

SNL 07



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



JUN 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 May 2007, Consolidated Quarterly Report for the Environmental Restoration Project that addresses all quarterly reporting requirements required under the Hazardous and Solid Waste Amendments Module of the Resource Conservation and Recovery Act Permit, the Compliance Order on Consent (Consent Order) and the Chemical Waste Landfill Closure Plan for Sandia National Laboratories/New Mexico (SNL/NM), EPA ID No. NM5890110518.

Pursuant to perchlorate screening, detectable concentrations (8.1 versus 4.0 micrograms/liter) continue to be found at monitoring well CYN-MW6 (located at the Burn Site groundwater area). We will continue to sample and monitor the trend, plus provide the results in the next quarterly report due by the end of September 2007. Also, we initiated discussions with your office via the attached April 19, 2007, letter recommending continued monitoring through December 2007. We cordially request your concurrence to this approach or let us know of any concerns or alternate frequency for continued monitoring.

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

Sincerely,

Patty Wagner
Manager

Enclosure

Mr. J. Bearzi

2

JUN 27 2007

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)

cc w/o enclosure:

M. Reynolds, NNSA/SSO
J. Gould, NNSA/SSO
A. Blumberg, SNL/NM, Org. 11100, MS 0141
D. Miller, SNL/NM, Org. 6765, MS 0718
P. Freshour, SNL/NM, Org. 6765, MS 1087
B. Langkopf, SNL/NM, Org. 6765, MS 1087
M. J. Davis, SNL/NM, Org. 6765, MS 1087
Records Center, SNL/NM, Org. 6765, MS 1087

CERTIFICATION STATEMENT FOR APPROVAL AND FINAL RELEASE OF DOCUMENTS

Document title: Consolidated EPA Quarterly Report, May 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: Francis B. Nimick
Francis B. Nimick
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6/20/07
Date

and

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

6-27-07
Date



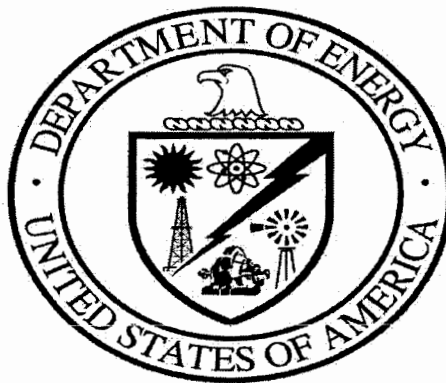
Sandia National Laboratories, New Mexico (SNL/NM)

Environmental Restoration Project

A Department of Energy Environmental Cleanup Program

**CONSOLIDATED
Quarterly Report**

JUNE 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**

May 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. The following entities are addressed in these Sections:

SECTION I

ER Quarterly

SECTION II

Chemical Waste Landfill

SECTION III

Perchlorate Screening

SECTION I

1.0 Introduction

The technical status of each ongoing activity in the Environmental Restoration (ER) Project is discussed in an Activity Data Sheet (ADS), which corresponds to an Operable Unit (OU) for assessment and remediation, or to a specific functional area of the project in the case of Project Management and Technical Support.

2.0 Work Completed in This Quarter (February - April 2007)

2.1 ADS 1285 Technical Support

2.1.1 ER Site Tracking (ERST)

- No ER site reviews were completed and delivered during this quarter.

2.1.2 Risk Assessment

- No risk assessments were completed for this quarter.

2.1.3 Environmental Restoration Field Office (ERFO) Support

- During February and March, Second Quarter sampling was completed for Tech Area V Groundwater monitoring (GWM) and Canyons Ground Water Monitoring. Annual Sampling was completed for the Ground Water Protection Program.
- During April, annual sampling for Mixed Waste Landfill GWM was completed and Third Quarter sampling was started for Chemical Waste Landfill GWM (completed in May 2007).
- Waste management was supported in discharging purge and decontamination water to the sanitary sewer (3291 gallons for February through April).
- ER Field Office (ERFO) crew supported efforts to complete placement of erosion control on Mixed Waste Landfill Site in April.

2.1.4 Geographic Information System (GIS) Program

Requests received (February 1, 2007 to April 30, 2007)

GPS:	7
Data:	9
Maps	22
Total:	38

Requests completed (February 1, 2007 to April 30, 2007)

GPS:	7
Data:	9
Maps:	19
Total:	35 completed out of 38 received (completion rate 92%)

2.1.5 Environmental Restoration Data Management System (ERDMS)

- There are now 2,571,404 data records in the ERDMS.
- 67 analytical data packages containing 8,916 new data points were processed and loaded into the ERDMS.
- 6,904 new data validation qualifiers and descriptive flags were entered into the ERDMS.
- 32 tables were generated in support of CAMU (Corrective Action Management Unit), groundwater monitoring, and MWL (Mixed Waste Landfill).
- 39 data packages were submitted to the Records Center (RC).
- 207 CAMU field measurements were entered into the database.
- Database clean-up activities continued.

