



National Nuclear Security Administration

Sandia Site Office
P.O. Box 5400
Albuquerque, New Mexico 87185-5400



DEC 27 2007

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

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



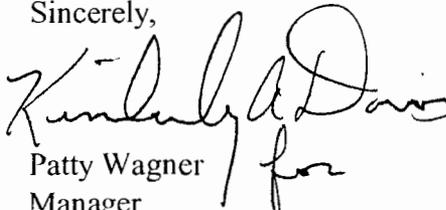
Dear Mr. Bearzi:

On behalf of the Department of Energy (DOE) and Sandia Corporation (Sandia), DOE is submitting the December 2007 Consolidated Quarterly Report for the Environmental Restoration Project (covers August through October) that addresses all quarterly reporting requirements required under 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 for Sandia National Laboratories/New Mexico (SNL/NM), EPA ID No. NM5890110518.

Pursuant to perchlorate screening, detectable concentrations (above 4.0 micrograms/liter) continue to be found at monitoring well CYN-MW6 (located at the Burn Site groundwater area). We are concluding eight quarters of monitoring the trend and plan to provide the results of our risk assessment and nature and extent evaluation in the next quarterly report. We cordially request letting us know of any concerns or alternate frequency for continued monitoring at your earliest convenience.

If you have any questions, please contact me at (505) 845-6036 or Joe Estrada of my staff at (505) 845-5326. For perchlorate or Chemical Waste Landfill groundwater related items, please contact John Gould of my staff at (505) 845-6089.

Sincerely,


Patty Wagner
Manager

Enclosure

Mr. J. Bearzi

2

cc w/enclosure:

W. Moats, NMED (via Certified Mail)
L. King, USEPA, Region VI (via Certified Mail)
T. Skibitski, NMED-OB (c/o D. Sleeman)
T. Longo, HQ/GTN, NA-56
Public Reading Room (c/o SNL/NM, Org. 6765)

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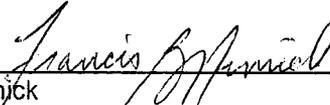
M. Reynolds, NNSA/SSO
J. Gould, NNSA/SSO
A. Blumberg, SNL/NM, Org. 11100, MS 0141
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Records Center, SNL/NM, Org. 6765, MS 1089

CERTIFICATION STATEMENT FOR APPROVAL AND FINAL RELEASE OF DOCUMENTS

Document title: Consolidated EPA Quarterly Report, December 2007

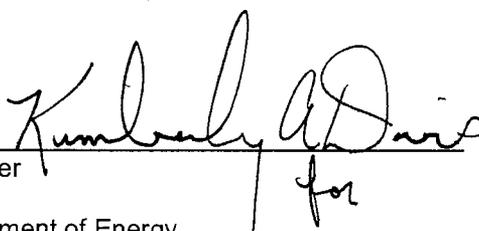
Document author: Paul Freshour, 6765

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: 
Fran B. Nimjick
Deputy Director to the
Nuclear Energy & Global Security Technologies
Division 6700
Sandia National Laboratories/New Mexico
Albuquerque, New Mexico 87185
Operator

12/17/07
Date

and

Signature: 
Patty Wagner
Manager
U.S. Department of Energy
National Nuclear Security Administration
Sandia Site Office
Owner and Co-Operator

12/27/07
Date



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Sandia National Laboratories, New Mexico (SNL/NM)

Environmental Restoration Project

A Department of Energy Environmental Cleanup Program

**CONSOLIDATED
Quarterly Report**

August-September-October

DECEMBER 2007



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

DECEMBER 2007

SANDIA NATIONAL LABORATORIES/NEW MEXICO (SNL/NM)

ENVIRONMENTAL RESTORATION PROJECT

DOE: SANDIA SITE OFFICE
CONTRACTOR: SANDIA CORPORATION
PROJECT MANAGER: J. PAUL FRESHOUR

NUMBER OF POTENTIAL RELEASE SITES SUBJECT TO THIS PERMIT: 64
SUSPECT WASTE: radionuclides, metals, organics, and explosives

OVERVIEW

This Consolidated Quarterly Report for the Sandia National Laboratories Environmental Project addresses all quarterly reporting requirements required under 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. This Quarterly Report covers the periods from August to October 2007. The following entities are addressed in these Sections:

SECTION I

Environmental Restoration Quarterly Report

SECTION II

Chemical Waste Landfill Quarterly Closure Progress Report

SECTION III

Perchlorate Screening Quarterly Report

SECTION I

ENVIRONMENTAL RESTORATION 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 also included.

2.0 Work Completed in This Quarter (August thru October 2007)

2.1 Mixed Waste Landfill (MWL)

- On August 3, 2007, DOE/Sandia submitted to the New Mexico Environmental Department (NMED) Hazardous Waste Bureau (HWB) the *Monitoring Well Plug and Abandonment Plan and Replacement Well Construction Plan; Installation of Replacement Groundwater Monitoring Well MWL-BW2, Revision 1*. This document is in response to the June 19, 2007 NMED Notice of Disapproval for the plan.
- On August 9 and 13, 2007, routine neutron moisture logging of the MWL vadose zone was conducted to obtain baseline data regarding moisture content profiles with depth beneath the landfill.
- In September 2007, DOE/Sandia submitted to the NMED HWB the *Long-Term Monitoring and Maintenance Plan for the Mixed Waste Landfill (LTMMP)*. This plan addresses monitoring, sampling, maintenance and physical and institutional controls at the MWL. The LTMMP is intended to follow the final remedy implementation (installation of vegetative landfill cover). The purpose of long-term monitoring is to ensure that the final remedy for the MWL is protective of human health and the environment.
- On October 31, 2007, the NMED HWB published a notice for public comment on the LTMMP. Comments will be received through 5:00 p.m., MST, December 31, 2007.

