National Nuclear Security Administration
Sandia Site Office
P.O. Box 5400
Albuquerque, New Mexico 87185-5400

ENTERED

JUN 1 8 2009

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

JUN 2009

Mr. James Bearzi, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Road East, Bldg. 1
Santa Fe, NM 87505

Dear Mr. Bearzi:

On behalf of the U. S. Department of Energy/National Nuclear Security Administration (DOE/NNSA), and Sandia Corporation (Sandia), DOE/NNSA is submitting the June 2009 Consolidated Quarterly Report for the Environmental Restoration Project that addresses all quarterly reporting (from February through April 2009) required under the Hazardous and Solid Waste Amendments (HSWA) Module of the Resource Conservation and Recovery Act (RCRA) Permit, the Compliance Order on Consent and the Chemical Waste Landfill (CWL) Closure Plan for Sandia National Laboratories/New Mexico (SNL/NM), EPA No. 5890110518.

Should you have any questions regarding this project quarterly report please contact me at (505) 845-6036, or Joe Estrada of my staff at (505) 845-5326. For perchlorate or CWL groundwater related items, please contact John Gould, also of my staff, at (505) 854-6089.

Sincerely,

Kimberly A. Davis
Acting Manager

Enclosure

cc w/enclosure:
W. Moats, NMED-HWB (via Certified Mail)
L. King, EPA, Region 6 (via Certified Mail)
T. Skibitski, NMED-OB
B. Birch, NMED-OB
J. Lehr, NA-56, HQ/FORS
J. Gould, SSO
Zimmerman Library, UNM
SNL ES&H Records Center, SNL/NM, Org.6765, MS-0718

JUN 1 8 2009

cc w/o enclosure:
T. Longo, NA-56, HQ/GTN
A. Blumberg, SNL/NM, Org. 11100, MS-0141
F. Nimick, SNL/NM, Org. 6790, MS-0701
D. Miller, SNL/NM, Org 6765, MS-0718
T. Cooper, SNL/NM, Org. 4133, MS-1042
J. Cochran, SNL/NM, Org. 6765, MS-0719
M. Skelly, SNL/NM, Org 6765, MS-0718
C. Daniel, SNL/NM, Org. 10677, MS-0718

AOP 95-45, 06

CERTIFICATION STATEMENT FOR APPROVAL AND FINAL RELEASE OF DOCUMENTS

Document title: **Environmental Restoration Project Consolidated Quarterly Report, June 2009**

Document author: **John Cochran, 06765**

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

Signature: Francis B. Nimick — 6/10/09 Date

Francis B. Nimick
Deputy to the Director
Nuclear Energy & Global Security Technologies
Center 6700
Sandia National Laboratories/New Mexico
Albuquerque, New Mexico 87185
Operator

and

Signature: Kimberly A. Davis — 6/17/09 Date

Kimberly A. Davis
Acting Manager
U.S. Department of Energy
National Nuclear Security Administration
Sandia Site Office
Owner and Co-Operator

Sandia National Laboratories, New Mexico (SNL/NM)

Environmental Restoration Project

A Department of Energy Environmental Cleanup Program

CONSOLIDATED
Quarterly Report

February-March-April

June 2009

United States Department of Energy
Sandia Site Office

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

CONSOLIDATED
QUARTERLY REPORT

June 2009

SANDIA NATIONAL LABORATORIES/NEW MEXICO (SNL/NM)

ENVIRONMENTAL RESTORATION PROJECT

DEPARTMENT OF ENERGY (DOE): SANDIA SITE OFFICE
CONTRACTOR: SANDIA CORPORATION
PROJECT MANAGER: John Cochran

NUMBER OF POTENTIAL RELEASE SITES SUBJECT TO THIS PERMIT: 36
SUSPECT WASTE: radionuclides, metals, organics, and explosives.

OVERVIEW

This Consolidated Quarterly Report for the Sandia National Laboratories Environmental Project addresses all quarterly reporting requirements pertaining to the Hazardous and Solid Waste Amendments (HSWA) Module of the Resource Conservation and Recovery Act (RCRA) Permit, the Compliance Order on Consent (Consent Order), and the Chemical Waste Landfill (CWL) Closure Plan. The following entities and reporting periods are addressed in these Sections:

SECTION I

Environmental Restoration Project Quarterly Report, reporting period: February - April 2009

SECTION II

Chemical Waste Landfill Progress Report, reporting period: February - April 2009

SECTION III

Perchlorate Screening Semiannual Report, reporting period: October 2008 - March 2009

Environmental Restoration Project Consolidated Quarterly Report

Section I

Environmental Restoration Project Quarterly Report

June 2009

United States Department of Energy
Sandia Site Office

Sandia is a multiprogram laboratory managed and operated by Sandia Corporation, a wholly-owned subsidiary of Lockheed Martin Corporation, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000

Table of Contents

Acronyms ii

SECTION I: ENVIRONMENTAL RESTORATION PROJECT QUARTERLY REPORT 1

1.0 Introduction 1

2.0 Work Completed in This Quarter 1

2.1 Mixed Waste Landfill (MWL) 1

MWL Documents submitted to NMED pending regulatory review and approval 1

2.2 Project Management Site Closure 2

Permit Modification Request submitted in March 2006 2

Permit Modification Request submitted in January 2008 2

2.3 Site-Wide Hydrogeologic Characterization 2

TA-3/5 Groundwater 2

Burn Site Groundwater (BSGW) 3

Tijeras Arroyo Groundwater (TAG) 3

Mixed Waste Landfill Groundwater (MWL) 3

Chemical Waste Landfill Groundwater (CWL) 3

Groundwater Documents submitted to the NMED pending regulatory review and approval 3

2.4 Corrective Action Management Unit (CAMU) 4

CAMU Post-Closure Care Operations 4

CAMU Waste Management Activities 4

CAMU Regulatory Activities 5

2.5 Suspected Solid Waste Management Unit 5

Long Term Environmental Stewardship (LTES) Site 1, Cable Debris Site 5

Acronyms

AOC	Area of concern
BSGW	Burn Site Groundwater
CAC	Corrective Action Complete
CAMU	Corrective Action Management Unit
CME	Corrective Measures Evaluation
CMI	Corrective Measures Implementation
CWL	Chemical Waste Landfill
DOE	United States Department of Energy
ER	Environmental Restoration Project
GWPP	Groundwater Protection Program
HSWA	Hazardous and Solid Waste Amendment
LTES	Long Term Environmental Stewardship
LTMMP	Long-term Monitoring and Maintenance Plan
MW	Monitoring well
BW	Background monitoring well
MWL	Mixed Waste Landfill
NMED	New Mexico Environment Department
NOD	Notice of Deficiency, Notice of Disapproval
PPE	Personal Protective Equipment
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Amendment
SNL	Sandia National Laboratories
SVOC	Semivolatile organic compounds
SWMU	Solid Waste Management Unit
TA	Technical Area
TAG	Tijeras Arroyo Groundwater
VOC	volatile organic compounds
VZMS	Vadose Zone Monitoring System

SECTION I: ENVIRONMENTAL RESTORATION PROJECT QUARTERLY REPORT

1.0 Introduction

This report discusses ongoing corrective actions for the Sandia National Laboratories (SNL) Environmental Restoration (ER) Project. The status of regulatory closure activities, specifically permit modifications for final Corrective Action Complete approval, and status of documents pending regulatory approval, are outlined below. In this Section, the Quarter refers to the February through April 2009 quarterly reporting period.

2.0 Work Completed in This Quarter

2.1 Mixed Waste Landfill (MWL)

- On February 18, 2009, routine neutron moisture logging of the MWL vadose zone was conducted to continue to obtain baseline data regarding moisture content profiles with depth beneath the landfill.
- MWL Groundwater monitoring results for fiscal year 2008 have been compiled and summarized into the MWL Annual Groundwater Monitoring Report and the GWPP Annual Report. These two annual monitoring reports are anticipated to be published in the spring and summer of 2009, respectively.
- In April 2009, quarterly groundwater sampling took place at four MWL monitoring wells (MWL-BW2, -MW7, -MW8, and -MW9) and annual sampling at three MWL monitoring wells (MWL-MW4, -MW5, -MW6) were sampled for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals, nitrate plus nitrite, major anions, total alkalinity, total dissolved solids, radionuclides by gamma spectroscopy, gross alpha and beta, and tritium. Monitoring wells MWL-MW7, -MW8, and -MW9 were also sampled for perchlorate, concluding four consecutive sampling events for this analyte. Sampling will continue quarterly for MWL-BW2, -MW7, -MW8, and -MW9 until each well has been sampled for eight consecutive quarters. The results will be reported in next year's SNL/NM MWL Annual Groundwater Monitoring Report and the SNL/NM Groundwater Protection Program (GWPP) Annual Report (both anticipated to be published in the spring of 2010).
- DOE/Sandia awarded the contract to the EDi Team on March 20 for the installation of the evapotranspirative (ET) vegetative soil cover with a bio-intrusion barrier as specified in the approved CMI Plan. Anticipated start date for the installation of the cover is mid-May, after Sandia approval of the Contract Specific Safety Plan and completion of all mobilization tasks.
- DOE/Sandia notified NMED of the estimated start date for ET Cover field work on April 10.

<u>MWL Documents submitted to NMED pending regulatory review and approval</u>

- The Long-term Monitoring and Maintenance Plan (LTMMP) was submitted September 2007 and the extended NMED public review and comment period ended January 31, 2008.

2.2 Project Management Site Closure

Operable units with only regulatory and administrative closure activities remaining will be managed under project management. Two permit modification requests are currently in progress with the New Mexico Environment Department (NMED) and are outlined below. The sites in these two permit modification requests are expected to be discussed as part of the NMED comment resolution process for the renewal of the SNL Resource Conservation and Recovery Amendment (RCRA Permit). Discussions on these sites are expected to be held in June.

Permit Modification Request submitted in March 2006

- Twenty-six sites were submitted to NMED for the final determination of Corrective Action Complete (CAC) in March 2006. The sites included nineteen SWMUs, and seven AOCs. The NMED issued a Notice of Public Comment Period and Intent to Approve a Class 3 Permit Modification of the RCRA Permit for Sandia National Laboratories for these 26 sites on December 10, 2007. The NMED public review and comment period ended on February 8, 2008. The SWMUs and AOCs included in this permit modification request are listed below.

  SWMUs – 4, 5, 46, 49, 52, 68, 91, 101, 116, 138, 140, 147, 149, 150, 154, 161, 196, 233, 234

  AOCs – 1090, 1094, 1095, 1114, 1115, 1116, and 1117.

Permit Modification Request submitted in January 2008

- Five sites were submitted for the final regulatory determination of CAC in a permit modification request in January 2008. The DOE/Sandia public review and comment period ended on March 14, 2008. DOE/Sandia received no public comments. This permit modification included all remaining SNL ER sites with the exception of the three active sites (SWMUs 83, 84, and 240), three Groundwater Investigation sites (Tijeras Arroyo, Technical Area V, and Burn Site), and the Mixed Waste Landfill (SWMU 76), which is pending Corrective Measure Implementation. The MWL is addressed separately in section 2.1 of this Section of this ER Quarterly report. The four SWMUs and one AOC included in the January 2008 permit modification request are listed below.

  SWMUs – 8, 28-2, 58, and 105

  AOC – 1101

2.3 Site-Wide Hydrogeologic Characterization

TA-3/5 Groundwater

- Groundwater sampling was completed in February 2009. Results will be discussed in the SNL GWPP Annual Groundwater Monitoring Report.

- In April 2009, DOE/Sandia submitted a Response to NMED's Notice of Disapproval (NOD) on the TA-V Corrective Measures Evaluation Report (submitted in July 2005) and met with the NMED to resolve outstanding issues with the TA-V investigation.

Burn Site Groundwater (BSGW)

- Groundwater sampling was completed in February and March 2009. Results of perchlorate analyses are discussed in Section III, and other analytical results will be discussed in the SNL GWPP Annual Groundwater Monitoring Report.
- In April 2009, DOE/Sandia received a letter from NMED entitled "Perchlorate Contamination in Groundwater," requiring characterization of the nature and extent of perchlorate contamination at or near the Burn Site. DOE/Sandia have requested to meet with the NMED to discuss further characterization requirements.

Tijeras Arroyo Groundwater (TAG)

- No groundwater sampling was performed during this reporting period.
- In February 2009, DOE/Sandia submitted a Response to NMED's Notice of Disapproval (NOD) on the TAG Continuing Investigation Report (submitted in November 2005).

Mixed Waste Landfill Groundwater (MWL)

- Groundwater sampling was performed in April 2009. Results from the 2009 MWL sampling events will be discussed in the 2010 MWL Annual Groundwater Monitoring Report.

Chemical Waste Landfill Groundwater (CWL)

- CWL semi-annual groundwater monitoring activities were performed in April 2009. Analytical results associated with the April 2009 sampling event are pending receipt by SNL/NM. The activities associated with the groundwater monitoring will be summarized in the next (September 2009) ER Quarterly Progress Report.

Groundwater Documents submitted to the NMED pending regulatory review and approval

- Technical Area V Groundwater Corrective Measure Evaluation (CME) Work Plan, submitted April 2004.

- CME Report for Tijeras Arroyo Groundwater, submitted August 2005.

- Burn Site GW (BSGW) Interim Measures Work Plan, submitted May 2005.

- BSGW Current Conceptual Model of Groundwater Flow and Contaminant Transport, submitted April 2008.

- BSGW CME Work Plan, submitted April 2008.

- Response to NMED's "Notice of Disapproval: Tijeras Arroyo Groundwater Investigation Report, November 2005, Dated August 2008; submitted February 2009.

- Response to NMED's "Notice of Disapproval: Corrective Measures Evaluation Report for Technical Area V Groundwater, July 2005," submitted April 2009.

2.4 Corrective Action Management Unit (CAMU)

CAMU Post-Closure Care Operations

- Vadose-zone monitoring, leachate removal, and post-closure inspections continued as required in the permit. Activities included the following:

  - Weekly pumping of leachate from the leachate collection and removal system.
  - Weekly inspection of the less-than-90-day area.
  - Quarterly inspection of the site (March 2009), including containment cell cover, storm water diversion structures, security fences, gates, signs, and benchmarks. Approximately 12 four-wing saltbush plants and 60 snakeweed shrubs were identified growing on the cover. These plants can develop extensive root systems that could damage the high-density polyethylene cover. They were removed on March 31, 2009. A sign with updated contact information was installed at the waste accumulation area on April 29, 2009.
  - Quarterly monitoring of the Vadose Zone Monitoring System (VZMS) was conducted in March 2009. Results will be posted in the annual CAMU report.
  - Waste management associated with the leachate collection was conducted (see below).
  - Composite leachate sampling for waste characterization was conducted on February 16, 2009 and April 29, 2009.

CAMU Waste Management Activities

For this Quarter (February 2009 through April 2009)

- Waste stored on site at the beginning of this period:
  - 109 gallons of leachate.
  - 3 lb PPE.
- Waste generated on-site during the period:
  - 160 gallons of leachate.
  - 4 gallons of rinsate.
  - 7 lbs PPE, paper wipes, plastic drum pump.
- Waste removed from site by the Hazardous Waste Management Facility:
  - 145 gallons of leachate on February 18, 2009
  - 2 gallons of rinsate on February 18, 2009.
  - 5 lbs PPE, paper wipes, plastic drum pump on February 18, 2009.
- Waste remaining on site at the end of this period:
  - 124 gallons of leachate.
  - 2 gallons of rinsate.
  - 5 1bs PPE, paper wipes, plastic drum pump.

CAMU Regulatory Activities

- There were no regulatory activities during this quarter.

2.5 Suspected Solid Waste Management Unit

Long Term Environmental Stewardship (LTES) Site 1, Cable Debris Site

- The Investigation Report and Proposal for Corrective Action Complete for LTES Site 1/Cable Debris Site was delivered to NMED on March 30, 2009.

Environmental Restoration Project Consolidated Quarterly Report

Section II

Chemical Waste Landfill Quarterly Closure Progress Report

June 2009

United States Department of Energy
Sandia Site Office

Sandia is a multiprogram laboratory managed and operated by Sandia Corporation, a wholly-owned subsidiary of Lockheed Martin Corporation, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000

SECTION II. CHEMICAL WASTE LANDFILL QUARTERLY PROGRESS REPORT

This Sandia National Laboratories/New Mexico (SNL/NM) Chemical Waste Landfill (CWL) Quarterly Closure Progress Report has been prepared pursuant to the CWL Final Closure Plan and Post-closure Permit Application (Closure Plan) (SNL/NM December 1992). This section documents activities at the CWL for the time period of February through April 2009.

1.0 Introduction

All voluntary corrective measures (VCMs) activities for the CWL have been completed. The CWL Landfill Excavation (LE) VCM Final Report was submitted to the NMED in April 2003 (SNL/NM April 2003) and approved by the NMED in December 2003 (Moats December 2003). The Site Operational Boundary Closure Addendum to the LE VCM Final Report was submitted to the NMED in August 2005 (SNL/NM August 2005) and approved by the NMED on October 25, 2005 (Bearzi October 2005). With the submittal of the Waste Management Addendum to the LE VCM Final Report in the February 22, 2006 CWL Quarterly Closure Progress Report (SNL/NM February 2006), as Appendix B, all LE VCM regulatory deliverables have been submitted. With the completion of the VCMs, technical meetings will be held on an as-needed basis. The public will continue to be informed of significant events through the Environmental Restoration (ER) Project public meeting process.

Installation of the cover as an interim measure was requested in April 2004 (SNL/NM April 2004) and approved with conditions in September 2004 (Kieling September 2004); the cover was completed in September 2005 in accordance with the conditions of approval. All field activities, with the exception of long-term monitoring, have been completed at the CWL.

2.0 Status of Closure

The Final Toxic Substances Control Act (TSCA) Closure Report documents the completion of all closure activities specified in the "Risk-Based Approval Request, 40 CFR 761.61(c) Risk-Based Method for Management of PCB [Polychlorinated Biphenyl] Materials" (SNL/NM October 2001), approved by the U.S. Environmental Protection Agency (EPA) in June 2002 (Cooke June 2002). The Final TSCA Closure Report was submitted to the EPA and NMED on November 2, 2006 (SNL/NM November 2006).

Upcoming CWL Closure Plan reporting activities include revising and submitting the Final Resource Conservation and Recovery Act (RCRA) Closure Report, to be submitted after NMED approval of the Corrective Measures Study (CMS) Report has been received. The Final RCRA Closure Report will document both the backfilling of the former CWL and installation of the cover.

On May 21, 2007, the NMED issued, for public comment, the draft post-closure care permit for the CWL. Also included in the public notices were the CMS Report and the Closure Plan amendment (changes to Chapter 12 revising the closure process). On July 19, 2007, DOE and Sandia responded in opposition to the issuance of the CWL post-closure care permit as drafted and offered a number of comments, the most important of which were related to groundwater and vadose zone monitoring. In addition, DOE and Sandia requested that a public hearing be scheduled to address these outstanding issues.

For this reporting period, DOE and Sandia continued supporting NMED on the post-closure care permitting process, including submittal of the CWL Closure Plan Amendment that addresses the replacement of wells MW-4 and BW-4A in early March. DOE/Sandia reviewed and provided final comments to NMED on the Revised Draft CWL Post-Closure Care Permit and Response to Comments and received a Draft Stipulation from NMED detailing remaining issues with the revised Draft CWL Post-Closure Care Permit from stakeholders (i.e., Citizen Action, Citizens for Alternatives to Radioactive Dumping, Concerned Citizens for Nuclear Safety) in late April. DOE/Sandia will review the Draft Stipulation and provide input to NMED in May in support of the CWL Post-Closure Care permitting process.

3.0 Water Monitoring Assessment

CWL semi-annual groundwater monitoring activities were performed in April 2009. Analytical results associated with the April 2009 sampling event are pending receipt by SNL/NM. The activities associated with the groundwater monitoring task will be summarized in the next (September 2009) ER Quarterly Progress Report.

No soil-gas sampling was performed at the CWL during this reporting period. Soil-gas sampling is not required under the Closure Plan.

4.0 Projected Activities for the Upcoming Quarter

Efforts to finalize negotiations and reach a settlement agreement or limit the scope of a possible public hearing on the CWL Post-Closure Care Permit are a high priority next quarter. DOE and Sandia will review the Draft Stipulation provided by NMED and meet with NMED and stakeholders as part of this ongoing effort.