2.1.6 ES&H and Security (ESHSEC) Records Center

- 285 ER records were received and 263 records were processed into the records management system. The difference is due to records received at the end of one month but not processed until the next month.
- 103 records of the 1298 customer requests were retrieved for reviews at the RC.
- Site Closure: Customer Funded Record Center - RC analysts continue to work with ER staff to identify NFA references and records that still need to be submitted to the RC.
- Imaging: RC staff has imaged 318 records during this quarter.
- 676 records were sent to Inactive Storage.
- Worked on imaging Justification Binders and NFA Reports for review and approval project.
- Continuing to image most project documentation as time and budget permit.
- Worked on Chain-of-Custody packages for Mixed Waste Landfill.
- Received one FOIA request for Mixed Waste Landfill.

2.1.7 SMO/Data Validation

- The SMO packaged and shipped 252 samples to contract laboratories for 5 ER/LTS projects.
- GEL and Severn Trent met contractual 30-day TAT (greater than 90% of the time) on 30-day requests. The labs also met customer requirements on 15-day rush for final data packages during this quarter.
- 88 data packages were sent through contract verification review with an average TAT of three calendar days. 63% of the data packages were for ER/LTS projects.
- 47 total data packages were validated for ER/LTS. The majority of the data packages were for groundwater monitoring. The average turn-around time (TAT) for packages at validation was four calendar days.

Eighty percent of the work processed during this period was in support of groundwater monitoring. Twenty percent of the work supported CAMU operations.

2.2 ADS 1289 Mixed Waste Landfill (MWL)

- In the absence of a timely NMED decision regarding the MWL final cover design, DOE requested that all field activities at the MWL be terminated, as subgrade preparation activities are now complete. The MWL subgrade was subsequently covered with erosion-control matting to minimize erosion from wind and rain during the summer monsoon season. A swale was constructed along the east perimeter of the site to prevent overland flow from damaging the subgrade.
- The MWL technical team began developing the MWL Long Term Monitoring and Maintenance Plan. The draft plan includes recommendations to plug and abandon, and replace aging monitoring wells with corroding stainless steel screens. The plan includes a recommendation to transition to low-flow sampling of groundwater using the approach outlined in the NMED Position Paper on Low-Flow Sampling (October 2001). The low flow sampling methodology has been endorsed by EPA, is being utilized in many other states, and should provide more representative samples of MWL groundwater.
- Citizen Action filed a Motion for Reconsideration to reopen the MWL Permit Modification Proceedings for taking of new evidence, based on a claim that the nickel contamination found in MWL wells with stainless steel screens originates from the MWL, and not the corroding well screens.
- Because of concerns regarding the MWL monitoring well network, MWL wells were scoped using a video camera to assess condition of the wells and well screens. All 4 wells with stainless steel screens show visible signs of corrosion. Background monitor well MWL-BW1 has effectively gone dry and monitor well MWL-MW3 has a breach in its casing at a depth of 40 ft.
- A recommendation was made to DOE in February to replace some of the older MWL monitoring wells with stainless well screens showing signs of corrosion. DOE agreed to replace these wells as budget allows. Evidence of the corrosion is seen in the increasing concentrations of nickel in MWL-MW1 and sporadic detections of

chromium above the MCL in MWL-MW1, MWL-MW2, and MWL-MW3. These data have raised some concerns by the public that the MWL may be contaminating groundwater with nickel and perhaps chromium.

- NMED requested on March 23, 2007 that well MWL-BW1 be plugged and abandoned (P&A'd) and replaced. A P&A and Well Replacement Plan for MWL-BW1 was submitted to NMED on April 17, 2007.
- Routine neutron moisture logging of the MWL vadose zone was conducted on March 20, 2007 to obtain baseline data regarding moisture content profiles with depth beneath the landfill.
- Annual groundwater sampling was conducted at the MWL from April 6 through April 12. Five monitoring wells were sampled. The background well, MWL-BW1 could not be sampled due to insufficient water in the well because of declining water levels in the regional aquifer. Onsite monitoring well MWL-MW4 could not be sampled due to failure of the Bennett pump. Plans are underway to replace the pump and tubing bundle, and to sample the well in June, 2007.

2.3 ADS 1295 Drain and Septic Systems (DSS)

- Forty-one DSS sites are awaiting regulatory approval for the September 2005 and March 2006 permit modification requests.
- The Permit Modification process for the remaining DSS site, AOC 1101 (Building 885 Septic System (TA-I) is expected to occur in early CY08. It will be one of five sites included in the Permit Modification request.

2.4 ADS 1303 Technical Area II - This ADS has been closed

- Only regulatory and administrative closure activities remain. Those activities are being tracked and managed under the Project Management ADS 1326

2.5 ADS 1306 Technical Areas III and V - This ADS has been closed

- Only regulatory and administrative closure activities remain. Those activities are being tracked and managed under the Project Management ADS 1326

2.6 ADS 1309 Tijeras Arroyo - This ADS has been closed

- Only regulatory and administrative closure activities remain. Those activities are being tracked and managed under the Project Management ADS 1326

2.7 ADS 1326 Project Management

- Operable units with only regulatory and administrative closure activities remaining will be closed and those activities will be tracked and managed under the PM ADS.

