLKK1AA 1101074 A1D060428-16	A-000044.	829.6 mL	20 mL	1	
14-APR-2011	19:24	NS	MGV3E1AA 1102080 G1D120000-80	A-000045.	1000 mL	20 mL	1	
14-APR-2011	20:09	NS	MGV3E1AC 1102080 G1D120000-80	A-000046.	1000 mL	20 mL	1	
14-APR-2011	20:54	NS	MGT4M1AA 1102080 G1D110417-1 1	A-000047.	1010.44 mL	20 mL	1	
14-APR-2011	21:40	NS	MGT5C1AA 1102080 G1D110417-2 1	A-000048.	1011.98 mL	20 mL	1	
14-APR-2011	22:25	NS	MGT5D1AA 1102080 G1D110417-3 1	A-000049.	998.33 mL	20 mL	1	
14-APR-2011	23:10	NS	STD_05 10GCSV0524 8330 100-200	A-000050.	0 g	0 mL	1	

Sequence continued on next page

TestAmerica West Sacramento
GC/LC INSTRUMENT LOG

Page 2 of Batch 04132011 on Instrument LC10
For header information, refer to the first page of this batch's log.

Date	Time	Operator	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	Comments
14-APR-2011	23:55	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000051.	0 g	0 mL	1	
15-APR-2011	00:40	NS	MGT5E1AA 1102080 G1D110417-4 1	A-000052.	1003.33 mL	20 mL	1	
15-APR-2011	01:25	NS	MGT3L1AA 1101153 G1D110000-153	A-000053.	1000 mL	20 mL	1	
15-APR-2011	02:10	NS	MGT3L1AC 1101153 G1D110000-153	A-000054.	1000 mL	20 mL	1	
15-APR-2011	02:55	NS	MGPTV1AA 1101153 G1D070642-1 1	A-000055.	997.33 mL	20 mL	1	
15-APR-2011	03:40	NS	MGPTW1AA 1101153 G1D070642-2 1	A-000056.	993.38 mL	20 mL	1	
15-APR-2011	04:25	NS	MGPTX1AA 1101153 G1D070642-3 1	A-000057.	1001.06 mL	20 mL	1	
15-APR-2011	05:10	NS	MGPT01AA 1101153 G1D070642-4 1	A-000058.	986.42 mL	20 mL	1	
15-APR-2011	05:56	NS	MGPT11AA 1101153 G1D070642-5 1	A-000059.	990.99 mL	20 mL	1	
15-APR-2011	06:41	NS	MGPT21AA 1101153 G1D070642-6 1	A-000060.	1002.01 mL	20 mL	1	
15-APR-2011	07:26	NS	MGPT31AA 1101153 G1D070642-7 1	A-000061.	997.06 mL	20 mL	1	
15-APR-2011	08:11	NS	MGPT41AA 1101153 G1D070642-8 1	A-000062.	987.66 mL	20 mL	1	
15-APR-2011	08:56	NS	STD_05 10GCSV0524 8330 100-200	A-000063.	0 g	0 mL	1	

TestAmerica West Sacramento
GC/LC INSTRUMENT LOG

Inst ID: LC10 Batch ID: 04152011
Method : Method 8330 Test : SOP SAC-LC-0009
ICAL Date: See Calibration Report