MWL Documents submitted to NMED pending regulatory approval:

- Corrective Measure Implementation Plan (CMIP), submitted November 2005; CMIP Notice of Disapproval (NOD) Part 1 response, submitted December 15, 2006; CMIP NOD Part 2 response submitted January 19, 2007.
- Soil Gas Sampling and Analysis Plan (SAP) submitted December 2006, extended NMED public review and comment period ended May 15, 2007.
- Long-term Monitoring and Maintenance Plan (LTMMP) submitted September 2007 – NMED public review and comment period runs from October 31 – December 31, 2007.

2.2 Project Management Site Closure

Operable units with only regulatory and administrative closure activities remaining have been closed and those activities will be managed under project management. Two permit modification requests are currently in progress and a third is planned early in calendar year 2008.

Permit Modification Request submitted in September 2005

Twenty-eight sites were submitted for final regulatory approval of corrective action complete (CAC) in September 2005 including nine Solid Waste Management Units (SWMUs) and nineteen Areas of Concern (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 28 sites on September 20, 2007. The NMED public review and comment period ends on November 19, 2007. The SWMUs and AOCs included in this permit modification request are listed below.

SWMUs – 1, 3, 45, 78, 137, 146, 148, 152, and 153

AOCs – 276, 1004, 1031, 1034, 1035, 1036, 1052, 1078, 1079, 1080, 1081, 1084, 1087, 1092, 1098, 1102, 1104, 1113, and 1120.

Permit Modification Request submitted in March 2006

Twenty-six sites were submitted for final regulatory approval of corrective action complete (CAC) in March 2006 including nineteen SWMUs and seven AOCs. These twenty-six sites are pending the NMED *Notice of Public Comment Period and Intent to Approve a Class 3 Permit Modification of the RCRA Permit for Sandia National Laboratories*. 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.

Planned Permit Modification Request to be submitted in January 2008

A Class 3 Permit Modification request for five sites will be submitted to the NMED in January 2008. A poster session with a public review and comment period will also be initiated in January 2008. This permit modification will include all remaining SNL ER sites with the exception of the Mixed Waste Landfill which is pending Corrective Measure Implementation and the Chemical Waste Landfill which is pending final regulatory approval of a post-closure permit. The MWL is addressed separately in section 2.1 of this ER quarterly report. The CWL Quarterly Report is presented in Section II of this consolidated quarterly report. The four SWMUs and one AOC to be 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

- Quarterly sampling was performed. Results will be reported in the SNL Groundwater Protection Program (GWPP) Annual Groundwater Monitoring Report.

Burn Site Groundwater

- Quarterly sampling was performed. Results will be reported in the SNL GWPP Annual Groundwater Monitoring Report. Perchlorate results will be reported in the quarterly Perchlorate Screening Quarterly Monitoring Report.

Tijeras Arroyo Groundwater

- Groundwater sampling was performed. Results will be reported in the SNL GWPP Annual Groundwater Monitoring Report.

Mixed Waste Landfill Groundwater

- No groundwater sampling was performed this period. Results from MWL sampling events are reported in the Mixed Waste Landfill Annual Groundwater Monitoring Report.
- On October 10, 2007, the NMED HWB sent a Notice of Approval for *Monitoring Well Plug and Abandonment Plan and Replacement Well Construction Plan; Installation of Replacement Groundwater Monitoring Well MWL-BW2, Revision 1*. The notice specified that the scope of work be completed by January 1, 2008. Subsequently, it was verified that this date was in error and the NMED issued a letter on October 12, 2007 stating that the completion date is January 31, 2008. The report is to be completed by April 30, 2008.
- On October 30, 2007 the NMED HWB sent a Notice of Approval for Monitoring Well Plug and Abandonment Plan and Replacement Well Construction Plan; Decommissioning of Groundwater Monitoring Wells MWL-MW1 and MWL-MW3; Installation of Replacement Groundwater Monitoring Wells MWL-MW7 and MWL-MW8 (dated July 2007). The notice approved the work with conditions; the locations of the MWL-MW7 and -MW8 must be moved to new specified locations and must be as close as possible to the former west fence. The NMED stated that they were aware that the locations would fall within the footprint of the new cover. The scope of work is to be completed by March 31, 2008, and the report is to be completed by June 30, 2008. DOE and Sandia have technical concerns regarding the NMED proposed well locations and will submit a response to the Notice of Approval detailing these concerns.

Chemical Waste Landfill Groundwater

- Semi-annual groundwater sampling was started in October. Results will be reported in the SNL Groundwater Protection Program (GWPP) Annual Groundwater Monitoring Report.

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

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

- Tijeras Arroyo GW (TAG) CME Work plan, submitted July 2004
- Burn Site GW (BSGW) Interim Measures Work Plan (IMWP), submitted May 2005
- TA-V GW CME Report, submitted July 2005
- TAG CME Report, submitted August 2005
- Request for revision of TA-V GW sampling frequency, submitted October 2005
- MWL- MW1 and MWL-MW3 Well Replacement and Plug and Abandonment Plan submitted August 2007, Approval with conditions received October 2007, letter requesting reconsideration of well locations on technical basis to be submitted.