Technical Area II

- Two Technical Area II sites are awaiting regulatory approval of the September 2005 permit modification request:

SWMU 1: Radioactive Waste Landfill
SWMU 3: Chemical Disposal Pits

Technical Areas III and V (Including LWDS)

- Five Technical Area 3/5 sites are awaiting regulatory approval of the September 2005 and March 2006 permit modification requests:

SWMU 4: LWDS Surface Impoundments
SWMU 5: LWDS Drainfield
SWMU 52: LWDS Holding Tanks
SWMU 78: Gas Cylinder Disposal Pit
SWMU 196: Building 6597 Cistern

- The Permit Modification process for the remaining Technical Area 3/5 site, SWMU 105 (Mercury Spill at Building 6536), is expected to occur in early CY08. It will be one of five sites included in the Permit Modification request.

Tijeras Arroyo

- Four Tijeras Arroyo sites are awaiting regulatory approval of the September 2005 and March 2006 permit modification requests:

SWMU 45: Liquid Discharge
SWMU 46: Old Acid Waste Line Outfall
SWMU 233: Storm Drain System Outfall
SWMU 234: Storm Drain System Outfall

Central Coyote Test Area

- One Central Coyote Test site is awaiting regulatory approval of the March 2006 permit modification request:

SWMU 68: Old Burn Site.

Southwest Test Area

- One Southwest Test site is awaiting regulatory approval of the March 2006 permit modification request:

SWMU 91: Lead Firing Site.

2.8 ADS 1330 Site-Wide Hydrogeologic Characterization

TA-3/5 Groundwater

- Quarterly sampling was performed.

Canyons Groundwater

- Quarterly sampling was performed.

Tijeras Arroyo Groundwater

- No groundwater sampling was performed.

Mixed Waste Landfill Groundwater

- Annual groundwater sampling was performed.

Chemical Waste Landfill Groundwater

- Semi-annual groundwater sampling was performed.

DSS Groundwater

- No groundwater activities were performed.

2.9 ADS 1332 Foothills Test Area

- The Permit Modification process for the remaining three sites in the Foothills Test Area is expected to be delayed to early in CY08. This includes SWMU 28-2 (Mine Shaft), SWMU 8 [Open Dump (Coyote Canyon Blast Area)] and SWMU 58 (Coyote Canyon Blast Area). These sites will be three of five sites included in the Permit Modification request. A Certificate for Corrective Action Complete must be received for SWMU 58 (Coyote Canyon Blast Area) before the Permit Modification process will be started for these sites.

2.10 ADS 1334 Central Coyote Test Area- This ADS has been closed

- Only regulatory and administrative closure activities remain. Those activities are being tracked and managed under the Project Management ADS 1326

2.11 ADS 1335 Southwest Test Area- This ADS has been closed

- Only regulatory and administrative closure activities remain. Those activities are being tracked and managed under the Project Management ADS 1326

2.12 ADS 1345 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 2007), including containment cell cover, storm water diversion structures, security fences, gates, and signs.
- Quarterly monitoring of the VZMS was conducted in March 2007.
- Waste management associated with the leachate collection was conducted.
- Composite leachate sampling conducted on 3/20/2007.

CAMU Waste Management Activities

For this quarter (February – April 2007),

- Waste stored on site at the beginning of this period:
 - 82 gallons of leachate.
 - 5 lbs PPE.
- Waste generated on-site during the period:
 - 270 gallons of leachate.
 - 5 lbs PPE, paper wipes, plastic drum pump.
- Waste removed from site by the Hazardous Waste Management Facility:
 - 237 gallons of leachate on March 28, 2007.
 - 5 lbs PPE, paper wipes and plastic drum pump on March 28, 2007.
- Waste remaining on site at the end of this period:
 - 115 gallons of leachate.
 - 5 lbs PPE.

Regulatory Activities

- There were no regulatory activities during this reporting period.

3.0 Estimate of the percentage of work completed

- See discussions under each ADS.

4.0 Projected Work for the Next Quarter

- Work will continue on the following tasks: groundwater monitoring; waste management; data management; administrative closure; CWL activities; MWL CMI-related activities; and documentation (primarily RSI/NOD responses).

5.0 Summaries of Contacts Pertaining to Corrective Action

February 2007

- None.

March 2007

- None.

April 2007

- None.

6.0 Summary of Changes to Project Implementation

- No significant changes have been made to project implementation during this reporting period.