Date	Time	Operator	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	Comments
15-APR-2011	10:32	NS	PRIMER	A-000001.	1000 mL	20 mL	1	
15-APR-2011	11:17	NS	PRIMER	A-000002.	1000 mL	20 mL	1	
15-APR-2011	12:02	NS	STD_06 11GCSV0170 8330 200-500	A-000003.	0 g	0 mL	1	
15-APR-2011	12:47	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000004.	0 g	0 mL	1	
15-APR-2011	13:32	NS	MGLJC1AA 1101074 A1D060428-3 2	A-000005.	909.33 mL	20 mL	2	
15-APR-2011	14:17	NS	MGLJD1AA 1101074 A1D060428-4 2	A-000006.	863.58 mL	20 mL	2	
15-APR-2011	15:02	NS	MGV4M1AA 1102095 G1D120000-95	A-000007.	1000 mL	20 mL	1	
15-APR-2011	15:47	NS	MGV4M1AD 1102095 G1D120000-95	A-000008.	1000 mL	20 mL	1	
15-APR-2011	16:33	NS	MGV4M1AC 1102095 G1D120000-95	A-000009.	1000 mL	20 mL	1	
15-APR-2011	17:18	NS	MGNCW1AA 1102095 A1D070414-1 1	A-000010.	988.78 mL	20 mL	1	
15-APR-2011	18:03	NS	MGNC11AA 1102095 A1D070414-2 1	A-000011.	1015.83 mL	20 mL	1	
15-APR-2011	18:48	NS	MGNC21AA 1102095 A1D070414-3 1	A-000012.	1003.28 mL	20 mL	1	
15-APR-2011	19:33	NS	MGNC31AA 1102095 A1D070414-4 1	A-000013.	1002.35 mL	20 mL	1	
15-APR-2011	20:18	NS	MGNC41AA 1102095 A1D070414-5 1	A-000014.	996.36 mL	20 mL	1	
15-APR-2011	21:03	NS	STD_05 10GCSV0524 8330 100-200	A-000015.	0 g	0 mL	1	
15-APR-2011	21:48	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000016.	0 g	0 mL	1	
15-APR-2011	22:33	NS	MGNC61AA 1102095 A1D070414-6 1	A-000017.	983.71 mL	20 mL	1	
15-APR-2011	23:18	NS	MGNC71AA 1102095 A1D070414-7 1	A-000018.	1012.15 mL	20 mL	1	
16-APR-2011	00:03	NS	MGNC91AC 1102095 A1D070414-8 1	A-000019.	997.53 mL	20 mL	1	
16-APR-2011	00:48	NS	MGNC91AH 1102095 A1D070414-8 S	A-000020.	1017.57 mL	20 mL	1	
16-APR-2011	01:33	NS	MGNC91AJ 1102095 A1D070414-8 D	A-000021.	1023.48 mL	20 mL	1	
16-APR-2011	02:19	NS	MGNDC1AC 1102095 A1D070414-9 1	A-000022.	942.8 mL	20 mL	1	
16-APR-2011	03:04	NS	MGNDD1AC 1102095 A1D070414-10	A-000023.	952.61 mL	20 mL	1	
16-APR-2011	03:49	NS	MGNDG1AA 1102095 A1D070414-11	A-000024.	1018.2 mL	20 mL	1	
16-APR-2011	04:34	NS	MGNDJ1AA 1102095 A1D070414-12	A-000025.	924.73 mL	20 mL	1	
16-APR-2011	05:19	NS	MGNDL1AA 1102095 A1D070414-13	A-000026.	937.71 mL	20 mL	1	
16-APR-2011	06:04	NS	STD_05 10GCSV0524 8330 100-200	A-000027.	0 g	0 mL	1	
16-APR-2011	06:49	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000028.	0 g	0 mL	1	
16-APR-2011	07:35	NS	MGNDN1AA 1102095 A1D070414-14	A-000029.	1014.72 mL	20 mL	1	
16-APR-2011	08:20	NS	MGNDN1AC 1102095 A1D070414-14	A-000030.	975.67 mL	20 mL	1	
16-APR-2011	09:05	NS	MGNDN1AD 1102095 A1D070414-14	A-000031.	1016.77 mL	20 mL	1	
16-APR-2011	09:50	NS	MGNDP1AA 1102095 A1D070414-15	A-000032.	966.04 mL	20 mL	1	
16-APR-2011	10:35	NS	MGXKL1AA 1103098 G1D130000-98	A-000033.	1000 mL	20 mL	1	
16-APR-2011	11:20	NS	MGXKL1AC 1103098 G1D130000-98	A-000034.	1000 mL	20 mL	1	
16-APR-2011	12:05	NS	MGXKL1AD 1103098 G1D130000-98	A-000035.	1000 mL	20 mL	1	
16-APR-2011	12:51	NS	MGPCC1AE 1103098 A1D070566-11	A-000036.	931.65 mL	20 mL	1	
16-APR-2011	13:36	NS	MGP5R1AF 1103098 A1D080416-7 1	A-000037.	936.66 mL	20 mL	1	
16-APR-2011	14:21	NS	MGP531AF 1103098 A1D080416-9 1	A-000038.	941.31 mL	20 mL	1	
16-APR-2011	15:06	NS	STD_05 10GCSV0524 8330 100-200	A-000039.	0 g	0 mL	1	
16-APR-2011	15:51	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000040.	0 g	0 mL	1	
16-APR-2011	16:36	NS	MGX0X1AA 1103202 G1D130000-202	A-000041.	1000 mL	20 mL	1	
16-APR-2011	17:21	NS	MGX0X1AD 1103202 G1D130000-202	A-000042.	1000 mL	20 mL	1	
16-APR-2011	18:06	NS	MGX0X1AC 1103202 G1D130000-202	A-000043.	1000 mL	20 mL	1	
16-APR-2011	18:51	NS	MGP0L1AA 1103202 A1D080404-1 1	A-000044.	1012.12 mL	20 mL	1	
16-APR-2011	19:36	NS	MGP0L1AE 1103202 A1D080404-1 S	A-000045.	987.91 mL	20 mL	1	
16-APR-2011	20:22	NS	MGP0L1AF 1103202 A1D080404-1 D	A-000046.	1022.6 mL	20 mL	1	
16-APR-2011	21:07	NS	MGP0T1AA 1103202 A1D080404-2 1	A-000047.	985.75 mL	20 mL	1	
16-APR-2011	21:52	NS	MGP0X1AA 1103202 A1D080404-3 1	A-000048.	878.52 mL	20 mL	1	
16-APR-2011	22:37	NS	MGP011AA 1103202 A1D080404-4 1	A-000049.	837.26 mL	20 mL	1	
16-APR-2011	23:22	NS	MGP021AA 1103202 A1D080404-5 1	A-000050.	966.73 mL	20 mL	1	