5.0 References

Bearzi, J.P. (New Mexico Environment Department), October 2005. Letter to P. Wagner (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), “Notice of Approval: Chemical Waste Landfill Site Operational Boundary Closure Addendum to the Landfill Excavation Corrective Measure Final Report; August 2005, Sandia National Laboratories, NM5890110518, HWB-SNL-05-021.” October 25, 2005.

Cooke, G. (U.S. Environmental Protection Agency Region 6), June 2002. Letter to M.J. Zamorski (U.S. Department of Energy), “Approval of the TSCA Risk-Based Approach Request for the CWL.” June 26, 2002.

Kieling, J.E. (New Mexico Environment Department), December 2003. Letter to K.L. Boardman (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), “Chemical Waste Landfill Corrective Measures Study, May 2003, Sandia National Laboratories, NM5890110518, HWB-SNL-03-013 ” December 12, 2003.

Kieling, J.E. (New Mexico Environment Department), September 2004. Letter to

P. Wagner (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), "Approval With Conditions of the Landfill Cover Interim Measure at the Chemical Waste Landfill, Sandia National Laboratories, NM5890110518, HWB-SNL-03-013." September 22, 2004.

Moats, W.P. (New Mexico Environment Department), December 2003. Letter to K.L. Boardman (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), "Final Approval, Landfill Excavation Voluntary Corrective Measures, Final Report, April 2003, Sandia National Laboratories, NM5890110518 HWB-SNL-03-012." December 16, 2003.

Sandia National Laboratories/New Mexico (SNL/NM), December 1992. "The Chemical Waste Landfill Final Closure Plan and Postclosure Permit Application," Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), October 2001. "Risk-Based Approval Request, 40 CFR 761.61 (c) Risk-Based Method For Management of PCB Materials," Chemical Waste Landfill Remediation and Corrective Action Management Unit, Sandia National Laboratories, Albuquerque, New Mexico. October 24, 2001.

Sandia National Laboratories/New Mexico (SNL/NM), April 2003. "Chemical Waste Landfill – Landfill Excavation Voluntary Corrective Measure – Final Report," Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), April 2004. "Request for Approval to Install the Vegetative Soil Cover Presented in the RAP as an Interim Measure," Sandia National Laboratories, Albuquerque, New Mexico. April 19, 2004.

Sandia National Laboratories/New Mexico (SNL/NM), August 2005. "Chemical Waste Landfill Site Operational Boundary Closure Addendum to the Landfill Excavation Voluntary Corrective Measure Final Report," Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), February 2006. "Chemical Waste Landfill Quarterly Closure Progress Report," Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), November 2006. "Chemical Waste Landfill Toxic Substances Control Act Final Report." Sandia National Laboratories, Albuquerque, New Mexico. November 2, 2006.

Environmental Restoration Project Consolidated Quarterly Report

Section III

Perchlorate Screening Semiannual Monitoring Report Fourth Quarter of Calendar Year 2008 and First Quarter of Calendar Year 2009 (October 2008 through March 2009)

June 2009

United States Department of Energy
Sandia Site Office

Sandia is a multiprogram laboratory managed and operated by Sandia Corporation, a wholly-owned subsidiary of Lockheed Martin Corporation, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000

Executive Summary

Section IV.B of the Compliance Order on Consent (the Order), between the New Mexico Environment Department (NMED), the U.S. Department of Energy (DOE), and Sandia Corporation (Sandia) for Sandia National Laboratories/New Mexico (SNL/NM), effective on April 29, 2004, stipulates that a select group of groundwater monitoring wells be sampled for perchlorate at SNL/NM (NMED April 2004). This report summarizes the perchlorate screening monitoring completed during the fourth quarter of Calendar Year 2008 (CY2008) and the first quarter of CY2009 (October 2008 through March 2009) in response to the requirements of the Order.

During the fourth quarter of CY2008, groundwater samples were collected from MWL-BW2, MWL-MW7, MWL-MW8, and MWL-MW9; and during the first quarter of CY2009, groundwater samples were collected from CYN-MW6, MWL-BW2, MWL-MW7, MWL-MW8, and MWL-MW9.

CYN-MW6 is one of the seven wells in the Burn Site Groundwater monitoring well network. MWL-BW2 is the recently installed (January 2008) background well; and MWL-MW7, MWL-MW8, and MWL-MW9 are the recently installed (May 2008) downgradient wells at the Mixed Waste Landfill. The Order requires that new wells be sampled for perchlorate for a minimum of four quarters. During this reporting period MWL-MW7, MWL-MW8, and MWL-MW9 were sampled for the second and third times; MWL-BW2 was sampled for the third and fourth times; and CYN-MW6 was sampled for the twelfth time. All samples were submitted to General Engineering Laboratories (GEL) for perchlorate analysis using U.S. Environmental Protection Agency (EPA) Method 314.0 (EPA November 1999).

No perchlorate was detected in the environmental samples from MWL-BW2, MWL-MW7, MWL-MW8, and MWL-MW9 at a method detection limit of 4 micrograms per liter (μg/L). The environmental sample from CYN-MW6 revealed perchlorate at a concentration of 7.24 μg/L in March of 2009. The source for the perchlorate in the groundwater at CYN-MW6 is unknown although a natural source may be present. Because perchlorate concentrations in monitoring well CYN-MW6 have exceeded the screening level, DOE/Sandia initiated a negotiation process with the NMED (SNL/NM March 2007) to determine the frequency of continued monitoring. In November 2008, DOE/Sandia received approval from NMED to discontinue quarterly monitoring and proceed with semiannual sampling for perchlorate at CYN-MW6 and semiannual reporting of all perchlorate results (NMED November 2008).

TABLE OF CONTENTS

Section III: Perchlorate Screening Semiannual Monitoring Report 1

1.0 Introduction 1

2.0 Scope of Activities 3

3.0 Regulatory Criteria 5

4.0 Monitoring Results 6

5.0 Summary and Conclusions 10

6.0 References 13

List of Tables

Table 1. Current Perchlorate-Screening Monitoring-Well Network Fourth Quarter of CY2008 and First Quarter of CY2009 (October 2008 through March 2009) 3

Table 2. Sample Details for Fourth Quarter of CY2008 and First Quarter of CY2009 Perchlorate Sampling 5

Table 3. Summary of Perchlorate Screening Analytical Results for the Current Monitoring-Well Network, as of First Quarter CY2009 7

Table 4. Perchlorate Screening Groundwater Monitoring Field Water Quality Measurements, Fourth Quarter of CY2008 and First Quarter of CY2009. 12

List of Figures

Figure 1. Sandia National Laboratories New Mexico Current Perchlorate-Screening Monitoring-Well Network (October 2008 through March 2009) 2

Figure 2. Perchlorate Concentrations (μg/L) over Time in CYN-MW6 11

Appendices

Appendix A. Analytical Laboratory Certificates of Analysis for the Perchlorate Data.

Appendix B. Data validation Sample Findings Summary Sheets for the Perchlorate Data

Section III: Perchlorate Screening Semiannual Monitoring Report Fourth Quarter of Calendar Year 2008 and First Quarter of Calendar Year 2009 (October 2008 through March 2009)

1.0 Introduction

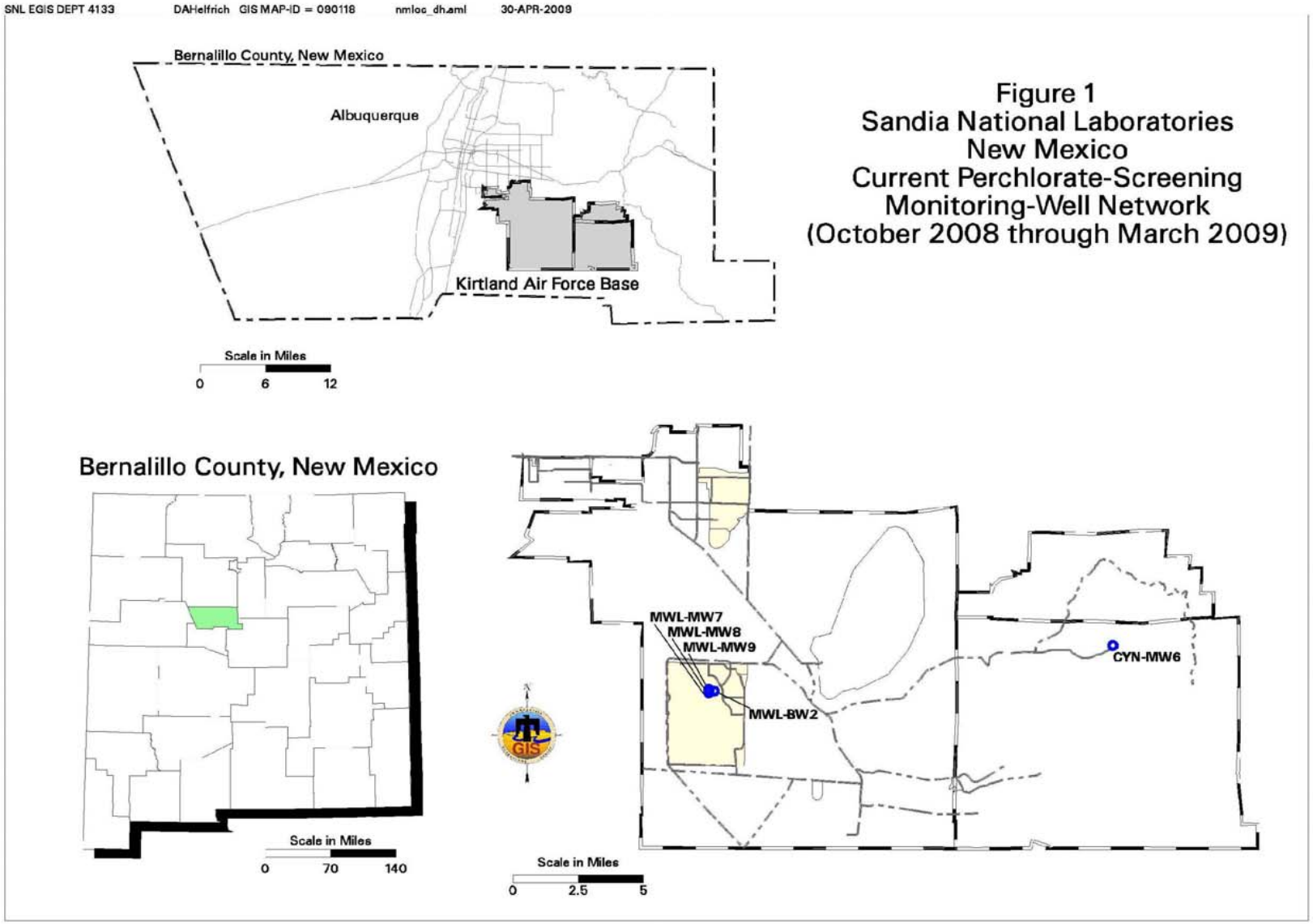
Section IV.B of the Compliance Order on Consent (the Order), between the New Mexico Environment Department (NMED), the U.S. Department of Energy (DOE), and Sandia Corporation (Sandia) for Sandia National Laboratories/New Mexico (SNL/NM), effective on April 29, 2004, stipulates that a select group of groundwater monitoring wells be sampled for perchlorate at SNL/NM (NMED April 2004). This report summarizes the perchlorate screening monitoring completed during the fourth quarter of Calendar Year 2008 (CY2008) and first quarter of CY2009 (October 2008 through March 2009) in response to the requirements of the Order. The outline of this report is based on the required elements of a "Periodic Monitoring Report" described in Section X.D. of the Order (NMED April 2004).

In November 2005 DOE/Sandia submitted a letter report on the status of perchlorate screening in groundwater at SNL/NM monitoring wells (SNL/NM November 2005). The purpose of that letter report was to summarize previous correspondence and sampling results, and to outline proposed future work to comply with NMED requirements for perchlorate screening in groundwater. Per the letter report, quarterly reports will be submitted for wells actively in the perchlorate-screening monitoring-well network. Based on NMED response (NMED January 2006), DOE/Sandia will submit each quarterly report within 90 days following the quarter that the data represent. In November 2008, DOE/Sandia received approval from NMED to discontinue quarterly reporting of perchlorate data and proceed to semiannual reporting (NMED November 2008).

This report is the twelfth to be submitted since the November 2005 letter report; the previous reports were submitted Fourth Quarter of Calendar Year 2005 through the Third Quarter of Calendar Year 2008 (SNL/NM February 2006, SNL/NM June 2006, SNL/NM September 2006, SNL/NM December 2006, SNL/NM March 2007, SNL/NM June 2007, SNL/NM September 2007, SNL/NM December 2007, SNL/NM March 2008, SNL/NM June 2008a, SNL/NM September 2008a, and SNL/NM December 2008a).

Because perchlorate concentrations in monitoring well CYN-MW6 (in the Burn Site Groundwater study area) have exceeded the screening level, and because this well had completed the required minimum four quarters of sampling, DOE/Sandia initiated a negotiation process with the NMED to determine the frequency of continued perchlorate monitoring (SNL/NM March 2007). DOE/Sandia recently received approval from NMED to discontinue quarterly monitoring of perchlorate in CYN-MW6 and proceed with semiannual sampling at this well beginning in March 2009 (NMED November 2008). Groundwater monitoring wells MWL-MW7, MWL-MW8, and MWL-MW9 (in the Mixed Waste Landfill study area) have now been sampled during three consecutive quarters and MWL-BW2 has been sampled during four consecutive quarters. The Order requires that new wells be sampled for perchlorate for a minimum of four quarters (NMED April 2004). Reporting will continue as long as a groundwater monitoring well remains in the perchlorate-screening monitoring well network unless negotiated otherwise with NMED.

Figure 1. Sandia National Laboratories New Mexico Current Perchlorate-Screening Monitoring-Well Network (October 2008 through March 2009)



2.0 Scope of Activities

This report provides perchlorate screening results from the fourth quarter of CY2008 and first quarter of CY2009 (October 2008 through March 2009) for the wells currently active in the perchlorate screening program as shown on Figure 1 and listed in Table 1. Per the requirements of Table XI-1 of the Order, a well with four consecutive quarters of non-detect results at the screening level/method detection limit (MDL) of 4 micrograms per liter (μg/L) is removed from the requirement of continued monitoring for perchlorate. Data from several wells identified in the Order have satisfied this requirement and, therefore, these wells have been removed from the perchlorate screening program. Data for these wells were provided in previous reports, and are not discussed in this current report. Wells discussed in previous perchlorate screening reports include: CYN-MW1D, CYN-MW5, CYN-MW7, CYN-MW8, MRN-2, MRN-3D, MWL-BW1, MWL-MW1, NWTA3-MW2, and SWTA3-MW4.

Table 1
Current Perchlorate-Screening Monitoring-Well Network
Fourth Quarter of CY2008 and First Quarter of CY2009
(October 2008 through March 2009)

Well	Date Sampled	Number of Consecutive Sampling Events[a]	Remaining Number of Sampling Events[b]	Sampling Method
CYN-MW6	02-MAR-2009	12	TBD[c]	Bennett™ Pump
MWL-BW2	01-OCT-2008 05-JAN-2009	4	0	Bennett™ Pump
MWL-MW7	06-OCT-2008 06-JAN-2009	3	1	Bennett™ Pump
MWL-MW8	07-OCT-2008 07-JAN-2009	3	1	Bennett™ Pump
MWL-MW9	08-OCT-2008 08-JAN-2009	3	1	Bennett™ Pump

Notes:
[a] Includes these two sampling events.
[b] Per the requirements of Table XI-1 of the Order (NMED April 2004) a well will be removed from the perchlorate-screening monitoring-well network after four quarters unless perchlorate is detected above the screening level/MDL of 4 μg/L. If perchlorate is detected above the screening level/MDL in a specific well, monitoring will continue at that well at a frequency negotiated with the NMED.
[c] TBD = To be determined. This well has been sampled for the required initial four quarters. Because perchlorate concentrations in this well have exceeded the screening level, DOE/Sandia initiated the negotiation process with the NMED to determine further characterization requirements.

DOE/Sandia performed groundwater sampling at five wells on the dates listed in Table 1. These wells were installed after the Order was finalized and are required to be sampled for perchlorate as "new" wells. Groundwater sampling activities were conducted in conformance with procedures outlined in the investigation-specific sampling and analysis plans (SAP) entitled:

- "Mixed Waste Landfill Groundwater Monitoring Mini-SAP for FY09, 1st Quarter Sampling, October 2008" (SNL/NM September 2008b);
- "Mixed Waste Landfill Groundwater Monitoring Mini-SAP for FY09, 2nd Quarter Sampling, January 2009" (SNL/NM December 2008b); and
- "Burn Site Groundwater Monitoring Mini-SAP for Second Quarter Fiscal Year 2009" (SNL/NM February 2009).

As described in the Mini-SAPs, groundwater sampling was performed in conformance with current Sandia Environmental Management, Long Term Environmental Stewardship (LTES) Project field operating procedures (FOPs). A portable Bennett™ groundwater sampling system was used to collect the groundwater samples. The sampling pump and tubing bundle were decontaminated prior to installation into monitoring wells in accordance with procedures described in FOP 05-03, "LTES Groundwater Sampling Equipment Decontamination" (SNL/NM October 2005a). Wells CYN-MW6 and MWL-BW2 were purged a minimum of one saturated screen volume before sampling in conformance with FOP 05-01, "LTES Groundwater Monitoring Well Sampling and Field Analytical Measurements" (SNL/NM October 2005b). Wells MWL-MW7, MWL-MW8, and MWL-MW9 are low-yield monitoring wells. Frequently these wells were purged dry and allowed to recover before sampling to ensure the most representative groundwater sample possible.

Field water-quality measurements for turbidity, potential of hydrogen (pH), temperature, specific conductance (SC), oxidation-reduction potential (ORP), and dissolved oxygen (DO) were obtained from the well prior to collecting groundwater samples. Ground-water temperature, SC, ORP, DO, and pH were measured with a YSI™ Model 620 Water Quality Meter. Turbidity was measured with a HACH™ Model 2100P turbidity meter. Purging at CYN-MW6 and MWL-BW2 continued until four stable measurements for turbidity, pH, temperature, and SC were obtained. Groundwater stability was considered acceptable when measurements were within 10 percent or less than 5 nephelometric turbidity units for turbidity, 0.1 pH units, 1.0 degree Celsius, and SC within 5 percent. Field Measurement Logs documenting details of well purging and water quality measurements were submitted to the Sandia Customer-Funded Records Center.

The groundwater samples were submitted to General Engineering Laboratories (GEL) for chemical analysis for perchlorate using U.S. Environmental Protection Agency (EPA) Method 314.0 (EPA November 1999). The sample identification, Analysis Request/ Chain-of-Custody (AR/COC) form number, and the sample shipment date are provided in Table 2. The analytical report from GEL, including certificates of analyses (COA) (Appendix A), analytical methods, MDLs, practical quantitation limits (PQLs), dates of analyses, results of QC analyses, and data validation findings have been submitted to the Sandia Customer-Funded Records Center.

Table 2
Sample Details for Fourth Quarter of CY2008
and First Quarter of CY2009 Perchlorate Sampling

Well	Sample Identification	AR/COC Number	Date Shipped
Fourth Quarter CY2008:			
MWL-BW2	086812-020 086813-020	612017	01-OCT-08
MWL-MW7	086815-020	612018	06-OCT-08
MWL-MW8	086817-020	612019	07-OCT-08
MWL-MW9	086820-020	612020	08-OCT-08
First Quarter CY2009:			
CYN-MW6	087047-020	612120	02-MAR-09
MWL-BW2	086943-020	612073	05-JAN-09
MWL-MW7	086946-020	612074	06-JAN-09
MWL-MW8	086950-020 086951-020	612076	07-JAN-09
MWL-MW9	086953-020	612077	08-JAN-09

Notes:
ARCOC = Analysis request and chain of custody.

3.0 Regulatory Criteria

In a given monitoring well, four consecutive non-detects (NDs) using the screening level/MDL of 4 μg/L are considered by the NMED to be evidence of the absence of perchlorate, such that additional monitoring for perchlorate in that well is not required. If perchlorate is detected using the screening level/MDL of 4 μg/L in a specific well, monitoring will continue at that well at a frequency negotiated with the NMED. The Order (NMED April 2004) also requires that for detections equal to or greater than 4 μg/L, the DOE/Sandia will evaluate the nature and extent of perchlorate contamination, based on a screening level/MDL of 4 μg/L, and requires that the results of this evaluation be incorporated into a Corrective Measures Evaluation (CME). Section VII.C of the Order clarifies that the CME process will be initiated where there was a release to the environment and where corrective measures are necessary to protect human health or the environment.