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, (September 2007), including containment cell cover, storm water diversion structures, security fences, gates, and signs.
- Quarterly monitoring of the VZMS was conducted in September 2007.
- Waste management associated with the leachate collection was conducted.
- Composite leachate sampling was conducted on August 7 and October 16, 2007.

CAMU Waste Management Activities (August – October 2007)

- Waste stored on site at the beginning of this period:
 - 158 gallons of leachate.
 - 5 lbs PPE.
- Waste generated on-site during the period:
 - 200 gallons of leachate:
 - 5 lbs PPE, paper wipes, plastic drum pump.
- Waste removed from site by the Hazardous Waste Management Facility:
 - 177 gallons of leachate on August 28, 2007.
 - 5 lbs PPE, paper wipes and plastic drum pump on August 28, 2007.
- Waste remaining on site at the end of this period:
 - 181 gallons of leachate.
 - 5 lbs PPE.

Regulatory Activities

- On September 26, 2007, DOE and Sandia submitted the Vadose Zone Monitoring System Annual Monitoring Results Report for the CAMU, as required by Section IV.U.9 of the HSWA Module.

SECTION II

CHEMICAL WASTE LANDFILL

QUARTERLY CLOSURE 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 August through October 2007.

1.0 Introduction

All voluntary corrective measures (VCMs) activities for the CWL have been completed. The CWL 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 VC 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, expected to be submitted in CY 2008 after NMED approval of the 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 notice were the Corrective Measures Study 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.

3.0 Water Monitoring Assessment

In October (and November) 2007, samples were collected from background wells (BW) (CWL-BW3 and CWL-BW4A) and monitoring wells (MW) (CWL-MW2BL, CWL-MW2BU, CWL-MW4, CWL-MW5L, CWL-MW5U, and CWL-MW6U). These samples were analyzed for 40 CFR 264, Appendix IX volatile organic compounds, Appendix IX semi-volatile organic compounds, Appendix IX chlorinated herbicides, Appendix IX polychlorinated biphenyls, Appendix IX total metals, total iron, dissolved chromium, cyanide, and sulfide. At the time of this report, SNL/NM has not received all analytical results for this sampling event.

No soil-gas sampling was performed at the CWL during this reporting period. Soil-gas sampling is not required under the Closure Plan but is expected to be a requirement for post-closure care (Kieling, December 2003).

4.0 Projected Activities for the Upcoming Quarter

Because DOE and Sandia have requested a hearing on the CWL post-closure care permit, DOE and Sandia anticipate that a resolution conference with the NMED will be arranged in the next quarter, with the intent of resolving comments in advance of a hearing and potentially leading to a withdrawal of the request for a hearing.

In addition, analytical data from samples collected this reporting period will be summarized and presented in the next quarterly report.

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.

SECTION III
PERCHLORATE SCREENING QUARTERLY MONITORING REPORT
THIRD QUARTER OF CALENDAR YEAR 2007
(JULY, AUGUST, AND SEPTEMBER 2007)

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 (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 third quarter of Calendar Year 2007 (CY2007) in response to the requirements of the Order.

During the third quarter of CY2007, a groundwater sample was collected from the only well currently in the perchlorate-screening monitoring-well network. CYN-MW6 was sampled on September 12, 2007, and the sample was submitted to General Engineering Laboratories (GEL) for perchlorate analysis using U.S. Environmental Protection Agency (EPA) Method 314.0 (EPA November 1999).

The environmental sample from CYN-MW6 revealed perchlorate at a concentration of 7.74 micrograms per liter ($\mu\text{g/L}$). This concentration was verified by subsequent analysis of the sample by EPA Method 6850M (EPA April 2005), which provided a result of 6.46 $\mu\text{g/L}$. As discussed in the previous quarterly reports, the source for the perchlorate in the groundwater at CYN-MW6 is unknown. Because perchlorate concentrations in monitoring well CYN-MW6 have exceeded the screening level, DOE/Sandia have initiated a negotiation process with the NMED to determine the frequency of continued monitoring. DOE/Sandia recommended the continuation of monitoring perchlorate concentrations in CYN-MW6 through at least the fourth quarter of CY2007 (SNL/NM March 2007).

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**Perchlorate Screening Quarterly Monitoring Report
Third Quarter of Calendar Year 2007
(July, August, and September 2007)**

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 [New Mexico Environment Department (NMED) April 2004]. This report summarizes the perchlorate screening monitoring completed during the third quarter of Calendar Year 2007 (CY2007) 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. This quarterly report is the eighth to be submitted since the November 2005 letter report; the previous quarterly reports were submitted in:

1. Fourth Quarter of Calendar Year 2005 (SNL/NM February 2006),
2. First Quarter of Calendar Year 2006 (SNL/NM June 2006),
3. Second Quarter of Calendar Year 2006 (SNL/NM September 2006),
4. Third Quarter of Calendar Year 2006 (SNL/NM December 2006),
5. Fourth Quarter of Calendar Year 2006 (SNL/NM March 2007),
6. First Quarter of Calendar Year 2007 (SNL/NM June 2007), and
7. Second Quarter of Calendar Year 2007 (SNL/NM September 2007).

Reporting will continue as long as a groundwater monitoring well remains in the perchlorate-screening monitoring well network.