Sequence continued on next page

TestAmerica West Sacramento
GC/LC INSTRUMENT LOG

Page 2 of Batch 04152011 on Instrument LC10
For header information, refer to the first page of this batch's log.

Date	Time	Operator	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	Comments
17-APR-2011	00:07	NS	STD_05 10GCSV0524 8330 100-200	A-000051.	0 g	0 mL	1	
17-APR-2011	00:52	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000052.	0 g	0 mL	1	
17-APR-2011	01:38	NS	MGP041AA 1103202 A1D080404-6 1	A-000053.	896.86 mL	20 mL	1	
17-APR-2011	02:23	NS	MGP051AA 1103202 A1D080404-7 1	A-000054.	909.26 mL	20 mL	1	
17-APR-2011	03:08	NS	MGP071AA 1103202 A1D080404-8 1	A-000055.	995.99 mL	20 mL	1	
17-APR-2011	03:53	NS	MGP071AC 1103202 A1D080404-8 S	A-000056.	973.82 mL	20 mL	1	
17-APR-2011	04:38	NS	MGP071AD 1103202 A1D080404-8 D	A-000057.	964.47 mL	20 mL	1	
17-APR-2011	05:24	NS	MGP081AA 1103202 A1D080404-9 1	A-000058.	992.33 mL	20 mL	1	
17-APR-2011	06:09	NS	MGP091AA 1103202 A1D080404-10	A-000059.	933.23 mL	20 mL	1	
17-APR-2011	06:54	NS	MGP1A1AA 1103202 A1D080404-11	A-000060.	966.03 mL	20 mL	1	
17-APR-2011	07:39	NS	STD_05 10GCSV0524 8330 100-200	A-000061.	0 g	0 mL	1	
17-APR-2011	08:24	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000062.	0 g	0 mL	1	
17-APR-2011	09:10	NS	MGXKQ1AA 1103100 G1D130000-100	A-000063.	1000 mL	20 mL	1	
17-APR-2011	09:55	NS	MGXKQ1AC 1103100 G1D130000-100	A-000064.	1000 mL	20 mL	1	
17-APR-2011	10:40	NS	MGQMT1AA 1103100 G1D080474-1 1	A-000065.	995.77 mL	20 mL	1	
17-APR-2011	11:25	NS	STD_05 10GCSV0524 8330 100-200	A-000066.	0 g	0 mL	1	

TestAmerica West Sacramento
GC/LC INSTRUMENT LOG

Inst ID: LC10 Batch ID: 04182011
Method : Method 8330 Test : SOP SAC-LC-0009
ICAL Date: See Calibration Report

Date	Time	Operator	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	Comments
18-APR-2011	22:02	NS	PRIMER	A-000001.	1000 mL	20 mL	1	
18-APR-2011	22:47	NS	PRIMER	A-000002.	1000 mL	20 mL	1	
18-APR-2011	23:32	NS	STD_06 11GCSV0170 8330 200-500	A-000003.	0 g	0 mL	1	
19-APR-2011	00:17	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000004.	0 g	0 mL	1	
19-APR-2011	01:02	NS	MGP5R2AF 1103098 A1D080416-7 2	A-000005.	936.66 mL	20 mL	2	
19-APR-2011	01:47	NS	MGX0X1AC 1103202 G1D130000-202	A-000006.	1000 mL	20 mL	1	
19-APR-2011	02:32	NS	MGXKQ1AC 1103100 G1D130000-100	A-000007.	1000 mL	20 mL	1	
19-APR-2011	03:17	NS	MG4TL1AA 1105341 G1D150000-341	A-000008.	1000 mL	20 mL	1	
19-APR-2011	04:02	NS	MG4TL1AD 1105341 G1D150000-341	A-000009.	1000 mL	20 mL	1	
19-APR-2011	04:48	NS	MG4TL1AC 1105341 G1D150000-341	A-000010.	1000 mL	20 mL	1	
19-APR-2011	05:33	NS	MG3W21AA 1105341 G1D140599-1 1	A-000011.	981.56 mL	20 mL	1	
19-APR-2011	06:18	NS	MG3W31AA 1105341 G1D140599-2 1	A-000012.	989.86 mL	20 mL	1	
19-APR-2011	07:03	NS	MG3W41AA 1105341 G1D140599-3 1	A-000013.	976.36 mL	20 mL	1	
19-APR-2011	07:48	NS	STD_05 10GCSV0524 8330 100-200	A-000014.	0 g	0 mL	1	
19-APR-2011	08:33	NS	STD_MRL 11GCSV0086 8330 5-20ng	A-000015.	0 g	0 mL	1	