SUMMARY
OF
QUARTERLY REPORT

February – April 2007
Fiscal Year 2007

1. General.

The Quarterly Report is a deliverable requirement stated in the Resource Conservation and Recovery Act (RCRA), Hazardous and Solid Waste Amendments Act (HWSA) Permit, Section F.1. The Quarterly Report discusses the technical status of each ongoing activity in the Environmental Restoration (ER) Project.

The progress for the past quarter is reported by Activity Data Sheet (ADS), which correspond to Operable Units (OUs) for assessment and remediation, or to a specific functional area of the project in the case of Project Management and Technical Support.

2. Contents.

a. The status for each ADS contains the following, if applicable:

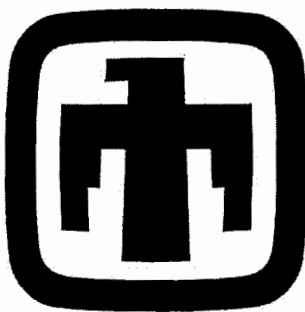
- description of work completed, and
- summaries of all findings.

b. The general status items for the ER Project, which follow ADS status, contain the following:

- summaries of all problems or potential problems,
- projected work for the next quarter, and
- summaries of changes to project implementation.

3. Controversial Issues.

No potentially controversial issues are presented in this report that have not been identified previously to the regulatory agencies.



Sandia National Laboratories/New Mexico

**CHEMICAL WASTE LANDFILL
QUARTERLY CLOSURE PROGRESS REPORT**

JUNE 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.

ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
CMS	corrective measures study
CWL	Chemical Waste Landfill
DOE	U.S. Department of Energy
HWB	Hazardous Waste Bureau
LE	Landfill Excavation
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
PA	Permit Application
PCCP	Post-Closure Care Plan
RAP	Remedial Action Proposal
RCRA	Resource Conservation and Recovery Act
RSI	Request for Supplemental Information
Sandia	Sandia Corporation
SNL/NM	Sandia National Laboratories/New Mexico
TSCA	Toxic Substances Control Act
VCM	voluntary corrective measure

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SECTION II. CHEMICAL WASTE LANDFILL

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 Postclosure Permit Application (Closure Plan) (SNL/NM December 1992). This section documents activities at the CWL for the time period of February through April 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 2005a) 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 meetings 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 (Kielsing 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.

Chapter 2.0 addresses closure progress and regulatory deliverables. Chapter 3.0 discusses monitoring activities, and Chapter 4.0 outlines the activities to be conducted during the next quarterly reporting period (May 2007 through July 2007).

2.0 CLOSURE PLAN PROGRESS AND DELIVERABLES

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 preparing and submitting the Final Resource Conservation and Recovery Act (RCRA) Closure Report, expected to be submitted in 2007 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.

3.0 WATER MONITORING ASSESSMENT

No groundwater or soil-gas sampling was performed at the CWL during this reporting period. Groundwater monitoring is currently conducted on a semi-annual basis per the requirements of the Closure Plan. Soil-gas sampling is not required under the Closure Plan but is expected to be a requirement for post-closure care (Kielling December 2003). Groundwater monitoring is planned at the CWL for May 2007. Additional post-closure requirements will be implemented upon approval of the CWL Post-Closure Permit and Final RCRA Closure Report by the NMED.

4.0 PROJECTED ACTIVITIES FOR THE UPCOMING QUARTER

NMED has indicated the draft permit for post-closure care at the CWL is expected to be issued in late May 2007. There will be a public comment period for this permit process, which also includes the revised CMS Report and a revision to Chapter 12 of the CWL Closure Plan.

A groundwater monitoring sampling event is anticipated to take place during May of 2007.

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.

Perchlorate Screening Quarterly Monitoring Report

**First Quarter of Calendar Year 2007
(January, February, and March 2007)**

Sandia National Laboratories, New Mexico

Environmental Restoration Project, Department 6765

June 2007

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.

Perchlorate Screening Quarterly Monitoring Report First Quarter of Calendar Year 2007 (January, February, and March 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 first quarter of Calendar Year 2007 (CY2007) in response to the requirements of the Order.

During the first 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 March 14, 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 8.12 micrograms per liter ($\mu\text{g/L}$). 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 First Quarter of Calendar Year 2007 (January, February, and March 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 (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 first 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. 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 sixth 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), and
5. Fourth Quarter of Calendar Year 2006 (SNL/NM March 2007).

DOE/Sandia recommended the continuation of this monitoring and quarterly reporting for CYN-MW6 through at least the fourth quarter of CY2007 (SNL/NM March 2007).

2.0 Scope of Activities

This report provides perchlorate screening results from the first quarter of CY2007 (January, February, and March 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, the 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 or subsequent quarterly reports. Wells discussed in previous perchlorate screening reports include: CYN-MW1D, CYN-MW5, CYN-MW7, CYN-MW8, MRN-2, MRN-3D, MWL-BW1, MWL-MW1, NWSA3-MW2, and SWTA3-MW4.