2.0 Scope of Activities

This report provides perchlorate screening results from the third quarter of CY2007 (July, August, and September 2007) for the one well 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 ($\mu\text{g/L}$) 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

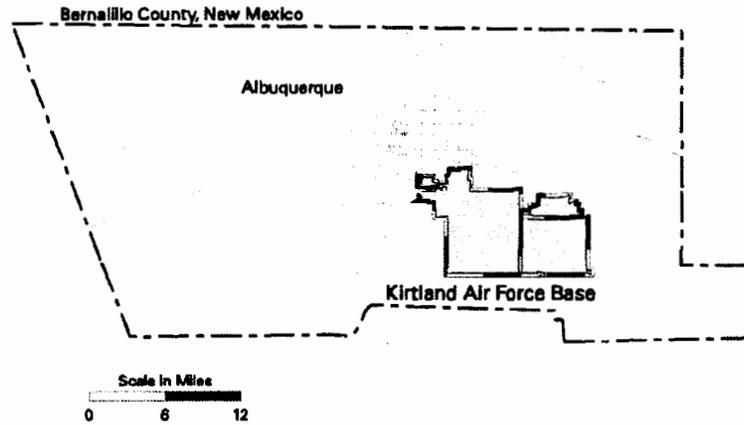
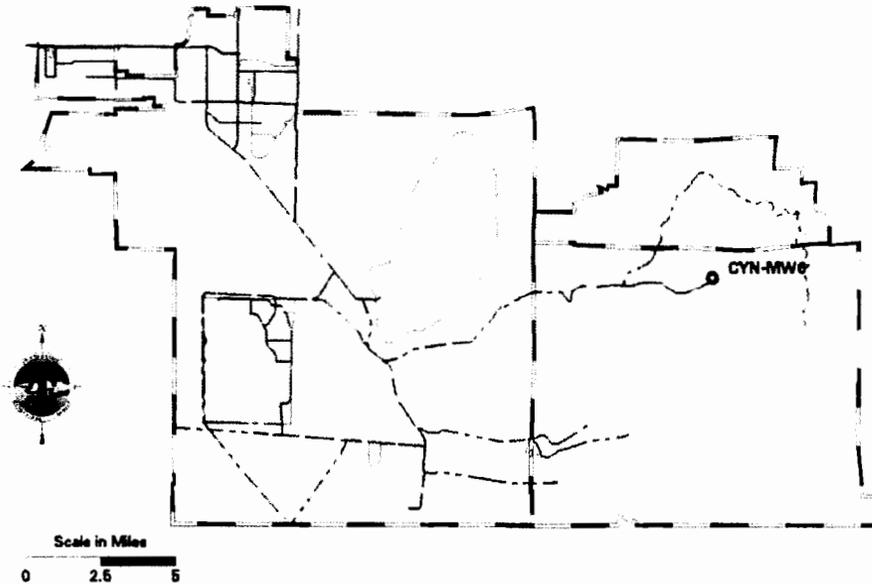
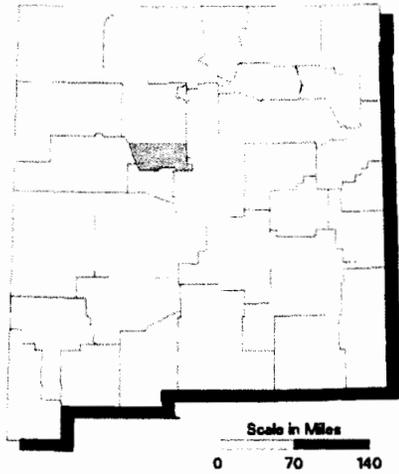


Figure 1
Sandia National Laboratories
New Mexico
Current Perchlorate Screening
Monitoring-Well Network
(Jul/Aug/Sep 2007)

Bernalillo County, New Mexico



**Table 1
Current Perchlorate-Screening Monitoring-Well Network
Third Quarter of CY2007 (July, August, and September)**

Well	Date Sampled	Number of Consecutive Sampling Events ^a	Remaining Number of Sampling Events ^b	Sampling Method
CYN-MW6	12-SEP-07	7	1 ^c	Bennett™ Pump

Notes:

^a Includes this sampling event.

^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 This well has been sampled for the required initial four quarters. Because perchlorate concentrations in this well have exceeded the screening level, DOE/Sandia have initiated the negotiation process with the NMED to determine the frequency of continued monitoring. DOE/Sandia recommended the continuation of quarterly monitoring and reporting for CYN-MW6 through at least the fourth quarter of CY2007.

perchlorate screening reports include: CYN-MW1D, CYN-MW5, CYN-MW7, CYN-MW8, MRN-2, MRN-3D, MWL-BW1, MWL-MW1, NWT3-MW2, and SWTA3-MW4.

DOE/Sandia performed groundwater sampling at CYN-MW6 on September 12, 2007. This well was installed after the Order was finalized and is required to be sampled for perchlorate as a “new” well. Groundwater sampling activities were conducted in conformance with procedures outlined in the investigation-specific sampling and analysis plan (SAP) entitled, “Burn Site Groundwater Monitoring, Mini-SAP for Fourth Quarter Fiscal Year 2007” (SNL/NM July 2007a).

As described in the Mini-SAP, 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 sample. The sampling pump and tubing bundle were decontaminated prior to installation into monitoring wells according to procedures described in FOP 05-03, “LTES Groundwater Sampling Equipment Decontamination” (SNL/NM October 2005a). The well was 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).