TestAmerica West Sacramento
GC/LC INSTRUMENT LOG

Inst ID: LC12 Batch ID: 04122011
Method : Method 8330 Test : SOP WS-LC-0009
ICAL Date: See Calibration Report

Date	Time	Operator	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	Comments
12-APR-2011	11:30	NS	8330 PRIMER	C-000001.	0 g	0 mL	1	
12-APR-2011	12:36	NS	8330 PRIMER	C-000002.	0 g	0 mL	1	
12-APR-2011	13:41	NS	BLANK	C-000003.	0 g	0 mL	1	
12-APR-2011	14:46	NS	STD_01 11GCSV0085 8330 5ng/mL	C-000004.	0 g	0 mL	1	
12-APR-2011	15:51	NS	STD_02 10GCSV0527 8330 10ng/mL	C-000005.	0 g	0 mL	1	
12-APR-2011	16:57	NS	STD_03 10GCSV0526 8330 20ng/mL	C-000006.	0 g	0 mL	1	
12-APR-2011	18:02	NS	STD_04 10GCSV0525 8330 50ng/mL	C-000007.	0 g	0 mL	1	
12-APR-2011	19:08	NS	STD_05 10GCSV0524 8330 100ng/m	C-000008.	0 g	0 mL	1	
12-APR-2011	20:13	NS	STD_06 11GCSV0170 8330 200ng/m	C-000009.	0 g	0 mL	1	
12-APR-2011	21:18	NS	STD_07 10GCSV0522 8330 500ng/m	C-000010.	0 g	0 mL	1	
12-APR-2011	22:24	NS	STD_08 10GCSV0521 8330 1000ng/	C-000011.	0 g	0 mL	1	
12-APR-2011	23:29	NS	BLANK	C-000012.	0 g	0 mL	1	
13-APR-2011	00:34	NS	STD_ICV 11GCSV0169 8330 200ng/	C-000013.	0 g	0 mL	1	
13-APR-2011	01:40	NS	STD_MRL 11GCSV0086 8330 5ng/mL	C-000014.	0 g	0 mL	1	2X mol check

TestAmerica West Sacramento
GC/LC INSTRUMENT LOG

Page# 15

Inst ID: LC12 Batch ID: 04182011
Method : Method 8330 Test : SOP WS-LC-0009
ICAL Date: See Calibration Report