In March 2007, DOE/Sandia received a letter from the NMED stating the requirement that DOE/Sandia "determine the nature and extent of the contamination and complete a Corrective Measures Evaluation for the perchlorate-impacted groundwater in the vicinity of CYN-MW6" (NMED March 2007). As this was based solely on the four quarters of monitoring results, DOE/Sandia submitted a letter to the NMED in April 2007 (SNL/NM April 2007) which recommended further characterization through continued quarterly monitoring of CYN-MW6 for four additional quarters, ending in December 2007, to assure appropriate characterization of this well. In January 2008, DOE/Sandia requested a meeting with NMED to discuss the need for continued monitoring or additional characterization work, and potentially, a CME.

In preparation of discussing the perchlorate-impacted groundwater in the vicinity of CYN-MW6 and to show that the requirement "to determine the nature and extent of contamination" (NMED March 2007) has been met, DOE/Sandia provided supporting information to the NMED (SNL/NM March 2008). Perchlorate in surface soils has been characterized at Solid Waste Management Units (SWMUs) in the study area (SNL/NM June 2006; SNL/NM March 2008--Appendix C). Based upon these data DOE/Sandia believe the nature and extent of perchlorate in groundwater at the Burn Site has been sufficiently characterized. Since 2004, four other monitoring wells in the vicinity of the Burn Site have been sampled and analyzed for perchlorate, including CYN-MW1D, CYN-MW5, CYN-MW7, and CYN-MW8. All of these wells were sampled for four quarters and all results were non-detect for perchlorate (SNL/NM March 2008--Appendix D).

Per the requirements of Section VI.K.1.b of the Order (NMED April 2004), a human health risk assessment has been performed to evaluate the potential for adverse health effects from the concentrations of perchlorate detected in CYN-MW6 groundwater. The maximum concentration of perchlorate in CYN-MW6 to date (8.93 µg/L) was used in the assessment. The calculated hazard quotient (HQ) of 0.35 is less than the NMED target level of a Hazard Index (the sum of all HQs) of 1.0 (NMED June 2006) (SNL/NM March 2008--Appendix E).

Because perchlorate concentrations in monitoring well CYN-MW6 have exceeded the screening level, DOE/Sandia initiated a negotiation process with the NMED (SNL/NM March 2007) to determine the frequency of continued monitoring. In November 2008, DOE/Sandia received approval from NMED to proceed with semi-annual monitoring of perchlorate in CYN-MW6 and proceed with semiannual reporting of all perchlorate results (NMED November 2008). In April 2009, DOE/Sandia received a letter from the NMED requiring DOE/Sandia to characterize the nature and extent of the perchlorate contamination at or near the Lawrence Canyon Burn Site. DOE/Sandia must submit to the NMED a plan for such characterization. The NMED has also requested that DOE/Sandia monitor for perchlorate in several Tijeras Arroyo Groundwater and Technical Area-V monitoring wells

4.0 Monitoring Results

Table 3 summarizes current and historical perchlorate results for CYN-MW6, MWL-BW2, MWL-MW7, MWL-MW8, MWL-MW9. The analytical laboratory COA for the fourth quarter CY2008 and first quarter of 2009 perchlorate data is included as Appendix A.

Table 3
Summary of Perchlorate Screening Analytical Results for the Current Monitoring-Well Network, as of First Quarter CY2009.

Well ID	Sample Date	ARCOC No.	Sample No.	Perchlorate Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Analytical Method[g]	Comments
CYN-MW6	23-Mar-06	609578	075985-020	**6.92**	4.0	12	NE	J		EPA 314.0	
			075986-020	**7.44**	4.0	12	NE	J		EPA 314.0	Duplicate sample
			075985-R20	**6.39**	0.50	2.0	NE	Hh	HT, J	EPA 6850M	Verification/Re-analysis
			075986-R20	**6.48**	0.50	2.0	NE	Hh	HT, J	EPA 6850M	Verification/Re-analysis
	22-Jun-06	609929	078687-020	**6.63**	4.0	12	NE	J		EPA 314.0	
			078688-020	**6.45**	4.0	12	NE	J		EPA 314.0	Duplicate sample
			078687-021	**6.99**	1.0	4.0	NE			EPA 6850M	Verification
			078688-021	**6.92**	1.0	4.0	NE			EPA 6850M	Verification/Duplicate Sample
	20-Sep-06	610652	081626-020	**7.52**	4.0	12	NE	J		EPA 314.0	
			081626-R20	**6.96**	1.0	4.0	NE		P2	EPA 6850M	Verification/Re-analysis
	15-Dec-06	611057	083858-020	**8.46**	4.0	12	NE	J		EPA 314.0	
			083859-020	**8.93**	4.0	12	NE	J		EPA 314.0	Duplicate sample
	14-Mar-07	611200	084237-020	**8.12**	4.0	12	NE	J		EPA 314.0	
	27-Jun-07	611399	084833-020	**6.57**	4.0	12	NE	J	J-, X1	EPA 314.0	
			084833-R20	**5.94**	0.5	2.0	NE			EPA 6850M	Verification/Re-analysis
	12-Sep-07	611581	085249-020	**7.74**	4.0	12	NE	J		EPA 314.0	
			085249-R20	**6.46**	0.5	2.0	NE	Hh	J	EPA 6850M	Verification/Re-analysis
	18-Dec-07	611668	085446-020	**6.20**	4.0	12	NE	J		EPA 314.0	
			085447-020	**6.56**	4.0	12	NE	J		EPA 314.0	Duplicate sample
	10-Mar-08	611749	085661-020	**7.25**	4.0	12	NE	J		EPA 314.0	
	23-Jun-08	611912	086280-020	**6.67**	4.0	12	NE	J		EPA 314.0	
	17-Sep-08	612004	086782-020	**6.85**	4.0	12	NE	J		EPA 314.0	
	02-Mar-09	612120	087047-020	**7.24**	4.0	12	NE	J		EPA 314.0	

Refer to notes at the bottom of table.

Table 3 (continued)
Summary of Perchlorate Screening Analytical Results for the Current Monitoring-Well Network, as of First Quarter CY2009.

Well ID	Sample Date	ARCOC No.	Sample No.	Perchlorate Result[a] (µg/L)	MDL[b] (µg/L)	PQL[c] (µg/L)	MCL[d] (µg/L)	Laboratory Qualifier[e]	Validation Qualifier[f]	Analytical Method[g]	Comments
MWL-BW2	09-Apr-08	611794	085758-020	ND	4.0	12	NE	U		EPA 314.0	
	17-Jul-08	611952	086358-020	ND	4.0	12	NE	U		EPA 314.0	
	01-Oct-08	612017	086812-020	ND	4.0	12	NE	U		EPA 314.0	
			086813-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
	05-Jan-09	612073	086943-020	ND	4.0	12	NE	U		EPA 314.0	
MWL-MW7	16-Jul-08	611954	086362-020	ND	4.0	12	NE	U		EPA 314.0	
			086363-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
	06-Oct-08	612018	086815-020	ND	4.0	12	NE	U		EPA 314.0	
	06-Jan-09	612074	086946-020	ND	4.0	12	NE	U		EPA 314.0	
MWL-MW8	14-Jul-08	611955	086365-020	ND	4.0	12	NE	U		EPA 314.0	
	07-Oct-08	612019	086817-020	ND	4.0	12	NE	U		EPA 314.0	
	07-Jan-09	612076	086950-020	ND	4.0	12	NE	U		EPA 314.0	
			086951-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
MWL-MW9	15-Jul-08	611956	086367-020	ND	4.0	12	NE	U		EPA 314.0	
	08-Oct-08	612020	086820-020	ND	4.0	12	NE	U		EPA 314.0	
	08-Jan-09	612077	086953-020	ND	4.0	12	NE	U		EPA 314.0	

Notes—

CYN-MW6 was installed in January 2006; MWL-BW2 was installed in March 2008; and MWL-MW7, MWL-MW8, MWL-MW9 were installed in May 2008. This table presents all perchlorate data collected at these wells.

[a]**Result**
Values in **bold** exceed the screening level/MDL.
ND = not detected (at method detection limit).
µg/L = micrograms per liter.
[b]**MDL**
Method detection limit. The minimum concentration that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.
[c]**PQL**
Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by that indicated method under routine laboratory operating conditions.

Table 3 (concluded)
Summary of Perchlorate Screening Analytical Results for the Current Monitoring-Well Network, as of First Quarter CY2009.

Notes (continued)

[d]MCL
Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations [40 CFR 141.11(b)], and subsequent amendments or the New Mexico Environmental Improvement Board in Title 20, Chapter 7, Part 1 of the New Mexico Administrative Code (20MAC 7.1).
NE = not established.

[e]Lab Qualifier

H	= Analytical holding time was exceeded.
h	= Prep holding time was exceeded.
J	= Amount detected is below the practical quantitation limit.
U	= Analyte is absent or below the method detection limit.

[f]Validation Qualifier
If cell is blank, then all quality control samples meet acceptance criteria with respect to submitted samples and no qualifier was assigned.

HT	= The holding time was exceeded for the associated sample analysis.
J	= The associated value is an estimated quantity.
J-	= The associated value is an estimated quantity with a suspected negative bias.
P2	= Insufficient quality control data to determine laboratory precision.
X1	= General data quality is suspect.

[g]Analytical Method

EPA 314.0:	U.S. Environmental Protection Agency, November 1999, “Perchlorate in Drinking Water Using Ion Chromatography,” EPA 815/R-00-014 (EPA November 1999).
EPA 6850M:	U.S. Environmental Protection Agency, April 2005, “Perchlorate in Water, Soils, and Solids Using High Performance Liquid Chromatography/Electrospray Ionization/Mass Spectrometry (HPLC/ESI/MS),” draft, Method 6850 (EPA April 2005).

Perchlorate was not detected above the screening level in MWL-BW2, MWL-MW7, MWL-MW8, or MWL-MW9. Consistent with historical analytical results, perchlorate was detected above the screening level/MDL in the first quarter of CY2009 in CYN-MW6.

As shown in Figure 2, the concentration of perchlorate found in CYN-MW6 in March 2009 (7.24 µg/L) is consistent with concentrations from previous quarters (SNL/NM May 2006, SNL/NM June 2006, SNL/NM September 2006, SNL/NM December 2006, SNL/NM March 2007, SNL/NM June 2007, SNL/NM September 2007, SNL/NM December 2007, SNL/NM March 2008, SNL/NM June 2008a, SNL/NM September 2008a, and SNL/NM December 2008a).

Table 4 summarizes field water quality measurements collected immediately before the analytical sample was collected. Field water quality measurements include turbidity, pH, temperature, SC, ORP, and DO.

The analytical data were reviewed and qualified in accordance with AOP 00-03 Revision 2, "Data Validation Procedure for Chemical and Radiochemical Data" (SNL/NM July 2007). No problems were identified with the analytical data that resulted in the qualification of the data as unusable. The data are acceptable and reported quality control measures are adequate. The data validation sample findings summary sheets for the perchlorate data are included as Appendix B. No variances or nonconformances in field activities or field conditions from requirements in the groundwater monitoring mini-SAPs (SNL/NM September 2008b, SNL/NM December 2008b, and SNL/NM February 2009) were identified during the fourth quarter CY2008/first quarter CY2009 sampling activities.

5.0 Summary and Conclusions

Based on the analytical data presented in Table 3 and in previous reports, the following statements can be made:

- No perchlorate was detected in the environmental sample from groundwater monitoring wells MWL-BW2, MWL-MW7, MWL-MW8, and MWL-MW9 at a screening level/MDL of 4 µg/L.
- Since June 2004 (the start of sampling required by the Order), perchlorate has only been detected above the screening level/MDL (4 µg/L) in one of the wells (CYN-MW6) in the perchlorate-screening monitoring-well network. Due to the detection of perchlorate in the samples from CYN-MW6 in March 2006, DOE/Sandia submitted the "Notification of Release, Perchlorate at Well CYN-MW6, May 2006" (SNL/NM May 2006) to the NMED. DOE and Sandia were required to notify the NMED of the discovery of a previously unknown release under Section V of the Order (NMED April 2004).
- The analytical result from CYN-MW6 for the First Quarter of CY2009 sampling event (7.24 µg/L) is consistent with the concentrations reported since the inception of sampling for perchlorate at CYN-MW6 in March 2006 (Figure 2) (SNL/NM May 2006, SNL/NM June 2006, SNL/NM September 2006, SNL/NM December 2006, SNL/NM March 2007, SNL/NM June 2007, SNL/NM September 2007, SNL/NM December 2007, SNL/NM March 2008, SNL/NM June 2008a, SNL/NM September 2008a, and SNL/NM December 2008a).

Figure 2. Perchlorate Concentrations (µg/L) over Time in CYN-MW6

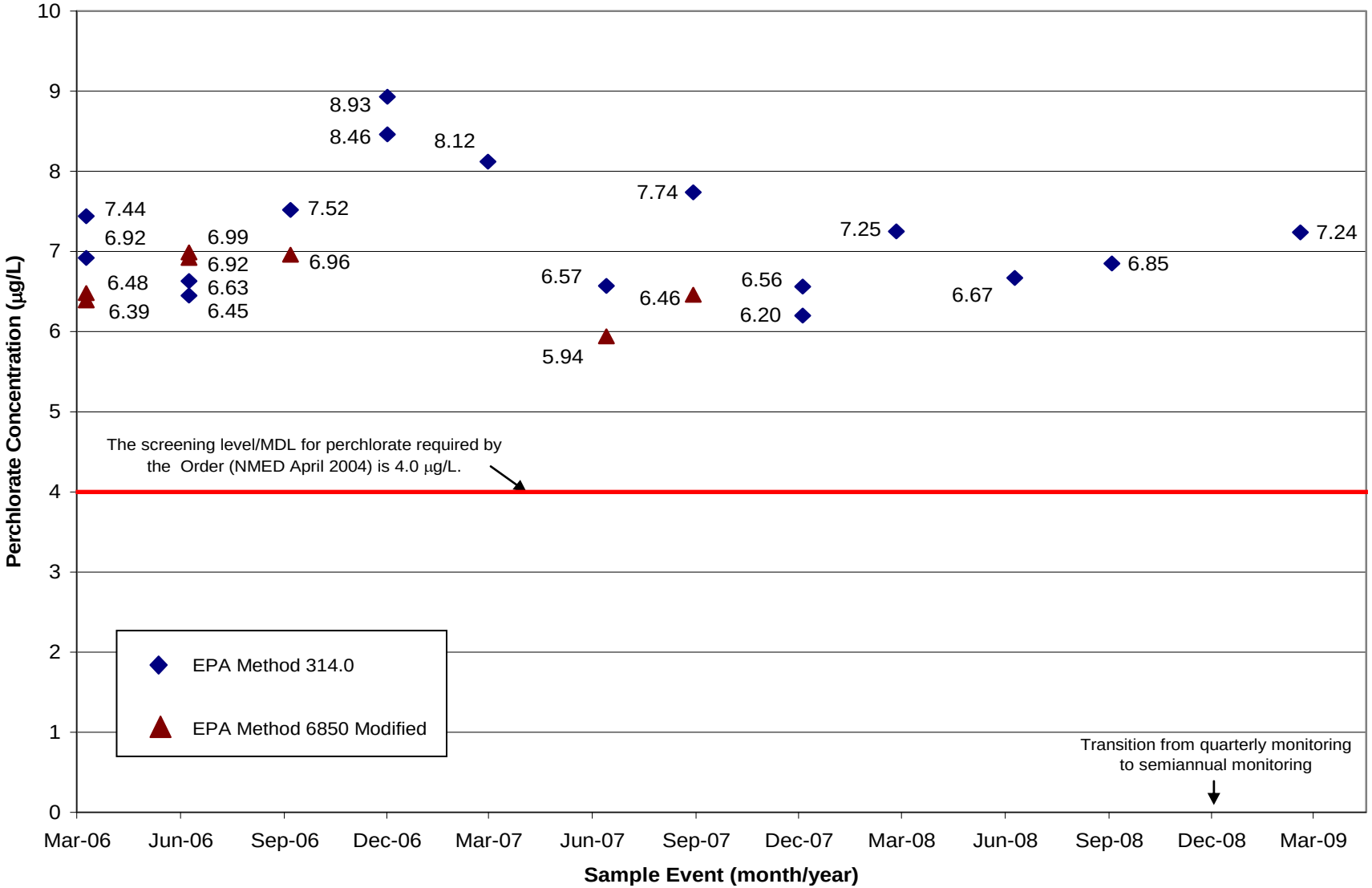


Table 4
Perchlorate Screening Groundwater Monitoring
Field Water Quality Measurements[a], Fourth Quarter of CY2008 and First Quarter of CY2009

Well ID	Sample Date	Temperature (^{0}C)	Specific Conductivity (μmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (% Sat)	Dissolved Oxygen (mg/L)
Fourth Quarter CY2008:								
MWL-BW2	01-Oct-08	21.54	766	119.7	7.18	0.70	6.3	0.55
MWL-MW7	06-Oct-08	17.97	632	164.9	7.39	1.18	44.3	4.19
MWL-MW8	07-Oct-08	19.49	634	151.2	7.36	1.91	23.7	2.17
MWL-MW9	08-Oct-08	19.44	624	146.7	7.29	3.66	27.1	2.48
First Quarter CY2009:								
CYN-MW6	02-Mar-09	17.58	1482	158.1	7.07	1.77	11.6	1.10
MWL-BW2	05-Jan-09	15.54	761	133.5	7.36	0.76	6.1	0.61
MWL-MW7	06-Jan-09	15.48	627	263.0	7.53	11.8	44.6	4.44
MWL-MW8	07-Jan-09	16.74	625	209.3	7.52	1.73	63.8	6.11
MWL-MW9	08-Jan-09	15.99	626	219.2	7.34	1.05	18.1	1.80

Notes:
[a]Field measurements made immediately before the groundwater sample was collected.
^{O}C = degrees Celsius.
% Sat = percent saturation.
μmho/cm = micromhos per centimeter.
mg/L = milligrams per liter.
mV = millivolts.
NTU = nephelometric turbidity units.
pH = potential of hydrogen (negative logarithm of the hydrogen ion concentration).

- As discussed in the previous reports (SNL/NM June 2006 and SNL/NM September 2006), the source for the perchlorate in the groundwater at CYN-MW6 is unknown. Soil sampling completed in 2001 at SWMU 65—Lurance Canyon Explosives Test Site, or SWMU 94—Lurance Canyon Burn Site did not reveal detectable concentrations of perchlorate in site soils (NMED January 2001; Skelly and Griffith January 2003; and SNL/NM June 2006).
- The nature and extent of perchlorate in groundwater at the Burn Site has been sufficiently characterized. Since 2004, four other monitoring wells in the vicinity of the Burn Site have been sampled and analyzed for perchlorate, including CYN-MW1D, CYN-MW5, CYN-MW7, and CYN-MW8. All of these wells were sampled for four quarters and all results were non-detect for perchlorate (SNL/NM March 2008).
- A human health risk assessment has been performed to evaluate the potential for adverse health effects from the concentrations of perchlorate detected in CYN-MW6 groundwater. The maximum concentration of perchlorate in CYN-MW6 to date (8.93 µg/L) was used in the assessment. The calculated HQ of 0.35 is less than the NMED target level of a Hazard Index (the sum of all HQs) of 1.0 (NMED June 2006 and SNL/NM March 2008).

DOE/Sandia will discontinue quarterly monitoring of perchlorate in MWL-BW2, due to four consecutive quarters of non-detects in this well. DOE/Sandia will continue quarterly monitoring of perchlorate in MWL-MW7, MWL-MW8, and MWL-MW9 for at least one more quarter to verify the results presented in this report. Based on an agreement with the NMED (NMED November 2008), DOE/Sandia will continue semiannual sampling at CYN-MW6 and continue semiannual reporting of all perchlorate results.

6.0 References

EPA (see US Environmental Protection Agency).

New Mexico Environment Department (NMED) January 2001. New Mexico Environment Department. Perchlorate Study Analytical Data (Soil), transmitted from Pinnacle Laboratories, Albuquerque, NM to Julie Wanslow and Will Moats, NMED HWB. Two data packages submitted January 29, 2001.

New Mexico Environment Department (NMED) April 2004. "Compliance Order on Consent Pursuant to the New Mexico Hazardous Waste Act 74-4-10: Sandia National Laboratories Consent Order, " New Mexico Environment Department, April 24, 2004.