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 using with an YSI™ Model 620 Water Quality Meter. Turbidity was measured with a HACH™ Model 2100P turbidity meter. Purging 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 sample was submitted to General Engineering Laboratories (GEL) for chemical analysis for perchlorate analysis 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, 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 Third Quarter of CY2007 Perchlorate Sampling

Well	Sample Identification	AR/COC Number	Date Shipped
CYN-MW6	085249-020	611581	12-SEP-07

Notes:
AR/COC = Analysis request/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 above the screening level/MDL 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 the DOE/Sandia 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, including for perchlorate, ending in December 2007, to assure appropriate characterization of this new well. DOE/Sandia further indicated the plan to continue reporting perchlorate results on a quarterly basis, formatted as Periodic Monitoring Reports under Section X.D of the Consent Order. At that time, DOE/Sandia would propose revisiting the need for continued monitoring or additional characterization work, and, potentially, a CME.

4.0 Monitoring Results

Table 3 summarizes current and historical perchlorate results for CYN-MW6. The analytical laboratory certificate of analysis for the third quarter CY2007 perchlorate data is included as Appendix A. Consistent with historical analytical results, perchlorate was detected above the screening level/MDL in the third quarter of CY2007 in CYN-MW6. The detected concentration of perchlorate was verified by subsequent analysis of the sample with by EPA Method 6850M (EPA April 2005).

As shown in Figure 2, the concentrations of perchlorate found in CYN-MW6 in September 2007 (7.74 and 6.46 $\mu\text{g/L}$) is higher than concentrations reported for last quarter (SNL/NM September 2007), but overall 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, and SNL/NM September 2007).

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 2007b). 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 Burn Site Groundwater Monitoring mini-SAP (SNL/NM July 2007a) were identified during the third quarter CY2007 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:

- Since June 2004 (the start of sampling required by the Order), perchlorate has only been detected above the screening level/MDL 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 concentrations from this sampling event (7.74 and 6.46 $\mu\text{g/L}$) are higher than concentrations reported for last quarter, but overall consistent with the concentrations in previous quarters (Figure 2) (SNL/NM June 2006, SNL/NM September 2006, SNL/NM December 2006, SNL/NM March 2007, SNL/NM June 2007, and SNL/NM September 2007). No explanation for the minor concentration fluctuations is readily available.

**Table 3
Summary of Perchlorate Screening Analytical Results for the
Current Monitoring-Well Network, as of Third Quarter CY2007.**

Well ID	Sample Date	ARCO 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	
	27-Jun-07	611399	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		
12-Sep-07	611581	085249-R20	6.46	0.5	2.0	NE	Hh	J	EPA 6850M	Verification/Re-analysis	

Refer to notes on next page.

Table 3 (concluded)
Summary of Perchlorate Screening Analytical Results for the
Current Monitoring-Well Network, as of Third Quarter CY2007.

Notes—

CYN-MW6 was installed in January 2006; this table presents all quarterly data collected at this well.

^aResult

Values in **bold** exceed the screening level/MDL.

µg/L = micrograms per liter.

^bMDL

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.

^cPQL

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.

^dMCL

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.

^eLab Qualifier

H = Analytical holding time was exceeded.

h = Prep holding time was exceeded.

J = Amount detected is below the practical quantitation limit.

^fValidation 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.

^gAnalytical Method

EPA 314.0: U.S. Environmental Protection Agency, November 1999, "Perchlorate in Drinking Water Using Ion Chromatography," EPA 815/R-00-014.

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.