Date	Time	Operator	Sample ID	File ID	Vol or Wt	Extract Vol	Diln	Comments
18-APR-2011	21:46	NS	PRIMER	C-000001.	0 g	0 mL	1	
18-APR-2011	22:51	NS	PRIMER	C-000002.	0 g	0 mL	1	
18-APR-2011	23:56	NS	STD_06 11GCSV0170 8330 200-500	C-000003.	0 g	0 mL	1	CCV fail for 246
19-APR-2011	01:01	NS	STD_MRL 11GCSV0086 8330 5-20ng	C-000004.	0 g	0 mL	1	
19-APR-2011	02:07	NS	MGX0X1AA 1103202 G1D130000-202	C-000005.	1000 mL	20 mL	1	RT
19-APR-2011	03:12	NS	MGP011AA 1103202 A1D080404-4 1	C-000006.	837.26 mL	20 mL	1	
19-APR-2011	04:18	NS	MGP021AA 1103202 A1D080404-5 1	C-000007.	966.73 mL	20 mL	1	
19-APR-2011	05:23	NS	MGP051AA 1103202 A1D080404-7 1	C-000008.	909.26 mL	20 mL	1	
19-APR-2011	06:29	NS	MGP081AA 1103202 A1D080404-9 1	C-000009.	992.33 mL	20 mL	1	mm 4/21/11
19-APR-2011	07:34	NS	STD_05 10GCSV0524 8330 100-200	C-000010.	0 g	0 mL	1	
19-APR-2011	08:40	NS	STD_MRL 11GCSV0086 8330 5-20ng	C-000011.	0 g	0 mL	1	
19-APR-2011	09:46	NS	MGXKL1AA 1103098 G1D130000-98	C-000012.	1000 mL	20 mL	1	
19-APR-2011	10:51	NS	MGP5R2AF 1103098 A1D080416-7 2	C-000013.	936.66 mL	20 mL	2	
19-APR-2011	11:57	NS	MGV4M1AA 1102095 G1D120000-95	C-000014.	1000 mL	20 mL	1	
19-APR-2011	13:02	NS	MGNDC1AC 1102095 A1D070414-9 1	C-000015.	942.8 mL	20 mL	1	
19-APR-2011	14:07	NS	MGNDG1AA 1102095 A1D070414-11	C-000016.	1018.2 mL	20 mL	1	
19-APR-2011	15:12	NS	STD_05 10GCSV0524 8330 100-200	C-000017.	0 g	0 mL	1	
19-APR-2011	16:18	NS	STD_MRL 11GCSV0086 8330 5-20ng	C-000018.	0 g	0 mL	1	
19-APR-2011	17:23	NS	MGX0X1AA 1103202 G1D130000-202	C-000019.	1000 mL	20 mL	1	
19-APR-2011	18:29	NS	MGP011AA 1103202 A1D080404-4 1	C-000020.	837.26 mL	20 mL	1	
19-APR-2011	19:35	NS	MGP021AA 1103202 A1D080404-5 1	C-000021.	966.73 mL	20 mL	1	
19-APR-2011	20:40	NS	MGP051AA 1103202 A1D080404-7 1	C-000022.	909.26 mL	20 mL	1	
19-APR-2011	21:45	NS	QC CHECK	C-000023.	1000 mL	20 mL	1	
19-APR-2011	22:51	NS	MGP081AA 1103202 A1D080404-9 1	C-000024.	992.33 mL	20 mL	1	
19-APR-2011	23:57	NS	MGLJC1AA 1101074 A1D060428-3 1	C-000025.	909.33 mL	20 mL	1	
20-APR-2011	01:02	NS	MGLJD1AA 1101074 A1D060428-4 1	C-000026.	863.58 mL	20 mL	1	
20-APR-2011	02:07	NS	STD_05 10GCSV0524 8330 100-200	C-000027.	0 g	0 mL	1	
20-APR-2011	03:13	NS	STD_MRL 11GCSV0086 8330 5-20ng	C-000028.	0 g	0 mL	1	
20-APR-2011	04:18	NS	MGP5R1AF 1103098 A1D080416-7 1	C-000029.	936.66 mL	20 mL	1	
20-APR-2011	05:24	NS	MG4TL1AA 1105341 G1D150000-341	C-000030.	1000 mL	20 mL	1	
20-APR-2011	06:29	NS	MG3W21AA 1105341 G1D140599-1 1	C-000031.	981.56 mL	20 mL	1	
20-APR-2011	07:34	NS	STD_05 10GCSV0524 8330 100-200	C-000032.	0 g	0 mL	1	
20-APR-2011	08:40	NS	STD_MRL 11GCSV0086 8330 5-20ng	C-000033.	0 g	0 mL	1	

Comments on "Draft" Study of
Results of Groundwater Sampling for Major Cations and Anions, Trace Elements, Nutrients, Organic Chemicals, And Isotopes of Hydrogen and Oxygen at RVAAP-66 Facility-Wide Groundwater, April 2011
Ravenna Army Ammunition Plant, Ravenna, Ohio
Dated 29 May 2012

Comments prepared by: Jay Wyss, USACE, Louisville District
Mark W. Nichter, USACE, Louisville District
Comments dated: 12 September 2012
Responses prepared by: _____
Responses dated: _____

No	Page	Line	Comment	Response
			Louisville District USACE (Jay Wyss)	
1	10		Within the report the results were changed to match the order of the scope. Suggest that the executive summary be changed to match also.	Agreed. Executive summary updated.
2	16	328	This diagram is cluttered. Suggest using an 11x17 page or reducing the clutter such as reducing text size.	Stet. Although we agree with you in concept, the additional work involved in resizing the figure and (or) the font size will require significant time. The figure is for reference only, does not introduce any new or interpretive work (other than the flow lines), and reproduces information found in many other documents. Therefore, we left it as is.
3	17	329	It states that the well screens are 5 to 10-ft but on the table they all appear to be at least 10ft and one is even 15ft. Revise the text and/or Table 2 accordingly.	Agreed. Text on page 17 revised to indicate "10- to 15-ft screens."
4	29	555	The Line type of the plots do not appear to match the line type presented in the legend. Revise accordingly.	Agreed. Line symbol in the explanation for figure 4B modified to match that in the figure.
5	33	622	Missing the word "to" between "assumed" and "lie." Revise accordingly.	Agreed. Word inserted.