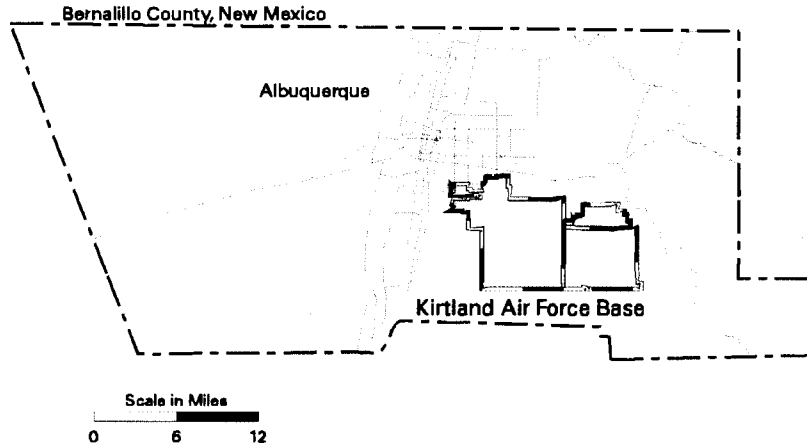
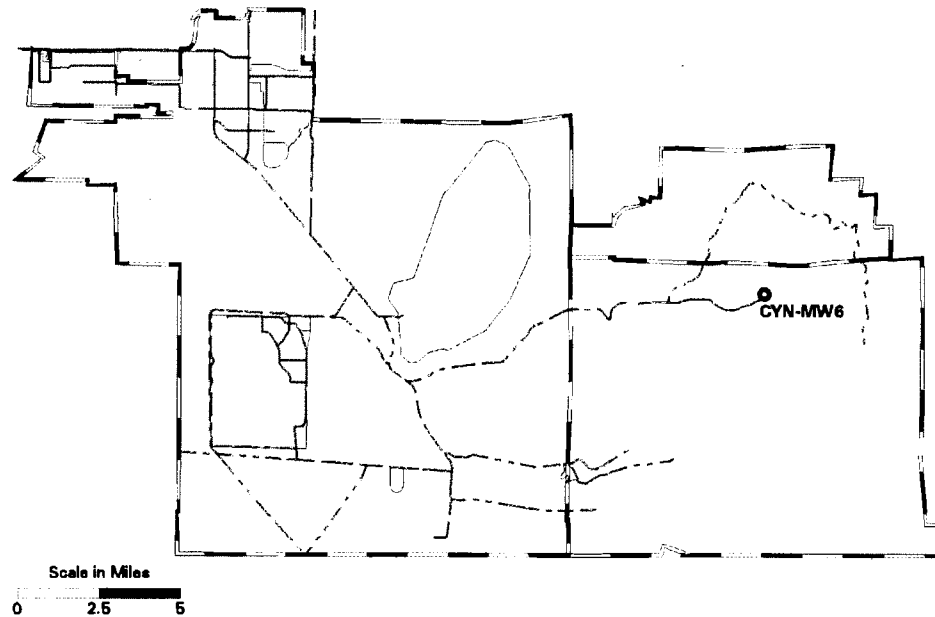
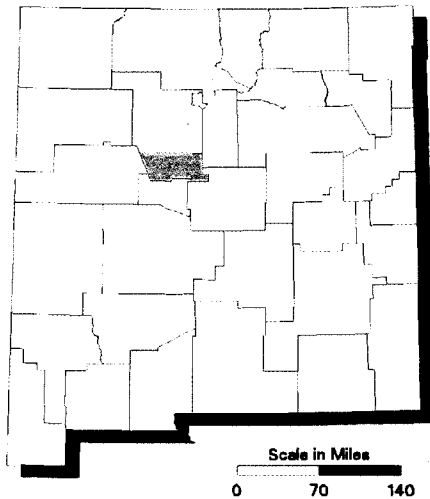


Figure 1
Sandia National Laboratories
New Mexico
Current Perchlorate-Screening
Monitoring-Well Network
(Jan/Feb/Mar 2007)

Bernalillo County, New Mexico



**Table 1
Current Perchlorate-Screening Monitoring-Well Network
First Quarter of CY2007 (January, February, and March)**

Well	Date Sampled	Number of Consecutive Sampling Events ^a	Remaining Number of Sampling Events ^b	Sampling Method
CYN-MW6	14-MAR-07	5	3 ^c	Bennett TM 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 monitoring perchlorate concentrations in CYN-MW6 for three more quarters.

DOE/Sandia performed groundwater sampling at CYN-MW6 on March 14, 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, “Canyons Groundwater Monitoring, Mini-Sampling and Analysis Plan (SAP) for Second Quarter Fiscal Year 2007” (SNL/NM January 2007).

As described in the SAP, groundwater sampling was performed in conformance with current Sandia Environmental Restoration (ER) Project field operating procedures (FOPs). A portable BennettTM 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 94-26, “General Equipment Decontamination” (SNL/NM February 1997). The well was purged a minimum of one saturated screen volume before sampling.