Figure 2
Perchlorate Concentrations ($\mu\text{g/L}$) over Time in CYN-MW6

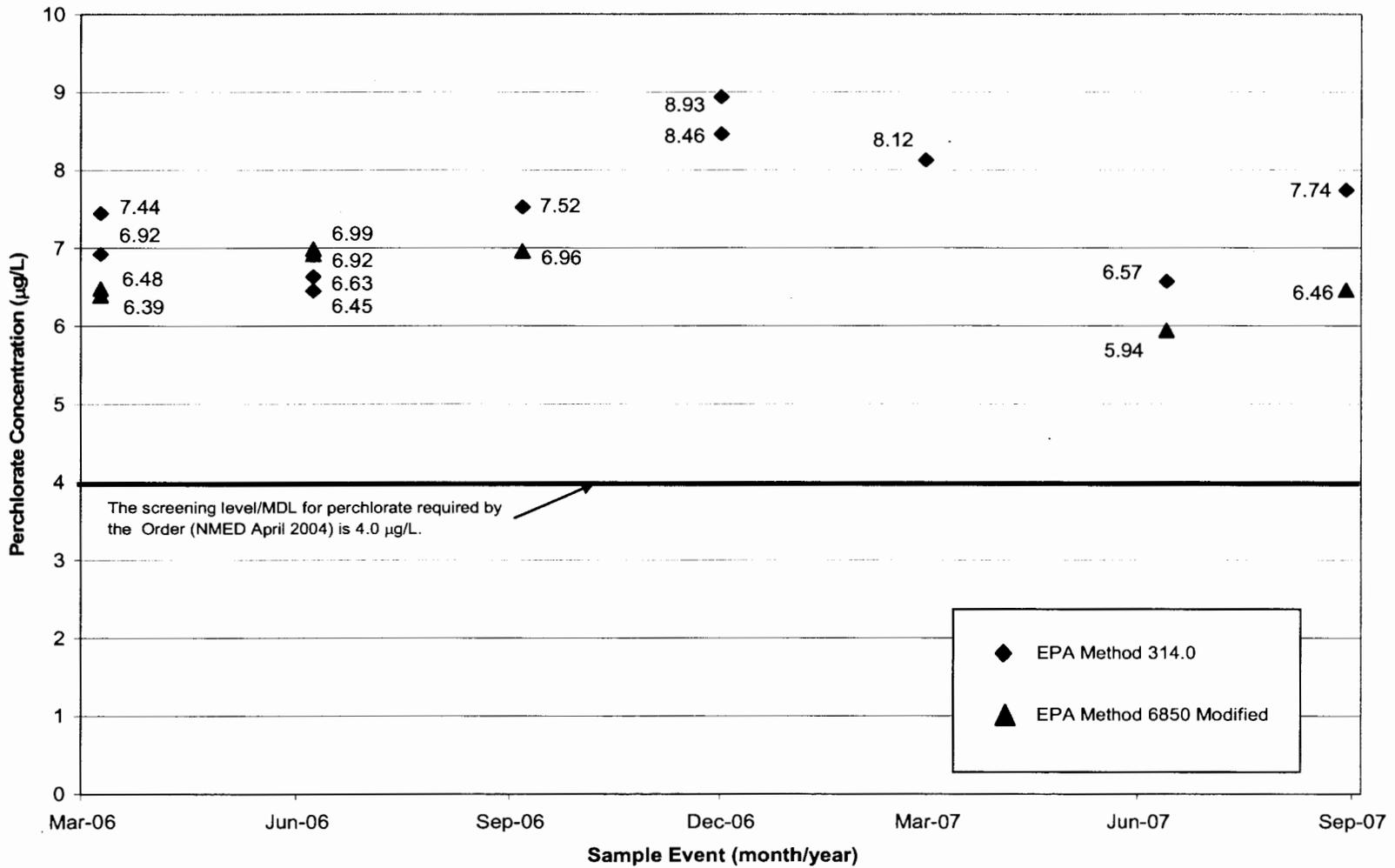


Table 4
Perchlorate Screening Groundwater Monitoring
Field Water Quality Measurements^a, Third Quarter of CY2007

Well ID	Sample Date	Temperature (°C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pH	Turbidity (NTU)	Dissolved Oxygen (% Sat)	Dissolved Oxygen (mg/L)
CYN-MW6	2-Sep-07	19.36	894	282.1	6.70	0.40	27.0	2.50

Notes:

- ^aField measurements made immediately before the groundwater sample was collected.
- °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 quarterly reports (SNL/NM June 2006, SNL/NM September 2006), the source for the perchlorate in the groundwater at CYN-MW6 is unknown. Soil sampling completed in 2001 at Solid Waste Management Unit (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).

Because perchlorate concentrations in monitoring well CYN-MW6 have exceeded the screening level, DOE/Sandia have initiated the negotiation process with the NMED to determine the frequency of continued monitoring. DOE/Sandia have proposed to continue to monitor perchlorate concentrations in CYN-MW6 through at least the fourth quarter of CY2007 before changing the frequency.

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Appendix A

**Analytical Laboratory Certificate of
Analysis for the Perchlorate Data**

CONTRACT LABORATORY ANALYSIS REQUEST AND CHAIN OF CUSTODY

Internal Lab

Batch No. <i>N/A</i>		SMO Use		AR/COC		611581									
Dept. No./Mail Stop: 6765/1089		Date Samples Shipped: <i>9-12-07</i>		Project/Task No. 98026.01.06		<input type="checkbox"/> Waste Characterization									
Project/Task Manager: Paul Freshour		Carrier/Waybill No. <i>815274</i>		SMO Authorization: <i>df...</i>		-Send preliminary/copy report to:									
Project Name: CYN GWM <i>BURGLEY</i>		Lab Contact: Edie Kent/803-558-8171		Contract #: PQ 21671		<input type="checkbox"/> Released by COC No.:									
Record Center Code: ER/1333/DAT		Lab Destination: GEL		<i>500 BOTTLE ORDER</i>		<input checked="" type="checkbox"/> Validation Required									
Logbook Ref. No.: ER 05B		SMO Contact/Phone: Pam Pulsant/505-844-3185				Bill To: Sandia National Labs (Accounts Payable)									
Service Order No. CF# 003-078		Send Report to SMO: Lorraine Herrera/505-844-3199		P.O. Box 5800 MS 0154		Albuquerque, NM 87185-0154									
Location		Tech Area		Reference LOV (available at SMO)		<i>19203</i>									
Building		Room													
Sample No.-Fraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site No.	Date/Time (hr) Collected	Sample Matrix	Container Type	Volume	Preservative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID			
085249-001	CYN -MW6	163	<i>N/A</i>	091207/1025	GW	G	3x40 ml	HCL	G	SA	VOC (SW846-8260)	<i>1</i>			
085249-002	CYN -MW6	163		091207/1026	GW	AG	4x1 L	4C	G	SA	SVOC (SW846-8270)	<i>2</i>			
085249-005	CYN -MW6	163		091207/1028	GW	AG	4x1 L	4C	G	SA	TPH Diesel (8015)	<i>2</i>			
085249-006	CYN -MW6	163		091207/1030	GW	G	3x40 ml	HCL	G	SA	TPH Gasoline (8015)	<i>3</i>			
085249-009	CYN -MW6	163		091207/1031	GW	P	500 ml	HNO3	G	SA	TAL Metals+Total U(SW846-6020/7470)	<i>4</i>			
085249-016	CYN -MW6	163		091207/1032	GW	P	250 ml	4C	G	SA	Major Anions (SW846-9058)	<i>10</i>			
085249-017	CYN -MW6	163		091207/1033	FGW	P	500 ml	HNO3	G	SA	Major Cations (SW846-6020)	<i>11</i>			
085249-018	CYN -MW6	163		091207/1034	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	<i>5</i>			
085249-020	CYN -MW6	163		091207/1035	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)	<i>12</i>			
085249-033	CYN -MW6	163		091207/1036	GW	P	1 L	HNO3	G	SA	Gamma Spec (short list) (901.1)	<i>6</i>			
RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Ref. No.		Special Tracking		Send Use		Special Instructions/QC Requirements		Abnormal Conditions on Receipt					
Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab		Date Entered (mm/dd/yyyy)		Entered by:		Level D Package <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		*Send report to:							
Turnaround Time <input type="checkbox"/> 7 Day <input type="checkbox"/> 15 Day <input checked="" type="checkbox"/> 30 Day		Negotiated TAT		Company/Organization/Phone/Cellular		Tim Jackson/Org. 6765/MS 1087/505-284-2547		FGW/ filtered in field with 40 micron filter							
Return Samples By:		Name		Signature		Init		*Please list as separate report.							
Sample Team Members		William J Gibson		<i>[Signature]</i>		<i>[Init]</i>		Weston/6146/284-5232/239-7387							
		Robert Lynch		<i>[Signature]</i>		<i>[Init]</i>		Weston/6146/844-4013/250-7090							
		Alfred Santillanes		<i>[Signature]</i>		<i>[Init]</i>		Weston/6146/844-5130/228-0710							
1. Relinquished by <i>[Signature]</i>		Org. <i>6765</i>		Date <i>9/12/07</i>		Time <i>11:35</i>		4. Relinquished by		Org.		Date		Time	
1. Received by <i>[Signature]</i>		Org. <i>6765</i>		Date <i>9/12/07</i>		Time <i>11:35</i>		4. Received by		Org.		Date		Time	
2. Relinquished by <i>[Signature]</i>		Org. <i>6765</i>		Date <i>9/12/07</i>		Time <i>1400</i>		5. Relinquished by		Org.		Date		Time	
2. Received by <i>[Signature]</i>		Org.		Date <i>9/13/07</i>		Time <i>09:15</i>		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. 7578, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact: Ms. Pamela M. Puissant
Project: Level C Data Package GW