New Mexico Environment Department (NMED) January 2006. "RE: Monitoring Groundwater for Perchlorate, Report of November 22, 2005. Sandia National Laboratories EPA ID# NM5890110518." Letter to Patty Wagner (SSO/NNSA) and Peter Davies (SNL/NM) from James Bearzi. January 27, 2006.

New Mexico Environment Department (NMED) June 2006. "Technical Background Document for Development of Soil Screening Levels, Revision 4.0," New Mexico Environment Department, Hazardous Waste Bureau and Ground Water Quality Bureau Voluntary Remediation Program, Santa Fe, New Mexico. (NMED 2006, 092513). June 2006.

New Mexico Environment Department (NMED) March 2007. "RE: Notice of Approval: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2006 (April, May, and June) September 20, 2006. Sandia National Laboratories, EPA ID# NM5890110518. HWB-SNL-06-011" Letter to Patty Wagner (SSO/NNSA) and Peter Davies (SNL/NM) from James Bearzi. March 23, 2007.

New Mexico Environment Department (NMED) November 2008. "RE: Perchlorate Issues" Personal Communication (electronic mail) to John Cochran (SNL/NM) from Sid Brandwein (NMED/HWB). November 07, 2008.

New Mexico Environment Department (NMED) April 2009. RE: Perchlorate Contamination in Groundwater, Sandia National Laboratories, EPA ID# NM5890110518." Letter to Kimberly Davis (SSO/NNSA) and Francis Nimick (SNL/NM) from James Bearzi. April 30, 2009.

Sandia National Laboratories, New Mexico (SNL/NM) October 2005a. Sandia Field Operating Procedure 05-03, Revision 00 "LTES Groundwater Sampling Equipment Decontamination," Sandia National Laboratories, New Mexico Long Term Environmental Stewardship, Environmental Management Department. October 17, 2005.

Sandia National Laboratories, New Mexico (SNL/NM) October 2005b. Sandia Field Operating Procedure 05-01, Revision 00 "LTES Groundwater Monitoring Well Sampling and Field Analytical Measurements," Sandia National Laboratories, New Mexico Long Term Environmental Stewardship, Environmental Management Department. October 17, 2005.

Sandia National Laboratories, New Mexico (SNL/NM) November 2005. To James Bearzi (NMED), "Letter Report on the Status of Perchlorate Screening in Groundwater at Sandia Monitoring Wells" Sandia National Laboratories, New Mexico Environmental Restoration Project. November 22, 2005.

Sandia National Laboratories, New Mexico (SNL/NM) February 2006. "Perchlorate Screening Quarterly Monitoring Report, Fourth Quarter of Calendar Year 2005 (October, November, and December 2005)". Sandia National Laboratories, New Mexico Environmental Restoration Project. February 24, 2006.

Sandia National Laboratories, New Mexico (SNL/NM) May 2006. To James Bearzi (NMED) "Notification of Release, Perchlorate at Well CYN-MW6, May 2006". Sandia National Laboratories, New Mexico Environmental Restoration Project. May 26, 2006.

Sandia National Laboratories, New Mexico (SNL/NM) June 2006. "Perchlorate Screening Quarterly Monitoring Report, First Quarter of Calendar Year 2006 (January, February, and March 2006)". Sandia National Laboratories, New Mexico Environmental Restoration Project. June 7, 2006.

Sandia National Laboratories, New Mexico (SNL/NM) September 2006. "Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2006 (April, May, and June 2006)". Sandia National Laboratories, New Mexico Environmental Restoration Project. September 20, 2006.

Sandia National Laboratories, New Mexico (SNL/NM) December 2006. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Third Quarter of Calendar

Year 2006 (July, August, and September 2006)". Sandia National Laboratories, New Mexico Environmental Restoration Project. December 2006.

Sandia National Laboratories, New Mexico (SNL/NM) March 2007. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Fourth Quarter of Calendar Year 2006 (October, November, and December 2006)". Sandia National Laboratories, New Mexico Environmental Restoration Project. March 27, 2007.

Sandia National Laboratories, New Mexico (SNL/NM) April 2007. Response to March 23, 2007 NMED letter entitled "RE: Notice of Approval: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2006 (April, May, and June) September 20, 2006. Sandia National Laboratories, EPA ID# NM5890110518. HWB-SNL-06-011". Letter to James Bearzi (NMED HWB) from Patty Wagner (SSO/NNSA). Sandia National Laboratories, New Mexico Environmental Restoration Project. April 19, 2007.

Sandia National Laboratories, New Mexico (SNL/NM) June 2007. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, First Quarter of Calendar Year 2007 (January, February, and March 2007)". Sandia National Laboratories, New Mexico Environmental Restoration Project. June 27, 2007.

Sandia National Laboratories, New Mexico (SNL/NM) July 2007. Sandia Administrative Operating Procedure 00-03, Revision 2, "Data Validation Procedure for Chemical and Radiochemical Data." Sandia National Laboratories, New Mexico Sample Management Office. July 16, 2007.

Sandia National Laboratories, New Mexico (SNL/NM) September 2007. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2007 (April, May, and June 2007)". Sandia National Laboratories, New Mexico Environmental Restoration Project. September 26, 2007.

Sandia National Laboratories, New Mexico (SNL/NM) December 2007. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Third Quarter of Calendar Year 2007 (July, August, and September 2007)". Sandia National Laboratories, New Mexico Environmental Restoration Project. December 27, 2007.

Sandia National Laboratories, New Mexico (SNL/NM) March 2008. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Fourth Quarter of Calendar Year 2007 (October, November, and December 2007)". Sandia National Laboratories, New Mexico Environmental Restoration Project. March 26, 2008.

Sandia National Laboratories, New Mexico (SNL/NM) June 2008a. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, First Quarter of Calendar Year 2008 (January, February, and March 2008)". Sandia National Laboratories, New Mexico Environmental Restoration Project. June 27, 2008.

Sandia National Laboratories, New Mexico (SNL/NM) September 2008a. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Second Quarter of Calendar Year 2008 (April, May, and June 2008)". Sandia National Laboratories, New Mexico Environmental Restoration Project. September 23, 2008.

Sandia National Laboratories, New Mexico (SNL/NM) September 2008b. "Mixed Waste Landfill Groundwater Monitoring, Mini-Sampling and Analysis Plan (SAP) for FY09 1st Quarter Sampling, October 2008". Sandia National Laboratories, New Mexico Environmental Restoration Project. September 8, 2008.

Sandia National Laboratories, New Mexico (SNL/NM) December 2008a. "Consolidated Quarterly Report, Section III: Perchlorate Screening Quarterly Monitoring Report, Third Quarter of Calendar Year 2008 (July, August, and September 2008)". Sandia National Laboratories, New Mexico Environmental Restoration Project. December 22, 2008.

Sandia National Laboratories, New Mexico (SNL/NM) December 2008b. "Mixed Waste Landfill Groundwater Monitoring, Mini-Sampling and Analysis Plan (SAP) for FY09 2nd Quarter Sampling, January 2009". Sandia National Laboratories, New Mexico Environmental Restoration Project. December 12, 2008.

Sandia National Laboratories, New Mexico (SNL/NM) February 2009. "Burn Site Groundwater Monitoring, Mini-Sampling and Analysis Plan (SAP) for Second Quarter Fiscal Year 2009". Sandia National Laboratories, New Mexico Environmental Restoration Project. February 2, 2009.

Skelly, Michael F. and Stacy R. Griffith January 2003. Memo to Sue Collins (SNL/NM), "Data Evaluation Report—Summary of Sitewide Perchlorate Studies." Sandia National Laboratories Environmental Restoration Project, Albuquerque New Mexico. January 16, 2003.

U.S. Environmental Protection Agency (EPA) November 1999, "Perchlorate in Drinking Water Using Ion Chromatography," EPA 815/R-00-014. November 1999.

U.S. Environmental Protection Agency (EPA) April 2005, "Perchlorate in Water, Soils, and Solids Using High Performance Liquid Chromatography/Electrospray Ionization/Mass Spectrometry (HPLC/ESI/MS)," Draft, Method 6850. April 2005.

Appendix A

Analytical Laboratory Certificates of Analysis for the Perchlorate Data

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC 612017

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	10/1/08	Project/Task NO. 98026 .01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No.	94564	SMO Authorization:	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	968 BOTTLE ORDER	☐ Released by COC No.: ☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO)

	Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓	✓086812-001 ✓	MWL-BW2	499	76	100108/ 1056	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓	✓ 086812-002 ✓	MWL-BW2	499	76	100108/ 1058	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓	✓ 086812-009 ✓	MWL-BW2	499	76	100108/ 1059	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U,U-235,U-238	
✓	✓ 086812-010 ✓	MWL-BW2	499	76	100108/ 1100	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U,U-235,U-238	
✓	✓ 086812-016 ✓	MWL-BW2	499	76	100108/ 1101	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓	✓ 086812-018 ✓	MWL-BW2	499	76	100108/ 1102	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓	✓ 086812-020 ✓	MWL-BW2	499	76	100108/ 1103	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓	✓ 086812-033 ✓	MWL-BW2	499	76	100108/ 1104	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓	✓ 086812-034 ✓	MWL-BW2	499	76	100108/ 1105	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓	✓ 086812-036 ✓	MWL-BW2	499	76	100108/ 1106	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No	No.	Sample Tracking Smo Use
Sample Disposal	☐ Return to Client	☑ Disposal by lab	Date Entered(mm/dd/yy) 10/07/08
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day		Entered by:
Return Samples By:		☐ Negotiated TAT	QC mits

Special Instructions/QC Requirements
EDD ☑ Yes ☐ No
Level D Package ☐ Yes ☑ No
*Send report to:
Tim Jackson/Org 4133/MS 1087/505-284-2547

Total TAL&TAL Metals EPA Method (SW 846-6020/7470)
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
*Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

	Name	Signature	Init	Company/Organization/Phone/Cellular
Sample Team Members	Robert Lynch	Robert Lynch	RL	Weston/4133/844-4013/250-7090
	Alfred Santillanes	Alfred Santillanes		Weston/4133/844-5130/228-0710
	William Gibson	William Gibson		Weston/4133/284-5232/239-7367

1.Relinquished by Alfred Santillanes	Org. 4133	Date 10/1/08	Time 1305	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4133	Date 10/1/08	Time 1305	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4133	Date 10/1/08	Time 1355	5.Relinquished by	Org.	Date	Time
2. Received by	Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

OFF-SITE LABORATORY
Analysis Request And Chain Of Custody (Continuation)

AR/COC- 612017

Project Name:	MWL GWM	Project/Task Manger:	John Cochran	Project/Task No.:	98026.01.08
Location	Tech Area				
Building	Room				

Reference LOV (available at SMO)

Sample No-Fraction	ER Sample ID or Sample Location detail	Pump Depth (ft)	ER Site No.	Date/Time (hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab use: Lab Sample ID
086813-001	MWL-BW2	499	76	100108/ 1056	GW	G	3x40ml	HCL	G	DU	VOC (SW846-8260)	
086813-002	MWL-BW2	499	76	100108/ 1058	GW	AG	3x1L	4C	G	DU	SVOC (SW846-8270)	
086813-009	MWL-BW2	499	76	100108/ 1059	GW	P	500 ml	HNO3	G	DU	Total TAL Metals+Total U,U-235,U-238	
086813-010	MWL-BW2	499	76	100108/ 1100	FGW	P	500 ml	HNO3	G	DU	TAL Metals+Total U,U-235,U-238	
086813-016	MWL-BW2	499	76	100108/ 1101	GW	P	500 ml	4C	G	DU	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
086813-018	MWL-BW2	499	76	100108/ 1102	GW	P	250 ml	H2SO4	G	DU	NPN (353.2)	
086813-020	MWL-BW2	499	76	100108/ 1103	GW	P	250 ml	4C	G	DU	Perchlorate (314.0)	
086813-033	MWL-BW2	499	76	100108/ 1104	GW	P	1 Liter	HNO3	G	DU	Gamma Spec (short list 901.1)	
086813-034	MWL-BW2	499	76	100108/ 1105	GW	P	1 Liter	HNO3	G	DU	Gross Alpha/Beta (900.0)	
086813-036	MWL-BW2	499	76	100108/ 1106	GW	AG	250 ml	4C	G	DU	Tritium (906.0)	
086814-001	MWL-TB2	NA	NA	100108/ 1056	DIW	G	3x40ml	HCL	G	TB	VOC (SW846-8260)	

Abnormal Conditions on Receipt

LAB USE

Recipient Initials

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 25, 2008

Client Sample ID: 086813-020
Sample ID: 216796017
Matrix: AQUEOUS
Collect Date: 01-OCT-08 11:03
Receive Date: 02-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-BW2

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/03/08	1639	801457	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 25, 2008

Client Sample ID: 086812-020
Sample ID: 216796007
Matrix: AQUEOUS
Collect Date: 01-OCT-08 11:03
Receive Date: 02-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-BW2

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/03/08	1550	801457	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC **612018**

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	10-6-08	Project/Task NO. 98026 .01.08 ✓	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No:	94512	SMO Authorization: Other SMO	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	☐ Released by COC No.:
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BOTTOM ORDER	☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable)
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		P.O. Box 5800 MS 0154
Location	Tech Area				Albuquerque, NM 87185-0154
Building	Room			**Reference LOV(available at SMO)** 217048	

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓ 086815-001	MWL-MW7	493	76	100608/0911	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓ 086815-002	MWL-MW7	493	76	100608/0912	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓ 086815-009	MWL-MW7	493	76	100608/0913	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U,U-235,U-238	
✓ 086815-010	MWL-MW7	493	76	100608/0914	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U,U-235,U-238	
✓ 086815-016	MWL-MW7	493	76	100608/0915	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓ 086815-018	MWL-MW7	493	76	100608/0916	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓ 086815-020	MWL-MW7	493	76	100608/0917	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓ 086815-033	MWL-MW7	493	76	100608/0918	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓ 086815-034	MWL-MW7	493	76	100608/0919	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓ 086815-036	MWL-MW7	493	76	100608/0920	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA ☐ Yes ☑ No No.	**Sample Tracking** Smo Use	**Special Instructions/QC Requirements**	Abnormal Conditions on Receipt
Sample Disposal ☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy): 10/09/08	EDD ☑ Yes ☐ No	
Turnaround Time ☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by: RL	Level D Package ☐ Yes ☑ No	
Return Samples By:	☐ Negotiated TAT QC inits:	*Send report to: Tim Jackson/Org 4133/MS 1087/505-284-2547	Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch	[signature]	RL	Weston/4133/844-4013/250-7090
	William Gibson	[signature]	WG	Weston/4133/284-5232/239-7367

Total TAL&TAL Metals EPA Method (SW 846-6020/7470)
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
Please list as separate report.

1.Relinquished by [signature]	Org. 4133	Date 10/6/08	Time 1005	4.Relinquished by	Org.	Date	Time
1. Received by [signature]	Org. 4133	Date 10/6/08	Time 1005	4. Received by	Org.	Date	Time
2.Relinquished by [signature]	Org. 4133	Date 10/6/08	Time 1250	5.Relinquished by	Org.	Date	Time
2. Received by	Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 29, 2008

Client Sample ID: 086815-020
Sample ID: 217048007
Matrix: AQUEOUS
Collect Date: 06-OCT-08 09:17
Receive Date: 07-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW7

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/09/08	1829	803324	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC **612019**

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	10-7-08	Project/Task NO. 98026.01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No.	94678	SMO Authorization:	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	☐ Released by COC No.:
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BOTTLE ORDER	☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO)

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓ 086817-001 ✓	MWL-MW8	496.5	76	100708/1112	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓ 086817-002 ✓	MWL-MW8	496.5	76	100708/1113	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓ 086817-009 ✓	MWL-MW8	496.5	76	100708/1115	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U,U-235,U-238	
✓ 086817-010 ✓	MWL-MW8	496.5	76	100708/1117	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U,U-235,U-238	
✓ 086817-016 ✓	MWL-MW8	496.5	76	100708/1118	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓ 086817-018 ✓	MWL-MW8	496.5	76	100708/1119	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓ 086817-020 ✓	MWL-MW8	496.5	76	100708/1120	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓ 086817-033 ✓	MWL-MW8	496.5	76	100708/1121	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓ 086817-034 ✓	MWL-MW8	496.5	76	100708/1122	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓ 086817-036 ✓	MWL-MW8	496.5	76	100708/1123	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	**Sample Tracking**	Smo Use
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy)	10/09/08
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by:	RC
Return Samples By:	☐ Negotiated TAT	QC inits.	

Special Instructions/QC Requirements

EDD ☑ Yes ☐ No

Level D Package ☐ Yes ☑ No

*Send report to:

Tim Jackson/Org 4133/MS 1087/505-284-2547

Total TAL&TAL Metals EPA Method (SW 846-6020/7470)

Major Anions/Br,Cl,Fl,SO4

FGW (filtered in field w/40 micron filter)

Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch	[signature]	RL	Weston/4133/844-4013/250-7090
	William Gibson	[signature]		Weston/4133/284-5232/239-7367

1.Relinquished by	[signature]	Org. 4133	Date 10/7/08	Time 1150	4.Relinquished by	Org.	Date	Time
1. Received by	[signature]	Org. 4133	Date 10/7/08	Time 1150	4. Received by	Org.	Date	Time
2.Relinquished by	[signature]	Org. 4133	Date 10/7/08	Time 1300	5.Relinquished by	Org.	Date	Time
2. Received by		Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by		Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by		Org.	Date	Time	6. Received by	Org.	Date	Time

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 29, 2008

Client Sample ID: 086817-020
Sample ID: 217048018
Matrix: AQUEOUS
Collect Date: 07-OCT-08 11:20
Receive Date: 08-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW8

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/09/08	1919	803324	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

AR/COC 612020

SMO Use

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	10/8/08	Project/Task NO. 98026 .01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran	Carrier/Waybill No:	947-46	SMO Authorization	
Project Name:	MWL GWM	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	☐ Released by COC No.:
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BOTTLE ORDER	☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Service Order No.	CF 001-09	Send Report to SMO:	Lorraine Herrera/505-844-3199		
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO)

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
086820-001	MWL-MW9	497	76	100808/1048	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
086820-002	MWL-MW9	497	76	100808/1049	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
086820-009	MWL-MW9	497	76	100808/1051	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U,U-235,U-238	
086820-010	MWL-MW9	497	76	100808/1053	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U,U-235,U-238	
086820-016	MWL-MW9	497	76	100808/1054	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
086820-018	MWL-MW9	497	76	100808/1055	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
086820-020	MWL-MW9	497	76	100808/1056	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
086820-033	MWL-MW9	497	76	100808/1057	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
086820-034	MWL-MW9	497	76	100808/1058	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
086820-036	MWL-MW9	497	76	100808/1059	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA ☐ Yes ☑ No No.

Sample Disposal ☐ Return to Client ☑ Disposal by lab

Turnaround Time ☐ 7 Day ☐ 15 Day ☑ 30 Day

Return Samples By: ☐ Negotiated TAT

Sample Tracking Smo Use
Date Entered(mm/dd/yy) 10/09/08
Entered by: RK
QC Initials: LW

Special Instructions/QC Requirements
EDD ☑ Yes ☐ No
Level D Package ☐ Yes ☑ No
*Send report to:
Tim Jackson/Org 4133/MS 1087/505-284-2547
LAST WELL for MWL-PROJECT 1st quarter
Total TAL&TAL Metals EPA Method (SW 846-6020/7470)
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
*Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

Sample Team Members

Name	Signature	Init	Company/Organization/Phone/Cellular
Robert Lynch	Robert Lynch	RL	Weston/4133/844-4013/250-7090
William Gibson	William Gibson	WG	Weston/4133/284-5232/239-7367

1.Relinquished by Robert Lynch	Org. 4133	Date 10-8-08	Time 1100	4.Relinquished by	Org.	Date	Time
1. Received by T. Fuller	Org 4133	Date 10-8-08	Time 1100	4. Received by	Org.	Date	Time
2.Relinquished by T. Fuller	Org. 4133	Date 10-8-08	Time 1120	5.Relinquished by	Org.	Date	Time
2. Received by	Org. 4133	Date 10-8-08	Time 1120	5. Received by	Org.	Date	Time
3.Relinquished by	Org 4133	Date 10-8-08	Time 1300	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 29, 2008

Client Sample ID: 086820-020
Sample ID: 217048031
Matrix: AQUEOUS
Collect Date: 08-OCT-08 10:56
Receive Date: 09-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW9

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/15/08	1311	804304	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC **612120**

Dept. No./Mail Stop:	4133/1089	Date Samples Shipped:	3/2/09	Project/Task No.125778.10.11.03	☐ Waste Characterization
Project/Task Manager:	Don Schofield	Carrier/Waybill No.	99024	SMO Authorization:	-Send preliminary/copy report to:
Project Name:	Burn Site GWM	Lab Contact:	Edie Kent/803-556-8171	Contract #: PO 691436	☐ Released by COC No.:
Record Center Code:	ER/1333/DAT	Lab Destination:	GEL		☑ Validation Required
Logbook Ref. No.:	ER 058	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable)
Service Order No.	CF#058-09	Send Report to SMO:	Lorraine Herrera/505-844-3199		P.O. Box 5800 MS 0154
Location	Tech Area				Albuquerque, NM 87185-0154
Building	Room				

Reference LOV(available at SMO)

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
087047-005	CYN-MW6	163	NA	030209/1023	GW	AG	4x1 L	4C	G	SA	TPH Diesel (SW846-8015A/B) SVOC	004 .1
087047-006	CYN-MW6	163	NA	030209/1024	GW	G	3x40 ml	HCL	G	SA	TPH Gasoline (SW846-8015A/B) VOC	005 .2
087047-018	CYN-MW6	163	NA	030209/1025	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	006 .3
087047-020	CYN-MW6	163	NA	030209/1026	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	007 .4

RMMA ☐ Yes ☑ No Ref. No.