No	Page	Line	Comment	Response
6	44	858	The date format changes from yyyy-mm-dd and mm-dd-yyyy? Maintain consistency in written format if possible.	Agreed. Although the date format is directly from the reference itself, the reference for IAEA, 2009 modified to reflect same date format used throughout the report (MM-DD-YYYY).
Louisville District USACE (Mark Nichter, PG)				
7	All		Universal Comment: The use of "Contaminants of Concern (COCs)" in this document may be inappropriate. A COC is a constituent or contaminant that has already been screened against all applicable screening criteria, facility-wide clean up goals, and has been shown to have the ability to impact potential human and/or ecological receptors. Unless the USGS has already performed these studies, then perhaps a more appropriate term to use in this groundwater study is "Contaminant of Potential Concern (COPC)." As such, the USACE recommends all references to COCs in this document be changed to COPCs.	Agreed. COPC adopted throughout text.
8	12	263	Remove unnecessary bracket ")" in (USACE, 2004).	Agreed. Bracket removed.
9	22	Table 10	Add definition of "RPD" as a footnote immediately below Table 10.	Stet. In similar format as all other tables in this document (and all USGS reports, in general), definitions of acronyms or units of measurement are provided in the subheader, as it already is here.
10	22	431	The word "measured" appears twice in this sentence. Is this correct? Please revise if applicable and appropriate.	Agreed. It was an error. Second "measured" removed.
11	23	436	The acronym "PHREEQC" is used in this sentence; however, is not defined in the text or on the list of acronyms. Please add definition here and on list of acronyms (if applicable and appropriate).	Stet. PHREEQC is the name for a computer code and not sure that it needs to be spelled out, similar in usage to FORTRAN or MODFLOW.

No	Page	Line	Comment	Response
12	24	468-470	This sentence indicates that Load Line 1 has greater portions of sulfate plus chloride, and lesser proportions of carbonate plus bicarbonate. This does not appear to be explained on page 24 or anywhere else in the document. Please discuss what it means and/or why it might occur in Load Line 1 and not at the other AOCs. Include discussion in document.	Stet. It's merely an observation that Load Line 1 has greater portions of sulfate plus chloride, and lesser proportions of carbonate plus bicarbonate. Without knowing the specific history of activities at the load line or other AOCs it's difficult to surmise why chemical differences exist in groundwater beneath them and any statement would be pure speculation.
13	28	552-554	This sentence indicates that Load Line 4 exhibits the most negative (depleted) isotope ratios of hydrogen and oxygen. Does this mean that Load Line 4 exhibits lower potential for groundwater recharge? Please explain what this indicates. Provide an explanation or discussion in the document.	Isotopes do not provide information regarding potential for groundwater recharge. As noted on page 38… "As for the redox conditions described above, the isotopic signature of groundwater from well LL4MW-197 was different from other samples; however, chemical data provided in this report do not reveal any potential causes for this difference. Additional sampling of these isotopes in surface water and groundwater could help refine our understanding of recharge processes, groundwater/surface water interaction, isotope fractionation, and sources of water to wells."
14	30	563-566, and Table 12	The USGS's discussion pertaining to the comparison of analytical results is confusing. One part of the sentence discusses "concentrations below the reporting limit" and the other portion of the sentence discusses actual "estimated values." Based on the results presented on Table 12, it appears the laboratory used for the "traditional purge" samples was not able to provide an estimated value below the laboratory reporting limit (similar to the lab used for the micro purge samples). This makes it difficult to actually compare the results of the micro purge vs. traditional purge study. Comments/Suggestions?	Agreed, but we're just describing exactly what the lab provided to us. Some of the values are given as "U" (less than reporting limit listed); whereas other values are given as "J" (an estimated value that is typically less than the reporting limit). No comparisons are made; we were only investigating whether the bis(2-ethylhexyl)phthalate could be an artifact of the micropurge sampling methods and the results were inconclusive. As noted in the Discussion and Conclusion (p. 38) and summarized in the Executive Summary… "Additional sampling done as part of this study was insufficient to identify the source of bis(2-ethylhexyl)phthalate; however, because plastics were never used to a great degree at this facility, it is reasonable to conclude that elevated concentrations are the result of sampling, processing, or laboratory analyses."
15	31	583	Include the "(ODNR)" acronym behind the "Ohio Department of Natural Resources" portion of the sentence. Also include this information on the Acronym list.	Agreed. ODNR acronym added.