Report Date: October 8, 2007

Client Sample ID: 085249-020
Sample ID: 193603009
Matrix: Aqueous
Collect Date: 12-SEP-07 10:35
Receive Date: 13-SEP-07
Collector: Client
Project: SNLSGW
Client ID: SNLS002
Client Desc.: CYN-MW6

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography Federal										
<i>EPA 314.0 Perchlorate by IC, contingent</i>										
Perchlorate	J	0.00774	0.004	0.012	mg/L	1	MAR109/20/07	0408	683448	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOE-AL	

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Certificate of Analysis

Company : Sandia National Laboratories
 Address : MS-0756, Org. 7578, Bldg. 823/Rm. 4276
 1515 Bublik SE
 Albuquerque, New Mexico 87123
 Contact: Ms. Pamela M. Puissant
 Project: Level C Data Package GW

Report Date: October 25, 2007

Page 1 of 2

Client Sample ID:	085249-R20	Project:	SNLSGW
Sample ID:	195625001	Client ID:	SNLS002
Matrix:	AQUEOUS		
Collect Date:	12-SEP-07 10:35		
Receive Date:	13-SEP-07	Client Desc.:	CYN-MW6
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
LC-MS/MS Perchlorate Federal											
<i>EPA 6850 Modified Perchlorate by LC-MS/MS</i>											
Perchlorate	Hh	6.46	0.500	2.00	ug/L	10	CWW	10/17/07	2238	692629	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 6850 Modified	EPA 6850 Perchlorate Extraction in Liquid	CXB1	10/15/07	0933	692628

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 6850 Modified	

Notes:

The Qualifiers in this report are defined as follows :

- * Recovery or %RPD not within acceptance limits and/or spike amount not compatible with the sample or the duplicate RPD's are not applicable where the concentration falls below the effective PQL.
- ** Indicates analyte is a surrogate compound.
- B The analyte was found in the blank above the effective MDL.
- H Analytical holding time was exceeded
- J Estimated value, the analyte concentration fell above the effective MDL and below the effective PQL
- P The response between the confirmation column and the primary column is >40%D
- U The analyte was analyzed for but not detected below this concentration. For Organic and Inorganic analytes the result is less than the effective MDL. For radiochemical analytes the result is less than the Decision Level
- X Presumptive evidence that the analyte is not present. Please see narrative for further information.
- Z The percent difference is greater than 70%.
- d The 2:1 depletion requirement was not met for this sample
- h Prep holding time exceeded

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

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. 7578, Bldg. 823/Rm. 4276
1515 Eubank SE
Albuquerque, New Mexico 87123
Contact : Ms. Pamela M. Puissant
Project : Level C Data Package GW

Report Date: October 25, 2007

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Client Sample ID: 085249-R20
Sample ID: 195625001

Project: SNLSGW
Client ID: SNLS002

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Edith Kent.

Hebeeth Mauer 10/23/07
Reviewed by

Appendix B

**Data Validation Sample Findings Summary Sheets
for the Perchlorate Data**

Analytical Quality Associates, Inc.

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Albuquerque, NM 87123
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Memorandum

Date: November 15, 2007
To: File
From: David Schwent
Subject: LC/MS/MS Inorganic (Perchlorate) Data Review and Validation - SNL
Site: Burn Site GWM (ER)
AR/COC: 611581
SDG: 195625
Laboratory: GEL
Project/Task No: 98026.01.06

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 1.