Sample Disposal ☐ Return to Client ☑ Disposal by lab

Turnaround Time ☐ 7 Day ☐ 15 Day ☑ 30 Day

Sample Tracking Smo Use

Date Entered(mm/dd/yy)

Entered by:

Special Instructions/QC Requirements

EDD ☑ Yes ☐ No

Level D Package ☐ Yes ☑ No

Abnormal Conditions on Receipt

Lab Use

Return Samples By: ☐ Negotiated TAT QC inits.

Sample Team Members	Name	Signature	Init.	Company/Organization/Phone/Cellular
	William J Gibson			Weston/4133/284-5232/239-7367
	Robert Lynch			Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-5130/228-0710

*Send report to:

Tim Jackson/Org.4133/MS 1089/505-284-2547

Last well for Burn Site project

Please list as separate report.

1.Relinquished by	Org. 4133	Date 3/2/09	Time 1100	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4133	Date 3/2/09	Time 1100	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4133	Date 3/2/09	Time 1215	5.Relinquished by	Org.	Date	Time
2. Received by	Org. GEL	Date 3-3-09	Time 0925	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: March 28, 2009

Client Sample ID: 087047-020
Sample ID: 225384007
Matrix: AQUEOUS
Collect Date: 02-MAR-09 10:26
Receive Date: 03-MAR-09
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: CYN-MW6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal											
EPA 314.0 Perchlorate by IC "As Received"											
Perchlorate	J	0.00724	0.004	0.012	mg/L	1	MAR1	03/10/09	1059	848356	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

AR/COC 612073

SMO Use

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	1/5/09	Project/Task NO. 98026 .01.08	☐ Waste Characterization
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No.	96823	SMO Authorization:	-Send preliminary/copy report to:
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BOTTLE ORDER	☐ Released by COC No.:
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		☑ Validation Required
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		Bill To: Sandia National Labs (Accounts Payable)
Location	Tech Area				P.O. Box 5800 MS 0154
Building	Room	Reference LOV(available at SMO)	221997		Albuquerque, NM 87185-0154

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓ 086943-001 ✓	MWL-BW2	499	76	010509/1043	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓ 086943-002 ✓	MWL-BW2	499	76	010509/1044	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓ 086943-009 ✓	MWL-BW2	499	76	010509/1046	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U(SW846-6020/7470)	
✓ 086943-010 ✓	MWL-BW2	499	76	010509/1047	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	
✓ 086943-016 ✓	MWL-BW2	499	76	010509/1048	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓ 086943-018 ✓	MWL-BW2	499	76	010509/1049	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓ 086943-020 ✓	MWL-BW2	499	76	010509/1050	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓ 086943-033 ✓	MWL-BW2	499	76	010509/1051	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓ 086943-034 ✓	MWL-BW2	499	76	010509/1052	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓ 086943-036 ✓	MWL-BW2	499	76	010509/1053	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	Sample Tracking	Smo Use
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy)	01/07/09
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by:	RK
Return Samples By:	☐ Negotiated TAT	QC inits.	WP

Special Instructions/QC Requirements
EDD ☑ Yes ☐ No
Level D Package ☐ Yes ☑ No
*Send report to:
Tim Jackson/Org 4133/MS 1087/505-284-2547
If Perchlorate dectected verify by using SW846-6850M
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
*Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch		RL	Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-4013/228-0710
	William Gibson			Weston/4133/284-4013/239-7367

1.Relinquished by	Org. 4133	Date 1/5/09	Time 1118	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4133	Date 1/5/09	Time 1118	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4133	Date 1/5/09	Time 1315	5.Relinquished by	Org.	Date	Time
2. Received by	Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 24, 2009

Client Sample ID:	086943-020	Project:	SNLSGWater
Sample ID:	221997007	Client ID:	SNLS003
Matrix:	AQUEOUS		
Collect Date:	05-JAN-09 10:50		
Receive Date:	06-JAN-09	Client Desc.:	MWL-BW2
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 01/08/09	1413	830878	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC 612074

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	1-6-09	Project/Task NO. 98026 .01.08 ✓	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No.	97167	SMO Authorization:	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436 ✓	
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SUB BOTTLE ORDER	☐ Released by COC No.:_____
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		☑ Validation Required
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		Bill To:Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO)

	Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preservative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
1	✓ 086946-001 ✓	MWL-MW7	493	76	010609/1049	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
2	✓ 086946-002 ✓	MWL-MW7	493	76	010609/1051	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
3	✓ 086946-009 ✓	MWL-MW7	493	76	010609/1052	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U(SW846-6020/7470)	
4	✓ 086946-010 ✓	MWL-MW7	493	76	010609/1053	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	
5	✓ 086946-016 ✓	MWL-MW7	493	76	010609/1054	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
6	✓ 086946-018 ✓	MWL-MW7	493	76	010609/1055	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
7	✓ 086946-020 ✓	MWL-MW7	493	76	010609/1056	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
8	✓ 086946-033 ✓	MWL-MW7	493	76	010609/1057	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
9	✓ 086946-034 ✓	MWL-MW7	493	76	010609/1059	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
10	✓ 086946-036 ✓	MWL-MW7	493	76	010609/1100	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	Sample Tracking	Smo Use
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy)	01/07/09
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by:	RK
Return Samples By:	☐ Negotiated TAT	QC inits.	WP

Special Instructions/QC Requirements
EDD ☑ Yes ☐ No
Level D Package ☐ Yes ☑ No
*Send report to:
Tim Jackson/Org 4133/MS 1087/505-284-2547
If Perchlorate dectected verify by using SW846-6850M
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
*Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch		RL	Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-4013/228-0710
	William Gibson			Weston/4133/284-4013/239-7367

1.Relinquished by	Org. 4133	Date 1/6/09	Time 1125	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4133	Date 1/6/09	Time 1125	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4133	Date 1/6/09	Time 1235	5.Relinquished by	Org.	Date	Time
2. Received by	Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 24, 2009

Client Sample ID:	086946-020	Project:	SNLSGWater
Sample ID:	221997019	Client ID:	SNLS003
Matrix:	AQUEOUS		
Collect Date:	06-JAN-09 10:56		
Receive Date:	07-JAN-09	Client Desc.:	MWL-MW7
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 01/14/09	1329	831431	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

AR/COC **612076**

SMO Use

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	1-12-09	Project/Task NO. 98026 .01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No:	97369	SMO Authorization:	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	☐ Released by COC No.:_____
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BELOW ORDER	☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO) 222375

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓ 086950-001 ✓	MWL-MW8	496.5	76	010709/1124	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓ 086950-002 ✓	MWL-MW8	496.5	76	010709/1126	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓ 086950-009 ✓	MWL-MW8	496.5	76	010709/1127	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U(SW846-6020/7470)	
✓ 086950-010 ✓	MWL-MW8	496.5	76	010709/1128	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	
✓ 086950-016 ✓	MWL-MW8	496.5	76	010709/1129	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓ 086950-018 ✓	MWL-MW8	496.5	76	010709/1130	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓ 086950-020 ✓	MWL-MW8	496.5	76	010709/1131	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓ 086950-033 ✓	MWL-MW8	496.5	76	010709/1133	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓ 086950-034 ✓	MWL-MW8	496.5	76	010709/1134	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓ 086950-036 ✓	MWL-MW8	496.5	76	010709/1135	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	Sample Tracking Smo Use	Special Instructions/QC Requirements
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy) 01/13/09	EDD ☑ Yes ☐ No
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by: RL	Level D Package ☐ Yes ☑ No
Return Samples By:	☐ Negotiated TAT	QC inits: CW	*Send report to:

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch			Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-4013/228-0710
	William Gibson			Weston/4133/284-4013/239-7367

Tim Jackson/Org 4133/MS 1087/505-284-2547

If Perchlorate dectected verify by using SW846-6850M

Major Anions/Br,Cl,Fl,SO4

FGW (filtered in field w/40 micron filter)

Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

1.Relinquished by	Alfred Santillanes	Org. 4133	Date 1/7/09	Time 12:15	4.Relinquished by	Org.	Date	Time
1. Received by	Robert Lynch	Org. 4133	Date 1/7/09	Time 12:15	4. Received by	Org.	Date	Time
2.Relinquished by	[illegible]	Org. 4133	Date 1/7/09	Time 12:15	5.Relinquished by	Org.	Date	Time
2. Received by	[illegible]	Org. 4133	Date 1/9/09	Time 17:15	5. Received by	Org.	Date	Time
3.Relinquished by	[illegible]	Org. 4133	Date 1/12/09	Time 0745	6.Relinquished by	Org.	Date	Time
3. Received by		Org.	Date	Time	6. Received by	Org.	Date	Time

OFF-SITE LABORATORY
Analysis Request And Chain Of Custody (Continuation)

AR/COC- 612076

Project Name:	MWL GWM	Project/Task Manger:	John Cochran	Project/Task No.:	98026 .01.08
Location	Tech Area				
Building	Room				

Reference LOV (available at SMO)

Sample No-Fraction	ER Sample ID or Sample Location detail	Pump Depth (ft)	ER Site No.	Date/Time (hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested.	Lab use: Lab Sample ID
086951-001	MWL-MW8	496.5	76	010709/1124	GW	G	3x40ml	HCL	G	DU	VOC (SW846-8260)	
086951-002	MWL-MW8	496.5	76	010709/1126	GW	AG	3x1L	4C	G	DU	SVOC (SW846-8270)	
086951-009	MWL-MW8	496.5	76	010709/1127	GW	P	500 ml	HNO3	G	DU	Total TAL Metals+Total U(SW846-6020/7470)	
086951-010	MWL-MW8	496.5	76	010709/1128	FGW	P	500 ml	HNO3	G	DU	TAL Metals+Total U(SW846-6020/7470)	
086951-016	MWL-MW8	496.5	76	010709/1129	GW	P	500 ml	4C	G	DU	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
086951-018	MWL-MW8	496.5	76	010709/1130	GW	P	250 ml	H2SO4	G	DU	NPN (353.2)	
086951-020	MWL-MW8	496.5	76	010709/1131	GW	P	250 ml	4C	G	DU	Perchlorate (314.0)	
086951-033	MWL-MW8	496.5	76	010709/1133	GW	P	1 Liter	HNO3	G	DU	Gamma Spec (short list 901.1)	
086951-034	MWL-MW8	496.5	76	010709/1134	GW	P	1 Liter	HNO3	G	DU	Gross Alpha/Beta (900.0)	
086951-036	MWL-MW8	496.5	76	010709/1135	GW	AG	250 ml	4C	G	DU	Tritium (906.0)	
086952-001	MWL-TB4	NA	NA	010709/1124	DIW	G	3x40ml	HCL	G	TB	VOC (SW846-8260)	

Abnormal Conditions on Receipt LAB USE

Recipient Initials _____

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 28, 2009

Client Sample ID: 086950-020
Sample ID: 222375029
Matrix: AQUEOUS
Collect Date: 07-JAN-09 11:31
Receive Date: 13-JAN-09
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW8

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR101/14/09	1453	831431	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 28, 2009

Client Sample ID: 086951-020
Sample ID: 222375039
Matrix: AQUEOUS
Collect Date: 07-JAN-09 11:31
Receive Date: 13-JAN-09
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW8

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 01/14/09	1509	831431	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC 612077

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	1-12-09	Project/Task NO. 98026 .01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran	Carrier/Waybill No:	9-7369	SMO Authorization:	
Project Name:	MWL GWM	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	
Record Center Code:	ER/076/DAT	Lab Destination:	GEL		☐ Released by COC No.: ☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185	GW bottles only	
Service Order No.	CF 001-09	Send Report to SMO:	Lorraine Herrera/505-844-3199		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO) 222375

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
086953-001	MWL-MW9	497	76	010809/0922	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
086953-002	MWL-MW9	497	76	010809/0924	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
086953-009	MWL-MW9	497	76	010809/0925	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U(SW846-6020/7470)	
086953-010	MWL-MW9	497	76	010809/0926	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	
086953-016	MWL-MW9	497	76	010809/0927	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
086953-018	MWL-MW9	497	76	010809/0928	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
086953-020	MWL-MW9	497	76	010809/0929	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
086953-033	MWL-MW9	497	76	010809/0930	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
086953-034	MWL-MW9	497	76	010809/0931	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
086953-036	MWL-MW9	497	76	010809/0932	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	**Sample Tracking** Smo Use	**Special Instructions/QC Requirements**
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy) 01/13/09	EDD ☑ Yes ☐ No
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by: RK	Level D Package ☐ Yes ☑ No
Return Samples By:	☐ Negotiated TAT	QC inits:	*Send report to:

Abnormal Conditions on Receipt

Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch		RL	Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-4013/228-0710
	William Gibson			Weston/4133/284-4013/239-7367

Tim Jackson/Org 4133/MS 1087/505-284-2547

If Perchlorate dectected verify by using SW846-6850M

LASt well in MWL

Major Anions/Br,Cl,Fl,SO4

FGW (-filtered in field w/40 micron filter)

*Please list as separate report.

1.Relinquished by	Org. 4133	Date 1/8/09	Time 10:10	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4137	Date 1/8/09	Time 10:10	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4139	Date 1/12/09	Time 0655	5.Relinquished by	Org.	Date	Time
2. Received by	Org. 4133	Date 1/12/09	Time 0655	5. Received by	Org.	Date	Time
3.Relinquished by	Org. 4132	Date 1/17/09	Time 0900	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 28, 2009

Client Sample ID: 086953-020
Sample ID: 222375007
Matrix: AQUEOUS
Collect Date: 08-JAN-09 09:29
Receive Date: 13-JAN-09
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW9

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MARI 01/14/09	1419	831431	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

Appendix B

Data Validation Sample Findings Summary Sheets for the Perchlorate Data

Sample Findings Summary

Site: MWL GWM **AR/COC:** 612016 and 612017 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA8260B (VOCs):	75-09-2 (methylene chloride)	67-64-1 (acetone)	75-27-4 (bromodichloromethane)	EPA8270C (SVOCs):	EPA6020 (ICP-MS):	15117-96-1 (U-235)	7440-70-2 (Ca)	7429-90-5 (Al)	7439-89-6 (Fe)	7440-61-1 (U-238)	EPA7470A (CVAA):	EPA9056 (Anions):	16887-00-6 (Chloride)	Nitrate/nitrite (EPA353.2):	N599 (nitrate/nitrite)	EPA314.0 (Perchlorate):	SM2320B (Alkalinity):
086812-001 MWL-BW2		UJ,I3			All Acceptance criteria met. No sample data will be qualified.							All Acceptance criteria met. No sample data will be qualified.					All Acceptance criteria met. No sample data will be qualified.	
086812-009 MWL-BW2							J+,DL2		0.042U,B		J,D1							
086812-010 MWL-BW2							J+,DL2		0.042U,B		J,D1							
086813-001 MWL-BW2		UJ,I3																
086813-009 MWL-BW2							J+,DL2		0.042U,B		J,D1							
086813-010 MWL-BW2							J+,DL2				J,D1							
086814-001 MWL-TB2		UJ,I3																
086810-001 MWL-EB1		UJ,I3	J-,C3	J+,C2														
086810-009 MWL-EB1								0.41U,B,B4			UJ,D1							
086810-010 MWL-EB1								0.41U,B,B4		0.063U,B	UJ,D1							
086810-016 MWL-EB1														0.55U,B,B3				
086810-018 MWL-EB1																UJ,B4		
086811-001 MWL-TB1		UJ,I3																

Validated By: David Schwartz **Date:** 12/10/08

Site: MWL GWM **AR/COC:** 612016 and 612017 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA901.1 (Gamma Spec):	86954-36-1 (Am-241)	10045-97-3 (Cs-137)	10198-40-0 (Co-60)	13966-00-2 (K-40)	EPA900.0 (Gross Alpha/Beta):	12587-46-1 (gross alpha)	12587-47-2 (gross beta)	EPA906.0 (Tritium):	10028-17-8 (tritium)
086812-033 MWL-BW2		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086812-034 MWL-BW2							J,FR7	J,FR7		
086812-036 MWL-BW2										BD,FR3
086813-033 MWL-BW2		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086813-034 MWL-BW2							J,FR7	J,FR7		
086813-036 MWL-BW2										BD,FR3
086810-033 MWL-EB1		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086810-034 MWL-EB1							BD,FR3	J,FR7		
086810-036 MWL-EB1										BD,FR3

Validated By: David Schmoll **Date:** 12/10/08

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: December 4, 2008

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: MWL GWM
AR/COC: 612016 and 612017
SDG: 216796
Laboratory: GEL
Project/Task No: 98026.01.08

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), EPA9056 (anions), and SM2320B (total alkalinity). Problems were identified with the data package that result in the qualification of data.

Anions Analysis:

Blanks: Chloride was detected in the method blank (MB) and the continuing calibration blank (CCB) analyzed on 10-3-08 at concentrations > the method detection limit (MDL) but < the practical quantitation limit (PQL). The associated result of sample 216796-026 was a detect <5X the MB concentration and <5X the CCB concentration and will be qualified "0.55U,B,B3" at 5X the value of the CCB (highest blank value).

Nitrate/nitrite Analysis:

Blanks: Nitrate/nitrite was detected in the CCB at a negative concentration with an absolute value > the MDL but < the PQL. The associated result of sample 216796-027 was a non-detect (ND) and will be qualified "UJ,B4."

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Anions Analysis: No target analytes were detected in the blanks, except as noted above in the summary section and the following. Chloride, fluoride, and sulfate were detected in one or more of the blanks at concentrations > the MDL but < the PQL. However, all associated sample results were either NDs, or detects >5X the MB concentration and/or CCB concentration and/or EB (equipment blank) concentration and will not be qualified. It should be noted that the fluoride detect result of the EB (sample 216796-026) was qualified "U" (ND) due to MB contamination and, therefore, cannot affect other field sample results.

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except as noted above in the summary section and the following. Nitrate/nitrite was detected in the CCB at a negative concentration with an absolute value > the MDL but < the PQL. However, the associated results of samples 216796-006 and -016 were detects >5X the MDL and will not be qualified. Nitrate/nitrite was also detected in the MB at a concentration > the MDL but < the PQL. However, all associated sample results were either NDs or detects >5X the MB concentration and will not be qualified.

Perchlorate Analysis: No target analytes were detected in the blanks.

Total Alkalinity Analysis: No target analytes were detected in the blanks, except the following. Total alkalinity was detected in the EB (sample 216796-026) at a concentration > the MDL but < the PQL. However, all associated sample results were detects >5X the EB concentration and will not be qualified.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met.

Detection Limits/Dilutions

All detection limits were properly reported. Samples 216796-005 and -015 were diluted 10X for chloride and sulfate and samples -006 and -016 were diluted 5X nitrate/nitrite due to high concentrations of the target analytes. Sample -027 was diluted 5X for nitrate/nitrite due to matrix interference. All associated batch QC samples were diluted at dilution factors that resulted in relative dilution factors to the samples that were ≤5X. No sample data will be qualified as a result. No other samples required dilution.

Other QC

No field blanks (FBs) were submitted on the AR/COCs. All relative percent differences (RPDs) of the field duplicates (FDs) (samples 216796-015, -016, and -017) were <20%. No QC acceptance criteria for the evaluation of FDs are currently in place.