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. Groundwater temperature, SC, ORP, DO, and pH were measured using with an YSITM Model 620 Water Quality Meter. Turbidity was measured with a HACHTM 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 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 First Quarter of CY2007 Perchlorate Sampling

Well	Sample Identification	AR/COC Number	Date Shipped
CYN-MW6	084237-020	611200	14-MAR-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 only well currently in the perchlorate-screening monitoring-well network). The analytical laboratory certificate of analysis for the first CY2007 perchlorate data is included as Appendix A. Consistent with historical analytical results, perchlorate was detected above the screening level/MDL in the first quarter of CY2007 in CYN-MW6.

As shown in Figure 2, the concentration of perchlorate found in CYN-MW6 in March 2007 (8.12 µg/L) is slightly lower than concentrations reported for last quarter (SNL/NM March 2007), but overall consistent with concentrations from previous quarters (SNL/NM May 2006, SNL/NM June 2006, SNL/NM September 2006, and SNL/NM December 2006).

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, "Data Validation Procedure for Chemical and Radiochemical Data." (SNL/NM December 2003). 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 Canyons Groundwater Monitoring mini-SAP (SNL/NM January 2007) were identified during the First 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 concentration from this sampling event (8.12 µg/L) is consistent with the concentrations presented in the previous quarterly reports (Figure 2) (SNL/NM June 2006, SNL/NM September 2006, SNL/NM December 2006, and SNL/NM March 2007).
- 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).

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

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	

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.

P2 = Insufficient quality control data to determine laboratory precision.

^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 Results for CYN-MW6**

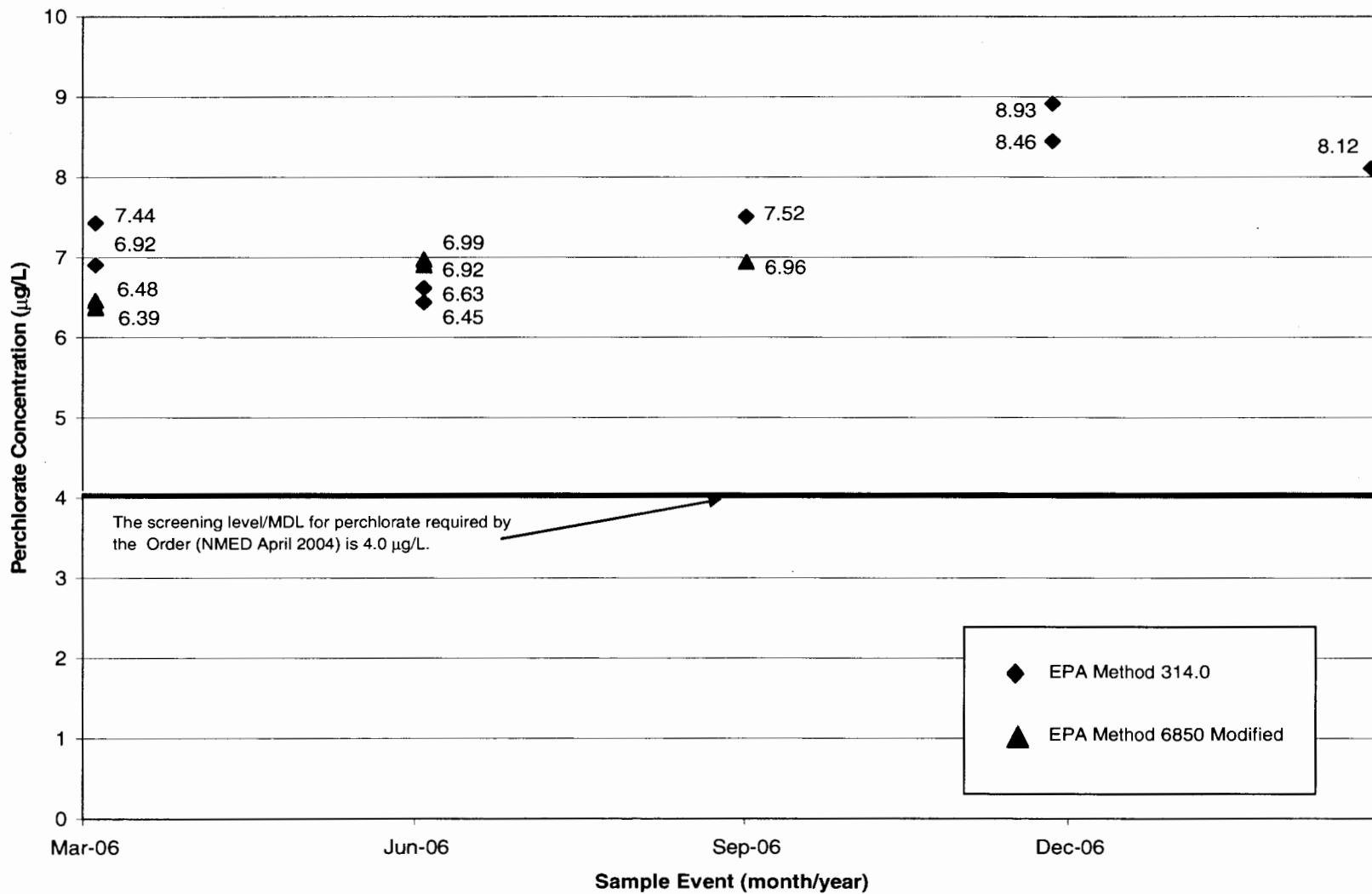


Table 4
Perchlorate Screening Groundwater Monitoring
Field Water Quality Measurements^a, First Quarter of CY2007