RVAAP

FWGWMP

USGS Responses to Ohio EPA Comment Response Table
(September 27, 2012)

Results of Groundwater Sampling for Major Cations and Anions, Trace Elements, Nutrients, Organic Chemicals, and Isotopes of Hydrogen and Oxygen at RVAAP-66 Facility Wide Groundwater, April 2011

Prepared by USGS

No.	Location	Comment	Recommendation	Response
1	General	Ohio EPA could not locate rationale for well selection and "selected" constituents.	Please discuss.	Rationale for well selection is provided on page 15: *"The selection of the 42 wells was based on a rotational sampling schedule of wells at RVAAP and regulatory requirements of the FWGWMP. To address objectives of this report, the USGS performed additional chemical analysis on samples from a subset of 19 of the 42 wells that appeared to lie on or along shallow, localized flow paths based on a 2005 bedrock potentiometric-surface map from Ohio Department of Natural Resources (2005; figure 1) and potentiometric-surface maps provided by the contractor in unpublished internal reports."* Since we were working alongside the groundwater

				monitoring contractor, we were limited to the wells that they were sampling during the April 2009 sampling round. "Selected constituents" were defined on page 12. *"Even though analyses of most of the constituents listed in table 1 were done at one time or another on groundwater from more than 240 wells at RVAAP, not all samples were analyzed for all constituents on the same date and by means of the same sampling or analytical procedure. The USACE was interested in obtaining a set of samples with full geochemical analysis of anions and cations and consistent techniques that could help define geochemical conditions in aquifers at the site."*
2	Page 26, Section 4.0, Line 489 and Page 38, Section 5.0, Line 747	Section 5.0 indicates that all ground water samples, except those results from well LL4MW-197, were characterized as mixed (oxic-anoxic) with the primary redox processes being related to oxygen, iron,	Please provide a brief explanation concerning the oxic conditions at well LL4MW-197.	Oxic conditions were determined through the spreadsheet program identified in the text. Examination of table 11 reveals that high nitrate and

		manganese, and sulfate reduction. However, results from well (unconsolidated materials) LL4MW-197 indicated "oxic" conditions, as well as reporting the most negative $\delta^{2}H$ (-78.35‰) and $\delta^{18}O$ (-11.81‰) results (Table 9). It is unclear why this well point located in Load Line 4 would reflect more "oxic" characteristics.		low manganese and iron indicated oxic conditions. As you note, this same sample had the most depleted oxygen and hydrogen isotope ratios. We will insert the explanation above when describing the conditions at the well; however, the reason(s) for the oxic conditions (other than geochemical results) and isotope results remain unclear. On page 38, we state… *"chemical data provided in this report do not reveal any potential causes for this difference. Additional sampling of these isotopes in surface water and groundwater could help refine our understanding of recharge processes, groundwater/surface water interaction, isotope fractionation, and sources of water to wells."*
3	General,	Ohio EPA could not locate a	Please discuss.	We did not originally

	Table 13, Page 36; Page 35-37	detailed discussion regarding rationale and purpose for conducting and comparing traditional sampling and micropurging samples. How were the constituents selected? Why wasn't arsenic included? Specific conclusions? Applicability at RVAAP? Recommendations?		intend on comparing sampling methods; however, after the receipt of the analytical data, it became apparent that there were differences in the results and we investigated whether there was a systematic bias to either sampling method. Selection of constituents described in response to item 1, above. Other than the two wells sampled by traditional methods, arsenic was not analyzed by USGS because the contractor already was doing so. Specific conclusions, applicability, and recommendations (if any) are all included in pages 41 through 44.

				However, it's important to recognize that USGS avoids making recommendations. Instead, we try to provide you, the decision-maker, with the information needed to make the best decisions.
4	Page 38, Section 5.0, Line 747	Section 5.0 discusses the development of remedial strategies based on the geochemical evaluation of the ground water discussed in this study. It is unclear whether remedial strategies were to be included as a part of the overall geochemical evaluation and how they could be implemented.	Please provide a brief explanation concerning the discussion of remedial strategies: if they were to be included in this submittal and how they could be implemented.	The overall purpose of this study was to provide additional characterization to support and improve the groundwater conceptual model. More specifically, the objective is to better understand groundwater chemistry at the RVAAP in relation to recharge and discharge characteristics, evolution of water along flowpaths, and the geochemical

				environments through which contaminants may be moving. Remediation strategies weren't proposed as part of this evaluation; however, these and all other geochemical and hydrologic data should be considered when other entities make the final decision(s) on how remediation should proceed. If the statements on page 38 regarding remediation cause you concern, we can remove them in the final version, but we feel that it strengthens the discussion.
5	Page 41, Section 5.0, Line 787 and Page 42, Section 5.0,	Turbidity has been a long-standing issue at RVAAP. Based on comparison of the results of micro-purge and traditional sampling techniques, should	Please provide a brief explanation concerning which sampling technique would provide a more representative result on a well-by-well basis.	As noted above, USGS avoids making recommendations. Well design, development, and