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: MWL GWM **AR/COC:** 612018, 612019, and 612020 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA8260B (VOCs):	EPA8270C (SVOCs):	EPA6020 (ICP-MS):	15117-96-1 (U-235)	7440-36-0 (Sb)	7429-90-5 (Al)	7440-38-2 (As)	7439-95-4 (Mg)	7440-23-5 (Na)	EPA7470A (CVAA):	7439-97-6 (Hg)	EPA9056 (Anions):	EPA353.2 (Nitrate/nitrite):	N599 (nitrate/nitrite)	EPA314.0 (perchlorate)	SM2320B (Alkalinity):
086815-009 MWL-MW7	All Acceptance criteria met. No sample data will be qualified.			J+,DL2		0.043U,B	0.0087U,B	J,D1	J,D1		UJ,MS3	All Acceptance criteria met. No sample data will be qualified.			All Acceptance criteria met. No sample data will be qualified.	
086815-010 MWL-MW7				J+,DL2	0.014U,B3	0.043U,B	0.0087U,B	J,D1	J,D1		UJ,MS3					
086815-018 MWL-MW7														0.60U,B		
086817-009 MWL-MW8				J+,DL2				J,D1	J,D1		UJ,MS3					
086817-010 MWL-MW8				J+,DL2		0.043U,B		J,D1	J,D1		UJ,MS3					
086817-018 MWL-MW8														0.60U,B		
086820-009 MWL-MW9				J+,DL2			0.0087U,B	J,D1	J,D1		UJ,MS3					
086820-010 MWL-MW9				J+,DL2		0.043U,B	0.0087U,B	J,D1	J,D1		UJ,MS3					
086820-018 MWL-MW9														0.60U,B		

Sample ID	EPA901.1 (Gamma Spec):	86954-36-1 (Am-241)	10045-97-3 (Cs-137)	10198-40-0 (Co-60)	13966-00-2 (K-40)	EPA900.0 (Gross Alpha/Beta):	12587-46-1 (gross alpha)	12587-47-2 (gross beta)	EPA906.0 (Tritium):	10028-17-8 (tritium)
086815-033 MWL-MW7		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086815-034 MWL-MW7							J,FR7	J,FR7		
086815-036 MWL-MW7										BD,FR3
086817-033 MWL-MW8		BD,FR3	BD,FR3	BD,FR3	R,Z2					
086817-036 MWL-MW8										BD,FR3
086820-033 MWL-MW9		BD,FR3	BD,FR3	BD,FR3	BD,Z2					
086820-036 MWL-MW9										BD,FR3

Validated By: David Schmoll **Date:** 12/09/08

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: December 9, 2008

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: MWL GWM
AR/COC: 612018, 612019, and 612020
SDG: 217048
Laboratory: GEL
Project/Task No: 98026.01.08

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), EPA9056 (anions), and SM2320B (total alkalinity). Problems were identified with the data package that result in the qualification of data.

Nitrate/nitrite Analysis:

Blanks: Nitrate/nitrite was detected in the method blank (MB) at a concentration > the method detection limit (MDL) but < the practical quantitation limit (PQL). All associated sample results were detects <5X the MB concentration and will be qualified "0.60U,B" at 5X the value of the MB.

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except as noted above in the summary section

All Other Analyses: No target analytes were detected in the blanks. It should be noted that the MB analysis is not evaluated for total alkalinity.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed, except for the MSD analysis of the total alkalinity, which was not evaluated. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met.

Detection Limits/Dilutions

All detection limits were properly reported. Sample 217048-006 was diluted 10X for nitrate/nitrite and all samples were diluted 5X for chloride due to high concentrations of the target analytes. Samples -017 and -030 were diluted 5X for nitrate/nitrite due to matrix interference. All associated batch QC samples were diluted at dilution factors that resulted in relative dilution factors to the samples that were ≤5X. No sample data will be qualified as a result. No other samples required dilution.

Other QC

No equipment blanks (EBs), field blanks (FBs), or field duplicates (FDs) were submitted on the AR/COCs.

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: Burn Site GWM (LTS) **AR/COC:** 612119, 612120 **Data Type:** Organic & GenChem

	DRO	394878-87-0 (diesel range organics)
087046-005 CYN-MW3		UJ, H2
087047-005 CYN-MW6		UJ, H2

GRO, Nitrate/Nitrite, and Perchlorate analyses met QC acceptance criteria. No data should be qualified.

Validated By: Kevin A. Lambert

Kevin A. Lambert

Date: 04/10/09

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

Date: April 10, 2009

To: File

From: Kevin Lambert

Subject: Inorganic Data Review and Validation – SNL
Site: Burn Site GWM (LTS)
AR/COC: 612119 and 612120
SDG: 225384
Laboratory: GEL
Project/Task: 125778.10.11.01
Analysis: General Chemistry

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 2.

Summary

Two samples were prepared and analyzed with accepted procedures using method EPA 353.2 (nitrate/nitrite by Cd reduction). One sample was prepared and analyzed with accepted procedures using method EPA 314.0 (perchlorate). Data were reported for all required analytes. No problems were identified with the data package that result in the qualification of data.

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks.

Laboratory Control Sample (LCS)

All LCS recoveries met QC acceptance criteria.

Matrix Spike (MS)

The MS met QC acceptance criteria.

Replicate

The replicate met QC acceptance criteria.

Detection Limits/Dilutions

All detection limits were properly reported. Sample 225384-003 was diluted 25X and sample -006 was diluted 100X due to high concentrations for nitrate/nitrite.

Other QC

No other specific issues that affect data quality were identified.

Sample Findings Summary

Site: MWL GWM **AR/COC:** 612073 and 612074 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA8260B (VOCs):	EPA8270C (SVOCs):	EPA6020 (ICP-MS):	7440-02-0 (Ni)	EPA7470A (CVAA):	EPA9056 (Anions):	EPA353.2 (Nitrate/nitrite):	EPA314.0 (perchlorate)	SM2320B (Alkalinity):		
086943-009 MWL-BW2	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.		J+,DL2	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.		
086943-010 MWL-BW2				J+,DL2							
086946-009 MWL-MW7				J+,DL2							
086946-010 MWL-MW7				J+,DL2							

Sample ID	EPA901.1 (Gamma Spec):	86954-36-1 (Am-241)	10045-97-3 (Cs-137)	10198-40-0 (Co-60)	13966-00-2 (K-40)	EPA900.0 (Gross Alpha/Beta):	12587-46-1 (gross alpha)	12587-47-2 (gross beta)	EPA906.0 (Tritium):	10028-17-8 (tritium)	
086943-033 MWL-BW2		BD,FR3	BD,FR3	BD,FR3	BD,FR3						
086943-034 MWL-BW2							J+,FR7,MS2	J,FR7			
086943-036 MWL-BW2										BD,FR3	
086946-033 MWL-MW7		BD,FR3	BD,FR3	BD,FR3	BD,FR3						
086946-034 MWL-MW7							J+,MS2	J,FR7			
086946-036 MWL-MW7										BD,FR3	

Validated By: David Schwent **Date:** 02/13/09

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: February 13, 2009

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: MWL GWM
AR/COC: 612073 and 612074
SDG: 221997
Laboratory: GEL
Project/Task No: 98026.01.08

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), EPA9056 (anions), and SM2320B (total alkalinity). No problems were identified with the data package that result in the qualification of data.

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except the following. Nitrate/nitrite was detected in the initial calibration blank (ICB) and continuing calibration blank (CCB) at negative concentration with absolute values > the method detection limit (MDL) but < the practical quantitation limit (PQL). However, all associated sample results were detects >5X the MDL and will not be qualified.

All Other Analyses: No target analytes were detected in the blanks. It should be noted that the method blank (MB) analysis is not evaluated for total alkalinity.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed. No sample data will be qualified as a result. It should be noted that the MS analysis for nitrate/nitrite was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met. It should be noted that the laboratory replicate analysis for nitrate/nitrite was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Detection Limits/Dilutions

All detection limits were properly reported. Sample 221997-005 was diluted 5X for chloride and sulfate and sample -017 diluted 5X for chloride due to high concentrations of the target analytes. Sample -006 was diluted 10X and sample -018 was diluted 25X for nitrate/nitrite due to high concentrations of the target analyte. All associated batch QC samples were diluted at dilution factors that resulted in relative dilution factors to the samples that were ≤5X. No sample data will be qualified as a result. No other samples required dilution.

Other QC

No equipment blanks (EBs), field blanks (FBs), or field duplicates (FDs) were submitted on the AR/COCs.

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: MWL GWM **AR/COC:** 612075, 612076, and 612077 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA8260B (VOCs):	67-64-1 (acetone)	EPA8270C (SVOCs):	117-84-0 (di-n-octylphthalate)	EPA6020 (ICP-MS):	7440-70-2 (Ca)	7440-47-3 (Cr)	7440-50-8 (Cu)	EPA7470A (CVAA):	EPA314.0 (perchlorate)	EPA9056 (Anions):	SM2320B (Alkalinity):	EPA353.2 (Nitrate/nitrite):	N599 (nitrate/nitrite)
086953-002 MWL-MW9				UJ,MS5					All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.		
086948-002 MWL-EB1				UJ,MS5										
086948-009 MWL-EB1						0.20U,B								
086948-010 MWL-EB1						0.20U,B								
086948-018 MWL-EB1														UJ,B4
086950-001 MWL-MW8		10.0U,B2												
086950-002 MWL-MW8				UJ,MS5										
086950-009 MWL-MW8							0.011U,B2	0.0049U,B2						
086950-010 MWL-MW8							0.011U,B2	0.0049U,B2						
086951-001 MWL-MW8		10.0U,B2												
086951-002 MWL-MW8				UJ,MS5										
086951-009 MWL-MW8							0.011U,B2	0.0049U,B2						
086951-010 MWL-MW8							0.011U,B2	0.0049U,B2						

Sample ID	EPA901.1 (Gamma Spec):	86954-36-1 (Am-241)	10045-97-3 (Cs-137)	10198-40-0 (Co-60)	13966-00-2 (K-40)	EPA900.0 (Gross Alpha/Beta):	12587-46-1 (gross alpha)	12587-47-2 (gross beta)	EPA906.0 (Tritium):	10028-17-8 (tritium)
086953-033 MWL-MW9		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086953-036 MWL-MW9										BD,FR3
086948-033 MWL-EB1		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086948-034 MWL-EB1							BD,FR3	BD,FR3		
086948-036 MWL-EB1										BD,FR3
086950-033 MWL-MW8		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086950-036 MWL-MW8										BD,FR3
086951-033 MWL-MW8		BD,FR3	BD,FR3	BD,FR3	R,Z2					
086951-036 MWL-MW8										BD,FR3

Validated By: David Schwartz **Date:** 02/27/09

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: February 26, 2009

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: MWL GWM
AR/COC: 612075, 612076, and 612077
SDG: 222375
Laboratory: GEL
Project/Task No: 98026.01.08

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), EPA9056 (anions), and SM2320B (total alkalinity). Problems were identified with the data package that result in the qualification of data.

Nitrate/nitrite Analysis:

Blanks: Nitrate/nitrite was detected in the initial calibration blank (ICB) and continuing calibration blank (CCB) at negative concentrations with absolute values > the method detection limit (MDL) but < the practical quantitation limit (PQL). The associated result of sample 222375-017 was a non-detect (ND) and will be qualified "UJ,B4."

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except as noted above in the summary section.

Anions Analysis: No target analytes were detected in the blanks, except the following. Chloride was detected in the equipment blank (EB) (sample 222375-016) at a concentration > the MDL but < the PQL. However, all associated sample results were NDs and will not be qualified.

All Other Analyses: No target analytes were detected in the blanks. It should be noted that the blanks analysis is not evaluated for total alkalinity.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed. No sample data will be qualified as a result. It should be noted that the MS analysis for perchlorate was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met. It should be noted that the laboratory replicate analysis for perchlorate was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Detection Limits/Dilutions

All detection limits were properly reported. Samples 222375-017, -028, and -038 were diluted 5X for nitrate/nitrite and samples -005, -027, and -037 were diluted 10X for chloride due to high concentrations of the target analytes. Sample -006 diluted 25X for nitrate/nitrite due to matrix interference. All associated batch QC samples were diluted at dilution factors that resulted in relative dilution factors to the samples that were ≤5X. No sample data will be qualified as a result. No other samples required dilution.

Other QC

No field blanks (FBs) were submitted on the AR/COCs. All relative percent differences (RPDs) of the field duplicates (FDs) (samples 222375-037, -038, and -039) were <20%. No QC acceptance criteria for the evaluation of FDs are currently in place.

No other specific issues were identified which affect data quality.

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC 612017

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	10/1/08	Project/Task NO. 98026 .01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No.	94564	SMO Authorization:	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	968 BOTTLE ORDER	☐ Released by COC No.: ☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO)

	Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓	✓086812-001 ✓	MWL-BW2	499	76	100108/ 1056	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓	✓ 086812-002 ✓	MWL-BW2	499	76	100108/ 1058	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓	✓ 086812-009 ✓	MWL-BW2	499	76	100108/ 1059	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U,U-235,U-238	
✓	✓ 086812-010 ✓	MWL-BW2	499	76	100108/ 1100	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U,U-235,U-238	
✓	✓ 086812-016 ✓	MWL-BW2	499	76	100108/ 1101	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓	✓ 086812-018 ✓	MWL-BW2	499	76	100108/ 1102	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓	✓ 086812-020 ✓	MWL-BW2	499	76	100108/ 1103	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓	✓ 086812-033 ✓	MWL-BW2	499	76	100108/ 1104	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓	✓ 086812-034 ✓	MWL-BW2	499	76	100108/ 1105	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓	✓ 086812-036 ✓	MWL-BW2	499	76	100108/ 1106	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No	No.	Sample Tracking Smo Use
Sample Disposal	☐ Return to Client	☑ Disposal by lab	Date Entered(mm/dd/yy) 10/07/08
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day		Entered by:
Return Samples By:		☐ Negotiated TAT	QC mits

Special Instructions/QC Requirements
EDD ☑ Yes ☐ No
Level D Package ☐ Yes ☑ No
*Send report to:
Tim Jackson/Org 4133/MS 1087/505-284-2547

Total TAL&TAL Metals EPA Method (SW 846-6020/7470)
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
*Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

	Name	Signature	Init	Company/Organization/Phone/Cellular
Sample Team Members	Robert Lynch	Robert Lynch	RL	Weston/4133/844-4013/250-7090
	Alfred Santillanes	Alfred Santillanes		Weston/4133/844-5130/228-0710
	William Gibson	William Gibson		Weston/4133/284-5232/239-7367

1.Relinquished by Alfred Santillanes	Org. 4133	Date 10/1/08	Time 1305	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4133	Date 10/1/08	Time 1305	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4133	Date 10/1/08	Time 1355	5.Relinquished by	Org.	Date	Time
2. Received by	Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

OFF-SITE LABORATORY
Analysis Request And Chain Of Custody (Continuation)

AR/COC- 612017

Project Name:	MWL GWM	Project/Task Manger:	John Cochran	Project/Task No.:	98026.01.08
Location	Tech Area				
Building	Room				

Reference LOV (available at SMO)

Sample No-Fraction	ER Sample ID or Sample Location detail	Pump Depth (ft)	ER Site No.	Date/Time (hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab use: Lab Sample ID
086813-001	MWL-BW2	499	76	100108/ 1056	GW	G	3x40ml	HCL	G	DU	VOC (SW846-8260)	
086813-002	MWL-BW2	499	76	100108/ 1058	GW	AG	3x1L	4C	G	DU	SVOC (SW846-8270)	
086813-009	MWL-BW2	499	76	100108/ 1059	GW	P	500 ml	HNO3	G	DU	Total TAL Metals+Total U,U-235,U-238	
086813-010	MWL-BW2	499	76	100108/ 1100	FGW	P	500 ml	HNO3	G	DU	TAL Metals+Total U,U-235,U-238	
086813-016	MWL-BW2	499	76	100108/ 1101	GW	P	500 ml	4C	G	DU	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
086813-018	MWL-BW2	499	76	100108/ 1102	GW	P	250 ml	H2SO4	G	DU	NPN (353.2)	
086813-020	MWL-BW2	499	76	100108/ 1103	GW	P	250 ml	4C	G	DU	Perchlorate (314.0)	
086813-033	MWL-BW2	499	76	100108/ 1104	GW	P	1 Liter	HNO3	G	DU	Gamma Spec (short list 901.1)	
086813-034	MWL-BW2	499	76	100108/ 1105	GW	P	1 Liter	HNO3	G	DU	Gross Alpha/Beta (900.0)	
086813-036	MWL-BW2	499	76	100108/ 1106	GW	AG	250 ml	4C	G	DU	Tritium (906.0)	
086814-001	MWL-TB2	NA	NA	100108/ 1056	DIW	G	3x40ml	HCL	G	TB	VOC (SW846-8260)	

Abnormal Conditions on Receipt

LAB USE

Recipient Initials

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 25, 2008

Client Sample ID: 086813-020
Sample ID: 216796017
Matrix: AQUEOUS
Collect Date: 01-OCT-08 11:03
Receive Date: 02-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-BW2

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/03/08	1639	801457	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 25, 2008

Client Sample ID: 086812-020
Sample ID: 216796007
Matrix: AQUEOUS
Collect Date: 01-OCT-08 11:03
Receive Date: 02-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-BW2

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/03/08	1550	801457	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC **612018**

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	10-6-08	Project/Task NO. 98026 .01.08 ✓	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No:	94512	SMO Authorization: Other SMO	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	☐ Released by COC No.:
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BOTTOM ORDER	☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable)
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		P.O. Box 5800 MS 0154
Location	Tech Area				Albuquerque, NM 87185-0154
Building	Room			**Reference LOV(available at SMO)** 217048	

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓ 086815-001	MWL-MW7	493	76	100608/0911	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓ 086815-002	MWL-MW7	493	76	100608/0912	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓ 086815-009	MWL-MW7	493	76	100608/0913	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U,U-235,U-238	
✓ 086815-010	MWL-MW7	493	76	100608/0914	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U,U-235,U-238	
✓ 086815-016	MWL-MW7	493	76	100608/0915	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓ 086815-018	MWL-MW7	493	76	100608/0916	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓ 086815-020	MWL-MW7	493	76	100608/0917	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓ 086815-033	MWL-MW7	493	76	100608/0918	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓ 086815-034	MWL-MW7	493	76	100608/0919	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓ 086815-036	MWL-MW7	493	76	100608/0920	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA ☐ Yes ☑ No No.	**Sample Tracking** Smo Use	**Special Instructions/QC Requirements**	Abnormal Conditions on Receipt
Sample Disposal ☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy): 10/09/08	EDD ☑ Yes ☐ No	
Turnaround Time ☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by: RL	Level D Package ☐ Yes ☑ No	
Return Samples By:	☐ Negotiated TAT QC inits:	*Send report to: Tim Jackson/Org 4133/MS 1087/505-284-2547	Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch	[signature]	RL	Weston/4133/844-4013/250-7090
	William Gibson	[signature]	WG	Weston/4133/284-5232/239-7367

Total TAL&TAL Metals EPA Method (SW 846-6020/7470)
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
Please list as separate report.

1.Relinquished by [signature]	Org. 4133	Date 10/6/08	Time 1005	4.Relinquished by	Org.	Date	Time
1. Received by [signature]	Org. 4133	Date 10/6/08	Time 1005	4. Received by	Org.	Date	Time
2.Relinquished by [signature]	Org. 4133	Date 10/6/08	Time 1250	5.Relinquished by	Org.	Date	Time
2. Received by	Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 29, 2008

Client Sample ID: 086815-020
Sample ID: 217048007
Matrix: AQUEOUS
Collect Date: 06-OCT-08 09:17
Receive Date: 07-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW7

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/09/08	1829	803324	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC **612019**

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	10-7-08	Project/Task NO. 98026.01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No.	94678	SMO Authorization:	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	☐ Released by COC No.:
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BOTTLE ORDER	☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO)

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓ 086817-001 ✓	MWL-MW8	496.5	76	100708/1112	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓ 086817-002 ✓	MWL-MW8	496.5	76	100708/1113	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓ 086817-009 ✓	MWL-MW8	496.5	76	100708/1115	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U,U-235,U-238	
✓ 086817-010 ✓	MWL-MW8	496.5	76	100708/1117	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U,U-235,U-238	
✓ 086817-016 ✓	MWL-MW8	496.5	76	100708/1118	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓ 086817-018 ✓	MWL-MW8	496.5	76	100708/1119	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓ 086817-020 ✓	MWL-MW8	496.5	76	100708/1120	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓ 086817-033 ✓	MWL-MW8	496.5	76	100708/1121	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓ 086817-034 ✓	MWL-MW8	496.5	76	100708/1122	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓ 086817-036 ✓	MWL-MW8	496.5	76	100708/1123	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	**Sample Tracking**	Smo Use
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy)	10/09/08
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by:	RC
Return Samples By:	☐ Negotiated TAT	QC inits.	