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	14-Mar-07	16.00	1053	240.6	7.03	0.48	25.4	2.49

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).

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.

6.0 References

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.

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Sandia National Laboratories, New Mexico (SNL/NM) January 2007. "Canyons Groundwater Monitoring, Mini-Sampling and Analysis Plan (SAP) for Second Quarter Fiscal Year 2007". Sandia National Laboratories, New Mexico Environmental Restoration Project. January 24, 2007.

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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 Certificate of Analysis for the Perchlorate Data

Note: The AR/COC and the Certificate of Analysis for the perchlorate data in this Appendix identify the well as "CYN-MW3", whereas the correct well identification is "CYN-MW6". This correction has been made in the Environmental Restoration Data Management System, as well as files submitted to the Sandia Customer-Funded Records Center.

**CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY**

Internal Lab

Batch No. N/A		SMO Use 18026 01.06		AR/COC 611200								
Dept. No./Mail Stop: 6765/1087		Date Samples Shipped: 3-14-07		Project/Task No. 60000-10-11-01								
Project/Task Manager: Paul Freshour		Carrier/Waybill No. 75007		SMO Authorization: Edie Kent								
Project Name: CYN GWM		Lab Contact: Edie Kent/803-556-8171		Contract #: PO 21871								
Record Center Code: ER/1333/DAT		Lab Destination: GEL		SUBBOTTLE DRUM								
Logbook Ref. No.: ER 058		SMO Contact/Phone: Pam Puissant/505-844-3185										
Service Order No. CF#003-07		Send Report to SMC: Lorraine Herrera/505-844-3199										
Location		Tech Area		<input type="checkbox"/> Waste Characterization -Send preliminary/copy report to: <input type="checkbox"/> Released by COC No.: <input checked="" type="checkbox"/> Validation Required Bill To: Sandia National Labs (Accounts Payable) P.O. Box 5800 MS 0154 Albuquerque, NM 87185-0154 18241370								
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	Volume	Preservative	Collection Method	Sample Type	Parameter & Method Requested	Lab Sample ID
084237-001	CYN-MW3	164	N/A	031407/1039	GW	G	3 x 40ml	HCL	G	SA	VOC (8260)	001
084237-002	CYN-MW3	164		031407/1040	GW	AG	4 x 1L	4C	G	SA	SVOC (8270)	002
084237-018	CYN-MW3	164		031407/1041	GW	P	250 ml	H2SO4	G	SA	NPN (353.2)	003
084237-019	CYN-MW3	164		031407/1042	GW	P	250 ml	4C	G	SA	NPN (300.0)	004
084237-005	CYN-MW3	164		031407/1043	GW	AG	4 x 1L	4C	G	SA	TPH Diesel (8015)	005
084237-006	CYN-MW3	164		031407/1044	GW	G	3 x 40ml	HCL	G	SA	TPH Gasoline (8015)	006
084237-016	CYN-MW3	164		031407/1045	FGW	P	500 ml	HNO3	G	SA	Major Cations (6020)	007
084237-020	CYN-MW3	164		031407/1046	GW	P	500 ml	4C	G	SA	Perchlorate (314.0)	008
084238-001	CYN-MW3	164		031407/1039	DIW	G	3 x 40ml	HCL	G	TB	VOC (8260) field QC	009
RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No.		Sample Tracking		Smo 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/yy)		Entered by:		EDD <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Lab Use		
Turnaround Time <input type="checkbox"/> 7 Day <input type="checkbox"/> 15 Day <input checked="" type="checkbox"/> 30 Day		Negotiated TAT		QC inits.		Level D Package <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
Return Samples By:						*Send report to: Tim Jackson/Org. 6765/MS. 1087/505-284-2547						
Sample Team Members	Name	Signature	Init	Company/Organization/Phone/Cellular		FGW (filtered in field with 40 micron filter)						
	Robert Lynch	<i>[Signature]</i>	RL	Weston/6765/284-4013/250-7090								
	Alfred Santillanes	<i>[Signature]</i>	AS	Weston/6765/844-5130/228-0710								
	William J Gibson	<i>[Signature]</i>	WJG	Weston/6765/284-5232/239-7387								
*Please list as separate report.												
1. Relinquished by <i>[Signature]</i> Org. 6765 Date 3/14/07 Time 1130		4. Relinquished by		Org.		Date		Time				
1. Received by <i>[Signature]</i> Org. 6765 Date 3/14/07 Time 1130		4. Received by		Org.		Date		Time				
2. Relinquished by <i>[Signature]</i> Org. 6765 Date 3/14/07 Time 1230		5. Relinquished by		Org.		Date		Time				
2. Received by <i>[Signature]</i> Org. 6765 Date 3/15/07 Time 1015		5. Received by		Org.		Date		Time				
3. Relinquished by		6. Relinquished by		Org.		Date		Time				
3. Received by		6. Received by		Org.		Date		Time				