	Line 825	FWGWMP wells be further evaluated to determine the best sampling technique for each individual well? Could a comparison of the individual Relative Percent Differences (RPDs) aid in determining the best sampling technique for the well (traditional = potential high bias versus micro-purge = potential low bias)? Could well design and/or well development play a key role in turbidity?		maintenance (plus aquifer conditions) all play a role in turbidity of pumped groundwaters.
6	Page 30, Section 4.2, Line 571 and Page 43, Section 5.0, Line 839	Table 12 reports the following bis(2-ethylhexyl)phthalate results from the two wells selected for micro-purge (MP) versus traditional (T) sampling comparison. The results were (J, estimated; B, found in blank; U, less than reporting limit listed): <u>LL1MW-084:</u> 1.4 µg/L JB (MP)/10 µg/L U (T) <u>LL1MW-198:</u> 2.2 µg/L J (MP)/ 10 µg/L U (T) <u>Field Blank (B):</u> 2.2 µg/L JB (T)	Please provide a brief discussion concerning whether well construction materials could be contributing to the presence of bis(2-ethylhexyl)phthalate in ground water beneath the facility. Please provide a brief discussion concerning the objectives of the micro-purge versus traditional sampling method have been accomplished.	There are at least 20 different sources of bis(2-ethylhexyl)phthalate currently in use during groundwater monitoring and sampling (including the well casing). We did not intend on identifying the specific source, just whether micropurge sampling could be creating bias. Page 43 states that the results were inconclusive based on

		Section 5.0 indicates that the source of bis(2-ethylhexyl)phthalate may be from sampling, processing, or lab analysis. However, could this parameter also be coming from the PVC-constructed well itself? Second, this evaluation also explored whether micro-purging sampling methods could eliminate the traditional sampling technique as the cause of elevated concentrations of bis(2-ethylhexyl)phthalate in ground water samples. It is unclear whether this objective has been met.		two samples. As noted above, our original objectives did not include sampling method comparison, but it evolved into a comparison based on examination of analytical results. Based on discussions with USACE, we recently learned that the USACE's current groundwater monitoring Contractor (EQM) has now installed a stainless steel-constructed groundwater monitoring well at the RVAAP facility. The purpose of the new well is to assess whether PVC-constructed wells may be a source of bis(2-ethylhexyl)phthalate in groundwater samples. Results of this study

				will be published in the applicable groundwater monitoring report document(s).
7	Page 42	Report states “wells with turbidity greater than 25 NTUs may indicate failure of the well construction or a poorly developed well. 16 of 18 turbidity values were greater than 25 NTU at the time of sampling.” Based on the above, the report questions the condition of some of the wells, but falls short of any recommendation.	High turbidity values have been an ongoing issue with some of the wells. Please discuss in further detail.	The conclusions describe the problems with elevated turbidity and we don’t know of what else there is to say. Again, USGS avoids recommendations.

8	Page 43	Report states "…examination of constituent concentrations along groundwater-flow paths can be a valuable tool in assessing the potential fate of contaminants and off-site contaminant migration."	Please discuss in more detail.	This level of detail is beyond the original scope of this study, but examination of chemistry along flow paths can help confirm our conceptualization of groundwater flow directions, identify source areas of contaminants, help describe geochemical changes as water moves beneath the AOC, help determine if contaminant concentrations are increasing or decreasing downgradient, etc.
9	Page 43 (and No. 2 above)	Report summarizes that micropurging has limitations and data may not be truly accurate.	Please address these limitations in more detail and how it may affect the sampling results at RVAAAP. Is reference data available that compares different sampling techniques to each other? Data that will identify variabilities? Conclusions?	Disagree. The report does not summarize that "micropurge has limitations and data may not be truly accurate." On page 41 and onward, we identify three issues that may explain

			Recommendations?	differences in sampling method results… *"1. elevation or decrease in constituent concentrations due to a significant rainfall event, 2. elevated turbidity in some of the micropurge samples, and 3. groundwater contributions of from the same aquifer may differ between small-volume micropurge sampling and relatively large volume traditional-purge sampling. "* The Yeskis and Zavala (2002) reference is included in the subsequent text.
10	General; Re: remediation strategies	Report (USGS) indicates many of the components can be used for groundwater remediation strategies. It is unclear if USACE agrees.	Please discuss and specify.	As noted in our response to item 4, our intent was not to describe remediation strategies, but to use these and other data towards understanding of geochemistry, which may lead to establishing strategies that may be most effective.