Special Instructions/QC Requirements

EDD ☑ Yes ☐ No

Level D Package ☐ Yes ☑ No

*Send report to:

Tim Jackson/Org 4133/MS 1087/505-284-2547

Total TAL&TAL Metals EPA Method (SW 846-6020/7470)

Major Anions/Br,Cl,Fl,SO4

FGW (filtered in field w/40 micron filter)

Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch	[signature]	RL	Weston/4133/844-4013/250-7090
	William Gibson	[signature]		Weston/4133/284-5232/239-7367

1.Relinquished by	[signature]	Org. 4133	Date 10/7/08	Time 1150	4.Relinquished by	Org.	Date	Time
1. Received by	[signature]	Org. 4133	Date 10/7/08	Time 1150	4. Received by	Org.	Date	Time
2.Relinquished by	[signature]	Org. 4133	Date 10/7/08	Time 1300	5.Relinquished by	Org.	Date	Time
2. Received by		Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by		Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by		Org.	Date	Time	6. Received by	Org.	Date	Time

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 29, 2008

Client Sample ID: 086817-020
Sample ID: 217048018
Matrix: AQUEOUS
Collect Date: 07-OCT-08 11:20
Receive Date: 08-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW8

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/09/08	1919	803324	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

AR/COC 612020

SMO Use

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	10/8/08	Project/Task NO. 98026 .01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran	Carrier/Waybill No:	947-46	SMO Authorization	
Project Name:	MWL GWM	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	☐ Released by COC No.:
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BOTTLE ORDER	☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Service Order No.	CF 001-09	Send Report to SMO:	Lorraine Herrera/505-844-3199		
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO)

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
086820-001	MWL-MW9	497	76	100808/1048	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
086820-002	MWL-MW9	497	76	100808/1049	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
086820-009	MWL-MW9	497	76	100808/1051	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U,U-235,U-238	
086820-010	MWL-MW9	497	76	100808/1053	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U,U-235,U-238	
086820-016	MWL-MW9	497	76	100808/1054	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
086820-018	MWL-MW9	497	76	100808/1055	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
086820-020	MWL-MW9	497	76	100808/1056	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
086820-033	MWL-MW9	497	76	100808/1057	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
086820-034	MWL-MW9	497	76	100808/1058	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
086820-036	MWL-MW9	497	76	100808/1059	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA ☐ Yes ☑ No No.

Sample Disposal ☐ Return to Client ☑ Disposal by lab

Turnaround Time ☐ 7 Day ☐ 15 Day ☑ 30 Day

Return Samples By: ☐ Negotiated TAT

Sample Tracking Smo Use
Date Entered(mm/dd/yy) 10/09/08
Entered by: RK
QC Initials: LW

Special Instructions/QC Requirements
EDD ☑ Yes ☐ No
Level D Package ☐ Yes ☑ No
*Send report to:
Tim Jackson/Org 4133/MS 1087/505-284-2547
LAST WELL for MWL-PROJECT 1st quarter
Total TAL&TAL Metals EPA Method (SW 846-6020/7470)
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
*Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

Sample Team Members

Name	Signature	Init	Company/Organization/Phone/Cellular
Robert Lynch	Robert Lynch	RL	Weston/4133/844-4013/250-7090
William Gibson	William Gibson	WG	Weston/4133/284-5232/239-7367

1.Relinquished by Robert Lynch	Org. 4133	Date 10-8-08	Time 1100	4.Relinquished by	Org.	Date	Time
1. Received by T. Fuller	Org 4133	Date 10-8-08	Time 1100	4. Received by	Org.	Date	Time
2.Relinquished by T. Fuller	Org. 4133	Date 10-8-08	Time 1120	5.Relinquished by	Org.	Date	Time
2. Received by	Org. 4133	Date 10-8-08	Time 1120	5. Received by	Org.	Date	Time
3.Relinquished by	Org 4133	Date 10-8-08	Time 1300	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: October 29, 2008

Client Sample ID: 086820-020
Sample ID: 217048031
Matrix: AQUEOUS
Collect Date: 08-OCT-08 10:56
Receive Date: 09-OCT-08
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW9

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 10/15/08	1311	804304	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC **612120**

Dept. No./Mail Stop:	4133/1089	Date Samples Shipped:	3/2/09	Project/Task No.125778.10.11.03	☐ Waste Characterization
Project/Task Manager:	Don Schofield	Carrier/Waybill No.	99024	SMO Authorization:	-Send preliminary/copy report to:
Project Name:	Burn Site GWM	Lab Contact:	Edie Kent/803-556-8171	Contract #: PO 691436	☐ Released by COC No.:
Record Center Code:	ER/1333/DAT	Lab Destination:	GEL		☑ Validation Required
Logbook Ref. No.:	ER 058	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable)
Service Order No.	CF#058-09	Send Report to SMO:	Lorraine Herrera/505-844-3199		P.O. Box 5800 MS 0154
Location	Tech Area				Albuquerque, NM 87185-0154
Building	Room				

Reference LOV(available at SMO)

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
087047-005	CYN-MW6	163	NA	030209/1023	GW	AG	4x1 L	4C	G	SA	TPH Diesel (SW846-8015A/B) SVOC	004 .1
087047-006	CYN-MW6	163	NA	030209/1024	GW	G	3x40 ml	HCL	G	SA	TPH Gasoline (SW846-8015A/B) VOC	005 .2
087047-018	CYN-MW6	163	NA	030209/1025	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	006 .3
087047-020	CYN-MW6	163	NA	030209/1026	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	007 .4

RMMA ☐ Yes ☑ No Ref. No.

Sample Disposal ☐ Return to Client ☑ Disposal by lab

Turnaround Time ☐ 7 Day ☐ 15 Day ☑ 30 Day

Sample Tracking Smo Use

Date Entered(mm/dd/yy)

Entered by:

Special Instructions/QC Requirements

EDD ☑ Yes ☐ No

Level D Package ☐ Yes ☑ No

Abnormal Conditions on Receipt

Lab Use

Return Samples By: ☐ Negotiated TAT QC inits.

Sample Team Members	Name	Signature	Init.	Company/Organization/Phone/Cellular
	William J Gibson			Weston/4133/284-5232/239-7367
	Robert Lynch			Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-5130/228-0710

*Send report to:

Tim Jackson/Org.4133/MS 1089/505-284-2547

Last well for Burn Site project

Please list as separate report.

1.Relinquished by	Org. 4133	Date 3/2/09	Time 1100	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4133	Date 3/2/09	Time 1100	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4133	Date 3/2/09	Time 1215	5.Relinquished by	Org.	Date	Time
2. Received by	Org. GEL	Date 3-3-09	Time 0925	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: March 28, 2009

Client Sample ID: 087047-020
Sample ID: 225384007
Matrix: AQUEOUS
Collect Date: 02-MAR-09 10:26
Receive Date: 03-MAR-09
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: CYN-MW6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography Federal											
EPA 314.0 Perchlorate by IC "As Received"											
Perchlorate	J	0.00724	0.004	0.012	mg/L	1	MAR1	03/10/09	1059	848356	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

AR/COC 612073

SMO Use

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	1/5/09	Project/Task NO. 98026 .01.08	☐ Waste Characterization
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No.	96823	SMO Authorization:	-Send preliminary/copy report to:
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BOTTLE ORDER	☐ Released by COC No.:
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		☑ Validation Required
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		Bill To: Sandia National Labs (Accounts Payable)
Location	Tech Area				P.O. Box 5800 MS 0154
Building	Room	Reference LOV(available at SMO)	221997		Albuquerque, NM 87185-0154

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓ 086943-001 ✓	MWL-BW2	499	76	010509/1043	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓ 086943-002 ✓	MWL-BW2	499	76	010509/1044	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓ 086943-009 ✓	MWL-BW2	499	76	010509/1046	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U(SW846-6020/7470)	
✓ 086943-010 ✓	MWL-BW2	499	76	010509/1047	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	
✓ 086943-016 ✓	MWL-BW2	499	76	010509/1048	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓ 086943-018 ✓	MWL-BW2	499	76	010509/1049	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓ 086943-020 ✓	MWL-BW2	499	76	010509/1050	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓ 086943-033 ✓	MWL-BW2	499	76	010509/1051	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓ 086943-034 ✓	MWL-BW2	499	76	010509/1052	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓ 086943-036 ✓	MWL-BW2	499	76	010509/1053	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	Sample Tracking	Smo Use
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy)	01/07/09
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by:	RK
Return Samples By:	☐ Negotiated TAT	QC inits.	WP

Special Instructions/QC Requirements
EDD ☑ Yes ☐ No
Level D Package ☐ Yes ☑ No
*Send report to:
Tim Jackson/Org 4133/MS 1087/505-284-2547
If Perchlorate dectected verify by using SW846-6850M
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
*Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch		RL	Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-4013/228-0710
	William Gibson			Weston/4133/284-4013/239-7367

1.Relinquished by	Org. 4133	Date 1/5/09	Time 1118	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4133	Date 1/5/09	Time 1118	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4133	Date 1/5/09	Time 1315	5.Relinquished by	Org.	Date	Time
2. Received by	Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 24, 2009

Client Sample ID:	086943-020	Project:	SNLSGWater
Sample ID:	221997007	Client ID:	SNLS003
Matrix:	AQUEOUS		
Collect Date:	05-JAN-09 10:50		
Receive Date:	06-JAN-09	Client Desc.:	MWL-BW2
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 01/08/09	1413	830878	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC 612074

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	1-6-09	Project/Task NO. 98026 .01.08 ✓	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No.	97167	SMO Authorization:	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436 ✓	
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SUB BOTTLE ORDER	☐ Released by COC No.:_____
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		☑ Validation Required
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		Bill To:Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO)

	Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preservative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
1	✓ 086946-001 ✓	MWL-MW7	493	76	010609/1049	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
2	✓ 086946-002 ✓	MWL-MW7	493	76	010609/1051	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
3	✓ 086946-009 ✓	MWL-MW7	493	76	010609/1052	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U(SW846-6020/7470)	
4	✓ 086946-010 ✓	MWL-MW7	493	76	010609/1053	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	
5	✓ 086946-016 ✓	MWL-MW7	493	76	010609/1054	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
6	✓ 086946-018 ✓	MWL-MW7	493	76	010609/1055	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
7	✓ 086946-020 ✓	MWL-MW7	493	76	010609/1056	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
8	✓ 086946-033 ✓	MWL-MW7	493	76	010609/1057	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
9	✓ 086946-034 ✓	MWL-MW7	493	76	010609/1059	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
10	✓ 086946-036 ✓	MWL-MW7	493	76	010609/1100	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	Sample Tracking	Smo Use
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy)	01/07/09
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by:	RK
Return Samples By:	☐ Negotiated TAT	QC inits.	WP

Special Instructions/QC Requirements
EDD ☑ Yes ☐ No
Level D Package ☐ Yes ☑ No
*Send report to:
Tim Jackson/Org 4133/MS 1087/505-284-2547
If Perchlorate dectected verify by using SW846-6850M
Major Anions/Br,Cl,Fl,SO4
FGW (filtered in field w/40 micron filter)
*Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch		RL	Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-4013/228-0710
	William Gibson			Weston/4133/284-4013/239-7367

1.Relinquished by	Org. 4133	Date 1/6/09	Time 1125	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4133	Date 1/6/09	Time 1125	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4133	Date 1/6/09	Time 1235	5.Relinquished by	Org.	Date	Time
2. Received by	Org.	Date	Time	5. Received by	Org.	Date	Time
3.Relinquished by	Org.	Date	Time	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 24, 2009

Client Sample ID:	086946-020	Project:	SNLSGWater
Sample ID:	221997019	Client ID:	SNLS003
Matrix:	AQUEOUS		
Collect Date:	06-JAN-09 10:56		
Receive Date:	07-JAN-09	Client Desc.:	MWL-MW7
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 01/14/09	1329	831431	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

AR/COC **612076**

SMO Use

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	1-12-09	Project/Task NO. 98026 .01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran ✓	Carrier/Waybill No:	97369	SMO Authorization:	
Project Name:	MWL GWM ✓	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	☐ Released by COC No.:_____
Record Center Code:	ER/076/DAT	Lab Destination:	GEL	SEE BELOW ORDER	☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Service Order No.	CF 001-09 ✓	Send Report to SMO:	Lorraine Herrera/505-844-3199		
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO) 222375

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
✓ 086950-001 ✓	MWL-MW8	496.5	76	010709/1124	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
✓ 086950-002 ✓	MWL-MW8	496.5	76	010709/1126	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
✓ 086950-009 ✓	MWL-MW8	496.5	76	010709/1127	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U(SW846-6020/7470)	
✓ 086950-010 ✓	MWL-MW8	496.5	76	010709/1128	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	
✓ 086950-016 ✓	MWL-MW8	496.5	76	010709/1129	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
✓ 086950-018 ✓	MWL-MW8	496.5	76	010709/1130	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
✓ 086950-020 ✓	MWL-MW8	496.5	76	010709/1131	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
✓ 086950-033 ✓	MWL-MW8	496.5	76	010709/1133	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
✓ 086950-034 ✓	MWL-MW8	496.5	76	010709/1134	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
✓ 086950-036 ✓	MWL-MW8	496.5	76	010709/1135	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	Sample Tracking Smo Use	Special Instructions/QC Requirements
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy) 01/13/09	EDD ☑ Yes ☐ No
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by: RL	Level D Package ☐ Yes ☑ No
Return Samples By:	☐ Negotiated TAT	QC inits: CW	*Send report to:

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch			Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-4013/228-0710
	William Gibson			Weston/4133/284-4013/239-7367

Tim Jackson/Org 4133/MS 1087/505-284-2547

If Perchlorate dectected verify by using SW846-6850M

Major Anions/Br,Cl,Fl,SO4

FGW (filtered in field w/40 micron filter)

Please list as separate report.

Abnormal Conditions on Receipt

Lab Use

1.Relinquished by	Alfred Santillanes	Org. 4133	Date 1/7/09	Time 12:15	4.Relinquished by	Org.	Date	Time
1. Received by	Robert Lynch	Org. 4133	Date 1/7/09	Time 12:15	4. Received by	Org.	Date	Time
2.Relinquished by	[illegible]	Org. 4133	Date 1/7/09	Time 12:15	5.Relinquished by	Org.	Date	Time
2. Received by	[illegible]	Org. 4133	Date 1/9/09	Time 17:15	5. Received by	Org.	Date	Time
3.Relinquished by	[illegible]	Org. 4133	Date 1/12/09	Time 0745	6.Relinquished by	Org.	Date	Time
3. Received by		Org.	Date	Time	6. Received by	Org.	Date	Time

OFF-SITE LABORATORY
Analysis Request And Chain Of Custody (Continuation)

AR/COC- 612076

Project Name:	MWL GWM	Project/Task Manger:	John Cochran	Project/Task No.:	98026 .01.08
Location	Tech Area				
Building	Room				

Reference LOV (available at SMO)

Sample No-Fraction	ER Sample ID or Sample Location detail	Pump Depth (ft)	ER Site No.	Date/Time (hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested.	Lab use: Lab Sample ID
086951-001	MWL-MW8	496.5	76	010709/1124	GW	G	3x40ml	HCL	G	DU	VOC (SW846-8260)	
086951-002	MWL-MW8	496.5	76	010709/1126	GW	AG	3x1L	4C	G	DU	SVOC (SW846-8270)	
086951-009	MWL-MW8	496.5	76	010709/1127	GW	P	500 ml	HNO3	G	DU	Total TAL Metals+Total U(SW846-6020/7470)	
086951-010	MWL-MW8	496.5	76	010709/1128	FGW	P	500 ml	HNO3	G	DU	TAL Metals+Total U(SW846-6020/7470)	
086951-016	MWL-MW8	496.5	76	010709/1129	GW	P	500 ml	4C	G	DU	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
086951-018	MWL-MW8	496.5	76	010709/1130	GW	P	250 ml	H2SO4	G	DU	NPN (353.2)	
086951-020	MWL-MW8	496.5	76	010709/1131	GW	P	250 ml	4C	G	DU	Perchlorate (314.0)	
086951-033	MWL-MW8	496.5	76	010709/1133	GW	P	1 Liter	HNO3	G	DU	Gamma Spec (short list 901.1)	
086951-034	MWL-MW8	496.5	76	010709/1134	GW	P	1 Liter	HNO3	G	DU	Gross Alpha/Beta (900.0)	
086951-036	MWL-MW8	496.5	76	010709/1135	GW	AG	250 ml	4C	G	DU	Tritium (906.0)	
086952-001	MWL-TB4	NA	NA	010709/1124	DIW	G	3x40ml	HCL	G	TB	VOC (SW846-8260)	

Abnormal Conditions on Receipt LAB USE

Recipient Initials _____

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 28, 2009

Client Sample ID: 086950-020
Sample ID: 222375029
Matrix: AQUEOUS
Collect Date: 07-JAN-09 11:31
Receive Date: 13-JAN-09
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW8

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR101/14/09	1453	831431	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 28, 2009

Client Sample ID: 086951-020
Sample ID: 222375039
Matrix: AQUEOUS
Collect Date: 07-JAN-09 11:31
Receive Date: 13-JAN-09
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW8

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MAR1 01/14/09	1509	831431	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. N/A

SMO Use

AR/COC 612077

Dept. No./Mail Stop:	6765/MS 1089	Date Samples Shipped:	1-12-09	Project/Task NO. 98026 .01.08	☐ Waste Characterization -Send preliminary/copy report to:
Project/Task Manager:	John Cochran	Carrier/Waybill No:	9-7369	SMO Authorization:	
Project Name:	MWL GWM	Lab Contact:	Edie Kent/803-556-8171	Contract # 691436	
Record Center Code:	ER/076/DAT	Lab Destination:	GEL		☐ Released by COC No.: ☑ Validation Required
Logbook Ref. No.:	ER 032	SMO Contact/Phone:	Pam Puissant/505-844-3185	GW bottles only	
Service Order No.	CF 001-09	Send Report to SMO:	Lorraine Herrera/505-844-3199		Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154
Location	Tech Area				
Building	Room				

Reference LOV(available at SMO) 222375

Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time(hr) Collected	Sample Matrix	Container Type	Container Volume	Preserv-ative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
086953-001	MWL-MW9	497	76	010809/0922	GW	G	3x40ml	HCL	G	SA	VOC (SW846-8260)	
086953-002	MWL-MW9	497	76	010809/0924	GW	AG	3x1L	4C	G	SA	SVOC (SW846-8270)	
086953-009	MWL-MW9	497	76	010809/0925	GW	P	500 ml	HNO3	G	SA	Total TAL Metals+Total U(SW846-6020/7470)	
086953-010	MWL-MW9	497	76	010809/0926	FGW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	
086953-016	MWL-MW9	497	76	010809/0927	GW	P	500 ml	4C	G	SA	Major Anions(SW846-9056)+ Alkalin(SM2320B)	
086953-018	MWL-MW9	497	76	010809/0928	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	
086953-020	MWL-MW9	497	76	010809/0929	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	
086953-033	MWL-MW9	497	76	010809/0930	GW	P	1 Liter	HNO3	G	SA	Gamma Spec (short list 901.1)	
086953-034	MWL-MW9	497	76	010809/0931	GW	P	1 Liter	HNO3	G	SA	Gross Alpha/Beta (900.0)	
086953-036	MWL-MW9	497	76	010809/0932	GW	AG	250 ml	4C	G	SA	Tritium (906.0)	

RMMA	☐ Yes ☑ No No.	**Sample Tracking** Smo Use	**Special Instructions/QC Requirements**
Sample Disposal	☐ Return to Client ☑ Disposal by lab	Date Entered(mm/dd/yy) 01/13/09	EDD ☑ Yes ☐ No
Turnaround Time	☐ 7 Day ☐ 15 Day ☑ 30 Day	Entered by: RK	Level D Package ☐ Yes ☑ No
Return Samples By:	☐ Negotiated TAT	QC inits:	*Send report to:

Abnormal Conditions on Receipt

Lab Use

Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular
	Robert Lynch		RL	Weston/4133/844-4013/250-7090
	Alfred Santillanes			Weston/4133/844-4013/228-0710
	William Gibson			Weston/4133/284-4013/239-7367

Tim Jackson/Org 4133/MS 1087/505-284-2547

If Perchlorate dectected verify by using SW846-6850M

LASt well in MWL

Major Anions/Br,Cl,Fl,SO4

FGW (-filtered in field w/40 micron filter)

*Please list as separate report.