Summary

All samples were prepared and analyzed with approved procedures using method EPA6850M (perchlorate by LC/MS/MS). This LC/MS/MS analysis was performed as a confirmation of the perchlorate result obtained by method EPA314.0 for sample 193603-009 in the original package under this COC (SDG 193603). The perchlorate detect result for sample -009 of the original package has been confirmed by this LC/MS/MS analysis. Problems were identified with this data package that result in the qualification of data.

Holding Times/Preservation: Sample 195625-001 was re-extracted beyond the method specified holding time, but within 2X the holding time. The associated result of sample -001 was a detect and will be qualified "J,H2."

MS/MSD: The perchlorate sample concentration was >4X the MS and MSD spike concentrations and the MS and MSD percent recoveries (%Rs) were outside of QC acceptance limits. Therefore, the MS/MSD %Rs were not used to evaluate field sample data. The associated result of sample 195625-001 was a detect and will be qualified "J,MS1" due to lack of matrix-specific accuracy information.

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

Holding Times/Preservation

All samples were analyzed within the prescribed holding times and properly preserved, except as noted above in the summary section.

Calibration

All initial and continuing calibration QC acceptance criteria were met.

Reporting Limit Verification

All CRI QC acceptance criteria were met.

Blanks

No target analytes were detected in the blanks.

Internal Standards (ISs)

All IS area and RT QC acceptance criteria were met.

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

All LCS QC acceptance criteria were met. No LCSD analysis was performed. The MSD analysis was used as a measure of laboratory precision. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All MS/MSD QC acceptance criteria were met, except as noted above in the summary section.

Detection Limits/Dilutions

All detection limits were properly reported. Sample 195625-001 was diluted 10X due to high concentration of the target analyte. Associated batch QC samples were diluted by the same dilution factor. No other samples required dilution.

Perchlorate Isotope Ratios

All reported Isotope Ratio QC acceptance criteria were met. It should be noted that Isotope Ratios for sample 195625-001 and associated QC samples were not reported and could not be evaluated. No sample data should be qualified as a result.

Interference Check Sample (ICS)

All ICS QC acceptance criteria were met.

Other QC

The percent difference (%D) between the original sample result (sample 193603-009) and the confirmation sample result (195625-001) was <40%. No sample data should be qualified as a result.

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

No other specific issues were identified which affect data quality.

Analytical Quality Associates, Inc.

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Memorandum

DATE: November 1, 2007
TO: File
FROM: David Schwent
SUBJECT: General Chemistry Data Review and Validation - SNL
Site: Burn Site GWM (ER)
AR/COC: 611581 and 611584
SDG: 193603
Laboratory: GEL
Project/Task No: 98026.01.06

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), and EPA9056 (anions). 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 193603-016 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 and the following. Nitrate/nitrite was detected in the ICB and CCB at negative concentrations with absolute values > the MDL but < the PQL. However, the associated result of sample 193603-008 was a detect >5X the MDL and will not be qualified.

All Other Analyses: No target analytes were detected in the blanks.

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 PS 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 193603-008 was diluted 20X for nitrate/nitrite due to high concentration of the target analyte and sample -016 was diluted 5X for nitrate/nitrite due to matrix interference. Sample 193603-006 was diluted 10X for chloride and sulfate due to high concentrations of the target analytes. All associated batch QC samples were diluted at the same dilution factors. No other samples required dilution.

Other QC

No field blank (FBs) or field duplicates (FDs) were submitted on the AR/COCs. It should be noted that the equipment blank (EB) for nitrate/nitrite (sample 193603-016) submitted on COC 611584 applies to samples from COC 611585 in another package (SDG 193951).

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: Burn Site GWM (ER) AR/COC: 611581 and 611584 Organic, Metals, Gen Chem, Rad

Sample ID	Parameter	Value	Method	Notes
085249-009 CYN-MW6 085249-033 CYN-MW6 085255-018 TAV-EB1	EPA8260B (VOCs):			All Acceptance criteria met. No sample data will be qualified.
	EPA8270C (SVOCs):			
	EPA8015A/B (DRO):			
	EPA8015B (GRO):			All Acceptance criteria met. No sample data will be qualified.
	EPA6020 (ICP-MS):			
	EPA8015A/B (DRO):			All Acceptance criteria met. No sample data will be qualified.
	EPA906.0 (Tritium):			
	EPA900.0 (Gross Alpha/Beta):			All Acceptance criteria met. No sample data will be qualified.
	EPA906.0 (Tritium):			
	EPA8270C (SVOCs):			All Acceptance criteria met. No sample data will be qualified.
	EPA906.0 (Tritium):			
	EPA8015A/B (DRO):			All Acceptance criteria met. No sample data will be qualified.
	EPA906.0 (Tritium):			
	EPA8015B (GRO):			All Acceptance criteria met. No sample data will be qualified.
	EPA906.0 (Tritium):			
	EPA6020 (ICP-MS):			All Acceptance criteria met. No sample data will be qualified.
	EPA906.0 (Tritium):			
	EPA7470A (CVAA):			All Acceptance criteria met. No sample data will be qualified.
	EPA314.0 (Perchlorate):			
	EPA9056 (Anions):			All Acceptance criteria met. No sample data will be qualified.
	EPA353.2 (Nitrate/nitrite):			
	EPA353.2 (Nitrate/nitrite):			UJ,B4
	EPA901.1 (Gamma Spec):			
	N599 (nitrate/nitrite)			BD,FR3
	86954-36-1 (Am-241)			
	10045-97-3 (Cs-137)			BD,FR3
	10198-40-0 (Co-60)			
	13966-00-2 (K-40)			BD,FR3

Validated By: *David Schmitt* Date: 11/01/07