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: April 11, 2007

Client Sample ID: 084237-020 Project: SNLSGW
 Sample ID: 182443008 Client ID: SNLS002
 Matrix: AQUEOUS
 Collect Date: 14-MAR-07 10:46
 Receive Date: 15-MAR-07 Client Desc.: CYN-MW3
 Collector: Client

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	0.00812	0.004	0.012	mg/L	1	MAR103/21/07	2315	618347	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 314.0 DOB-AL	

Appendix B

Data Validation Sample Findings Summary Sheets for the Perchlorate Data

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 27, 2007
To: File
From: Kevin Lambert
Subject: Inorganic Data Review and Validation – SNL
Site: Canyons Assessment GWM
AR/COC: 611200
SDG: 182443
Laboratory: GEL
Project/Task: 98026.01.06

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 1.

Summary

One sample was prepared and analyzed with accepted procedures using method EPA 6020 (ICP-MS metals). One sample was prepared and analyzed with accepted procedures using method EPA 353.2 (nitrate/nitrite). One sample was prepared and analyzed with accepted procedures using method EPA 300.0.0 (anions by Ion Chromatography). One sample was prepared and analyzed with accepted procedures using method EPA 314.0 (perchlorate). It should be noted that after receipt of the samples the client requested anions analysis by method EPA 300.0 be added to sample 182443-004. Problems were identified with the data package that result in the qualification of data.

1. **Ion Chromatography (IC):**

Nitrate-N was analyzed within the holding time but required dilution and was reanalyzed out of holding time. The reanalysis sample result was provided along with QC data. The reanalysis sample result was a detect and will be qualified "J, HT."

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 except as noted above in the summary section.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks except as follows.

Nitrate/Nitrite:

The target analyte was detected (\geq DL) in one or more of the blanks (ICB, CCB, MB) at a negative concentration with an absolute value $>$ the DL but $<$ the RL. The associated sample result was a detect $>5X$ the DL; no data should be qualified as a result.

IC:

Bromide was detected (\geq DL) in one or more of the blanks (ICB, CCB, MB). The associated sample result was a detect $>5X$ the blank concentration; no data should be qualified as a result.

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

The LCS/LCSD met QC acceptance criteria except as follows.

All Analyses:

It should be noted that no LCSD was provided with the SDG. Laboratory precision was assessed using the replicate. No data should be qualified as a result.

Matrix Spike (MS)

The MS met QC acceptance criteria except as follows.

ICP-MS metals:

It should be noted the MS recovery limits do not apply for the target analytes with sample concentrations $>4X$ the spike concentrations (see Data Validation Worksheets). No data should be qualified as a result.

Replicate

The replicate met QC acceptance criteria.

ICP Serial Dilution

The serial dilution met QC acceptance criteria.

ICP Interference Check Sample (ICS)

The ICS data met QC acceptance criteria.

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required except as follows.

ICP-MS metals:

Sample 1802443-007 was diluted $5X$ for calcium due to high concentration for this analysis.

IC:

Sample 182443-004 was diluted $10X$ for chloride, Nitrate-N, and sulfate due to high concentrations for this analysis.

Nitrate/Nitrite:

Sample 182443-003 was diluted 50X for nitrate/nitrite due to high concentration for this analysis.

Other QC

No trip blank (TB), equipment blank (EB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s).

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: Canyons Assessment GWM

AR/COC: 611200

Data Type: Organic & Inorganic

	VOC																	
	67-64-1 (acetone)	71-43-2 (benzene)	SVOC	129-00-0 (pyrene)	56-55-3 (benzo[<i>a</i>]anthracene)	91-20-3 (naphthalene)	91-57-6 (2-methylnaphthalene)	218-01-9 (chrysene)	Diesel Range Organics	394878-87-0 (DRO)	General Chemistry	INO2NASN (Nitrate-N)						
084237-001 CYN-MW6	5.0 U,B1	R																
084238-001 CYN-MW6		R																
084237-002 CYN-MW6				R	R	R	R	R										
084237-005 CYN-MW6									55.6U,B									
084237-019 CYN-MW6											J,HT							
GRO, Metals, Nitrate/Nitrite and Perchlorate analyses met QC acceptance criteria. No data will be qualified.																		

Validated By:

Kevin A Lambert

Kevin A. Lambert

Date: 04/27/07