1.Relinquished by	Org. 4133	Date 1/8/09	Time 10:10	4.Relinquished by	Org.	Date	Time
1. Received by	Org. 4137	Date 1/8/09	Time 10:10	4. Received by	Org.	Date	Time
2.Relinquished by	Org. 4139	Date 1/12/09	Time 0655	5.Relinquished by	Org.	Date	Time
2. Received by	Org. 4133	Date 1/12/09	Time 0655	5. Received by	Org.	Date	Time
3.Relinquished by	Org. 4132	Date 1/17/09	Time 0900	6.Relinquished by	Org.	Date	Time
3. Received by	Org.	Date	Time	6. Received by	Org.	Date	Time

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Sandia National Laboratories
Address : MS-0756, Org. 06765, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: **Level C, Groundwater Monitoring**

Report Date: January 28, 2009

Client Sample ID: 086953-020
Sample ID: 222375007
Matrix: AQUEOUS
Collect Date: 08-JAN-09 09:29
Receive Date: 13-JAN-09
Collector: Client

Project: SNLSGWater
Client ID: SNLS003

Client Desc.: MWL-MW9

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
EPA 314.0 Perchlorate by IC "As Received"										
Perchlorate	U	ND	0.004	0.012	mg/L	1	MARI 01/14/09	1419	831431	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

Sample Findings Summary

Site: MWL GWM **AR/COC:** 612016 and 612017 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA8260B (VOCs):	75-09-2 (methylene chloride)	67-64-1 (acetone)	75-27-4 (bromodichloromethane)	EPA8270C (SVOCs):	EPA6020 (ICP-MS):	15117-96-1 (U-235)	7440-70-2 (Ca)	7429-90-5 (Al)	7439-89-6 (Fe)	7440-61-1 (U-238)	EPA7470A (CVAA):	EPA9056 (Anions):	16887-00-6 (Chloride)	Nitrate/nitrite (EPA353.2):	N599 (nitrate/nitrite)	EPA314.0 (Perchlorate):	SM2320B (Alkalinity):
086812-001 MWL-BW2		UJ,I3			All Acceptance criteria met. No sample data will be qualified.							All Acceptance criteria met. No sample data will be qualified.					All Acceptance criteria met. No sample data will be qualified.	
086812-009 MWL-BW2							J+,DL2		0.042U,B		J,D1							
086812-010 MWL-BW2							J+,DL2		0.042U,B		J,D1							
086813-001 MWL-BW2		UJ,I3																
086813-009 MWL-BW2							J+,DL2		0.042U,B		J,D1							
086813-010 MWL-BW2							J+,DL2				J,D1							
086814-001 MWL-TB2		UJ,I3																
086810-001 MWL-EB1		UJ,I3	J-,C3	J+,C2														
086810-009 MWL-EB1								0.41U,B,B4			UJ,D1							
086810-010 MWL-EB1								0.41U,B,B4		0.063U,B	UJ,D1							
086810-016 MWL-EB1														0.55U,B,B3				
086810-018 MWL-EB1																UJ,B4		
086811-001 MWL-TB1		UJ,I3																

Validated By: David Schwartz **Date:** 12/10/08

Site: MWL GWM **AR/COC:** 612016 and 612017 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA901.1 (Gamma Spec):	86954-36-1 (Am-241)	10045-97-3 (Cs-137)	10198-40-0 (Co-60)	13966-00-2 (K-40)	EPA900.0 (Gross Alpha/Beta):	12587-46-1 (gross alpha)	12587-47-2 (gross beta)	EPA906.0 (Tritium):	10028-17-8 (tritium)
086812-033 MWL-BW2		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086812-034 MWL-BW2							J,FR7	J,FR7		
086812-036 MWL-BW2										BD,FR3
086813-033 MWL-BW2		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086813-034 MWL-BW2							J,FR7	J,FR7		
086813-036 MWL-BW2										BD,FR3
086810-033 MWL-EB1		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086810-034 MWL-EB1							BD,FR3	J,FR7		
086810-036 MWL-EB1										BD,FR3

Validated By: David Schmoll **Date:** 12/10/08

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: December 4, 2008

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: MWL GWM
AR/COC: 612016 and 612017
SDG: 216796
Laboratory: GEL
Project/Task No: 98026.01.08

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), EPA9056 (anions), and SM2320B (total alkalinity). Problems were identified with the data package that result in the qualification of data.

Anions Analysis:

Blanks: Chloride was detected in the method blank (MB) and the continuing calibration blank (CCB) analyzed on 10-3-08 at concentrations > the method detection limit (MDL) but < the practical quantitation limit (PQL). The associated result of sample 216796-026 was a detect <5X the MB concentration and <5X the CCB concentration and will be qualified "0.55U,B,B3" at 5X the value of the CCB (highest blank value).

Nitrate/nitrite Analysis:

Blanks: Nitrate/nitrite was detected in the CCB at a negative concentration with an absolute value > the MDL but < the PQL. The associated result of sample 216796-027 was a non-detect (ND) and will be qualified "UJ,B4."

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Anions Analysis: No target analytes were detected in the blanks, except as noted above in the summary section and the following. Chloride, fluoride, and sulfate were detected in one or more of the blanks at concentrations > the MDL but < the PQL. However, all associated sample results were either NDs, or detects >5X the MB concentration and/or CCB concentration and/or EB (equipment blank) concentration and will not be qualified. It should be noted that the fluoride detect result of the EB (sample 216796-026) was qualified "U" (ND) due to MB contamination and, therefore, cannot affect other field sample results.

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except as noted above in the summary section and the following. Nitrate/nitrite was detected in the CCB at a negative concentration with an absolute value > the MDL but < the PQL. However, the associated results of samples 216796-006 and -016 were detects >5X the MDL and will not be qualified. Nitrate/nitrite was also detected in the MB at a concentration > the MDL but < the PQL. However, all associated sample results were either NDs or detects >5X the MB concentration and will not be qualified.

Perchlorate Analysis: No target analytes were detected in the blanks.

Total Alkalinity Analysis: No target analytes were detected in the blanks, except the following. Total alkalinity was detected in the EB (sample 216796-026) at a concentration > the MDL but < the PQL. However, all associated sample results were detects >5X the EB concentration and will not be qualified.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met.

Detection Limits/Dilutions

All detection limits were properly reported. Samples 216796-005 and -015 were diluted 10X for chloride and sulfate and samples -006 and -016 were diluted 5X nitrate/nitrite due to high concentrations of the target analytes. Sample -027 was diluted 5X for nitrate/nitrite due to matrix interference. All associated batch QC samples were diluted at dilution factors that resulted in relative dilution factors to the samples that were ≤5X. No sample data will be qualified as a result. No other samples required dilution.

Other QC

No field blanks (FBs) were submitted on the AR/COCs. All relative percent differences (RPDs) of the field duplicates (FDs) (samples 216796-015, -016, and -017) were <20%. No QC acceptance criteria for the evaluation of FDs are currently in place.

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: MWL GWM **AR/COC:** 612018, 612019, and 612020 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA8260B (VOCs):	EPA8270C (SVOCs):	EPA6020 (ICP-MS):	15117-96-1 (U-235)	7440-36-0 (Sb)	7429-90-5 (Al)	7440-38-2 (As)	7439-95-4 (Mg)	7440-23-5 (Na)	EPA7470A (CVAA):	7439-97-6 (Hg)	EPA9056 (Anions):	EPA353.2 (Nitrate/nitrite):	N599 (nitrate/nitrite)	EPA314.0 (perchlorate)	SM2320B (Alkalinity):
086815-009 MWL-MW7	All Acceptance criteria met. No sample data will be qualified.			J+,DL2		0.043U,B	0.0087U,B	J,D1	J,D1		UJ,MS3	All Acceptance criteria met. No sample data will be qualified.			All Acceptance criteria met. No sample data will be qualified.	
086815-010 MWL-MW7				J+,DL2	0.014U,B3	0.043U,B	0.0087U,B	J,D1	J,D1		UJ,MS3					
086815-018 MWL-MW7														0.60U,B		
086817-009 MWL-MW8				J+,DL2				J,D1	J,D1		UJ,MS3					
086817-010 MWL-MW8				J+,DL2		0.043U,B		J,D1	J,D1		UJ,MS3					
086817-018 MWL-MW8														0.60U,B		
086820-009 MWL-MW9				J+,DL2			0.0087U,B	J,D1	J,D1		UJ,MS3					
086820-010 MWL-MW9				J+,DL2		0.043U,B	0.0087U,B	J,D1	J,D1		UJ,MS3					
086820-018 MWL-MW9														0.60U,B		

Sample ID	EPA901.1 (Gamma Spec):	86954-36-1 (Am-241)	10045-97-3 (Cs-137)	10198-40-0 (Co-60)	13966-00-2 (K-40)	EPA900.0 (Gross Alpha/Beta):	12587-46-1 (gross alpha)	12587-47-2 (gross beta)	EPA906.0 (Tritium):	10028-17-8 (tritium)
086815-033 MWL-MW7		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086815-034 MWL-MW7							J,FR7	J,FR7		
086815-036 MWL-MW7										BD,FR3
086817-033 MWL-MW8		BD,FR3	BD,FR3	BD,FR3	R,Z2					
086817-036 MWL-MW8										BD,FR3
086820-033 MWL-MW9		BD,FR3	BD,FR3	BD,FR3	BD,Z2					
086820-036 MWL-MW9										BD,FR3

Validated By: David Schmoll **Date:** 12/09/08

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: December 9, 2008

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: MWL GWM
AR/COC: 612018, 612019, and 612020
SDG: 217048
Laboratory: GEL
Project/Task No: 98026.01.08

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), EPA9056 (anions), and SM2320B (total alkalinity). Problems were identified with the data package that result in the qualification of data.

Nitrate/nitrite Analysis:

Blanks: Nitrate/nitrite was detected in the method blank (MB) at a concentration > the method detection limit (MDL) but < the practical quantitation limit (PQL). All associated sample results were detects <5X the MB concentration and will be qualified "0.60U,B" at 5X the value of the MB.

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except as noted above in the summary section

All Other Analyses: No target analytes were detected in the blanks. It should be noted that the MB analysis is not evaluated for total alkalinity.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed, except for the MSD analysis of the total alkalinity, which was not evaluated. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met.

Detection Limits/Dilutions

All detection limits were properly reported. Sample 217048-006 was diluted 10X for nitrate/nitrite and all samples were diluted 5X for chloride due to high concentrations of the target analytes. Samples -017 and -030 were diluted 5X for nitrate/nitrite due to matrix interference. All associated batch QC samples were diluted at dilution factors that resulted in relative dilution factors to the samples that were ≤5X. No sample data will be qualified as a result. No other samples required dilution.

Other QC

No equipment blanks (EBs), field blanks (FBs), or field duplicates (FDs) were submitted on the AR/COCs.

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: Burn Site GWM (LTS) **AR/COC:** 612119, 612120 **Data Type:** Organic & GenChem

	DRO	394878-87-0 (diesel range organics)
087046-005 CYN-MW3		UJ, H2
087047-005 CYN-MW6		UJ, H2

GRO, Nitrate/Nitrite, and Perchlorate analyses met QC acceptance criteria. No data should be qualified.

Validated By: Kevin A. Lambert

Kevin A. Lambert

Date: 04/10/09

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

Date: April 10, 2009

To: File

From: Kevin Lambert

Subject: Inorganic Data Review and Validation – SNL
Site: Burn Site GWM (LTS)
AR/COC: 612119 and 612120
SDG: 225384
Laboratory: GEL
Project/Task: 125778.10.11.01
Analysis: General Chemistry

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 2.

Summary

Two samples were prepared and analyzed with accepted procedures using method EPA 353.2 (nitrate/nitrite by Cd reduction). One sample was prepared and analyzed with accepted procedures using method EPA 314.0 (perchlorate). Data were reported for all required analytes. No problems were identified with the data package that result in the qualification of data.

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks.

Laboratory Control Sample (LCS)

All LCS recoveries met QC acceptance criteria.

Matrix Spike (MS)

The MS met QC acceptance criteria.

Replicate

The replicate met QC acceptance criteria.

Detection Limits/Dilutions

All detection limits were properly reported. Sample 225384-003 was diluted 25X and sample -006 was diluted 100X due to high concentrations for nitrate/nitrite.

Other QC

No other specific issues that affect data quality were identified.

Sample Findings Summary

Site: MWL GWM **AR/COC:** 612073 and 612074 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA8260B (VOCs):	EPA8270C (SVOCs):	EPA6020 (ICP-MS):	7440-02-0 (Ni)	EPA7470A (CVAA):	EPA9056 (Anions):	EPA353.2 (Nitrate/nitrite):	EPA314.0 (perchlorate)	SM2320B (Alkalinity):		
086943-009 MWL-BW2	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.		J+,DL2	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.		
086943-010 MWL-BW2				J+,DL2							
086946-009 MWL-MW7				J+,DL2							
086946-010 MWL-MW7				J+,DL2							

Sample ID	EPA901.1 (Gamma Spec):	86954-36-1 (Am-241)	10045-97-3 (Cs-137)	10198-40-0 (Co-60)	13966-00-2 (K-40)	EPA900.0 (Gross Alpha/Beta):	12587-46-1 (gross alpha)	12587-47-2 (gross beta)	EPA906.0 (Tritium):	10028-17-8 (tritium)	
086943-033 MWL-BW2		BD,FR3	BD,FR3	BD,FR3	BD,FR3						
086943-034 MWL-BW2							J+,FR7,MS2	J,FR7			
086943-036 MWL-BW2										BD,FR3	
086946-033 MWL-MW7		BD,FR3	BD,FR3	BD,FR3	BD,FR3						
086946-034 MWL-MW7							J+,MS2	J,FR7			
086946-036 MWL-MW7										BD,FR3	

Validated By: David Schwent **Date:** 02/13/09

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: February 13, 2009

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: MWL GWM
AR/COC: 612073 and 612074
SDG: 221997
Laboratory: GEL
Project/Task No: 98026.01.08

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), EPA9056 (anions), and SM2320B (total alkalinity). No problems were identified with the data package that result in the qualification of data.

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except the following. Nitrate/nitrite was detected in the initial calibration blank (ICB) and continuing calibration blank (CCB) at negative concentration with absolute values > the method detection limit (MDL) but < the practical quantitation limit (PQL). However, all associated sample results were detects >5X the MDL and will not be qualified.

All Other Analyses: No target analytes were detected in the blanks. It should be noted that the method blank (MB) analysis is not evaluated for total alkalinity.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed. No sample data will be qualified as a result. It should be noted that the MS analysis for nitrate/nitrite was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met. It should be noted that the laboratory replicate analysis for nitrate/nitrite was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Detection Limits/Dilutions

All detection limits were properly reported. Sample 221997-005 was diluted 5X for chloride and sulfate and sample -017 diluted 5X for chloride due to high concentrations of the target analytes. Sample -006 was diluted 10X and sample -018 was diluted 25X for nitrate/nitrite due to high concentrations of the target analyte. All associated batch QC samples were diluted at dilution factors that resulted in relative dilution factors to the samples that were ≤5X. No sample data will be qualified as a result. No other samples required dilution.

Other QC

No equipment blanks (EBs), field blanks (FBs), or field duplicates (FDs) were submitted on the AR/COCs.

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: MWL GWM **AR/COC:** 612075, 612076, and 612077 **Organic, Metals, Gen Chem, Rad**

Sample ID	EPA8260B (VOCs):	67-64-1 (acetone)	EPA8270C (SVOCs):	117-84-0 (di-n-octylphthalate)	EPA6020 (ICP-MS):	7440-70-2 (Ca)	7440-47-3 (Cr)	7440-50-8 (Cu)	EPA7470A (CVAA):	EPA314.0 (perchlorate)	EPA9056 (Anions):	SM2320B (Alkalinity):	EPA353.2 (Nitrate/nitrite):	N599 (nitrate/nitrite)
086953-002 MWL-MW9				UJ,MS5					All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.	All Acceptance criteria met. No sample data will be qualified.		
086948-002 MWL-EB1				UJ,MS5										
086948-009 MWL-EB1						0.20U,B								
086948-010 MWL-EB1						0.20U,B								
086948-018 MWL-EB1														UJ,B4
086950-001 MWL-MW8		10.0U,B2												
086950-002 MWL-MW8				UJ,MS5										
086950-009 MWL-MW8							0.011U,B2	0.0049U,B2						
086950-010 MWL-MW8							0.011U,B2	0.0049U,B2						
086951-001 MWL-MW8		10.0U,B2												
086951-002 MWL-MW8				UJ,MS5										
086951-009 MWL-MW8							0.011U,B2	0.0049U,B2						
086951-010 MWL-MW8							0.011U,B2	0.0049U,B2						

Sample ID	EPA901.1 (Gamma Spec):	86954-36-1 (Am-241)	10045-97-3 (Cs-137)	10198-40-0 (Co-60)	13966-00-2 (K-40)	EPA900.0 (Gross Alpha/Beta):	12587-46-1 (gross alpha)	12587-47-2 (gross beta)	EPA906.0 (Tritium):	10028-17-8 (tritium)
086953-033 MWL-MW9		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086953-036 MWL-MW9										BD,FR3
086948-033 MWL-EB1		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086948-034 MWL-EB1							BD,FR3	BD,FR3		
086948-036 MWL-EB1										BD,FR3
086950-033 MWL-MW8		BD,FR3	BD,FR3	BD,FR3	BD,FR3					
086950-036 MWL-MW8										BD,FR3
086951-033 MWL-MW8		BD,FR3	BD,FR3	BD,FR3	R,Z2					
086951-036 MWL-MW8										BD,FR3

Validated By: David Schwartz **Date:** 02/27/09

Analytical Quality Associates, Inc.
616 Maxine NE
Albuquerque, NM 87123
Phone: 505-299-5201
Fax: 505-299-6744
Email: minteer@aol.com

Memorandum

DATE: February 26, 2009

TO: File

FROM: David Schwent

SUBJECT: General Chemistry Data Review and Validation - SNL
Site: MWL GWM
AR/COC: 612075, 612076, and 612077
SDG: 222375
Laboratory: GEL
Project/Task No: 98026.01.08

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 2.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate), EPA353.2 (nitrate/nitrite by Cd reduction), EPA9056 (anions), and SM2320B (total alkalinity). Problems were identified with the data package that result in the qualification of data.

Nitrate/nitrite Analysis:

Blanks: Nitrate/nitrite was detected in the initial calibration blank (ICB) and continuing calibration blank (CCB) at negative concentrations with absolute values > the method detection limit (MDL) but < the practical quantitation limit (PQL). The associated result of sample 222375-017 was a non-detect (ND) and will be qualified "UJ,B4."

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except as noted above in the summary section.

Anions Analysis: No target analytes were detected in the blanks, except the following. Chloride was detected in the equipment blank (EB) (sample 222375-016) at a concentration > the MDL but < the PQL. However, all associated sample results were NDs and will not be qualified.

All Other Analyses: No target analytes were detected in the blanks. It should be noted that the blanks analysis is not evaluated for total alkalinity.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. The laboratory replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD analyses were performed. No sample data will be qualified as a result. It should be noted that the MS analysis for perchlorate was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met. It should be noted that the laboratory replicate analysis for perchlorate was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Detection Limits/Dilutions

All detection limits were properly reported. Samples 222375-017, -028, and -038 were diluted 5X for nitrate/nitrite and samples -005, -027, and -037 were diluted 10X for chloride due to high concentrations of the target analytes. Sample -006 diluted 25X for nitrate/nitrite due to matrix interference. All associated batch QC samples were diluted at dilution factors that resulted in relative dilution factors to the samples that were ≤5X. No sample data will be qualified as a result. No other samples required dilution.

Other QC

No field blanks (FBs) were submitted on the AR/COCs. All relative percent differences (RPDs) of the field duplicates (FDs) (samples 222375-037, -038, and -039) were <20%. No QC acceptance criteria for the evaluation of FDs are currently in place.

No other specific issues were identified which affect data quality.