Report

ENVIRONMENTAL RESTORATION PROJECT

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Rpt

Date: February 6, 2002
Refer to: ER2002-0096

Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

SUBJECT: QUARTERLY TECHNICAL REPORT FOR OCTOBER THROUGH DECEMBER 2001

Dear Mr. Young:

Enclosed are three copies of the Environmental Restoration (ER) Project's Quarterly Technical Report, October through December 2001. The Quarterly Technical Report presents information from each focus area on the quarter's activities, including regulatory meetings, sampling, cleanups, and report writing. Also enclosed is a certification statement signed by the designee owner and operator for the Los Alamos National Laboratory. In accordance with Laboratory security requirements, copies of this report are available upon request through the external ER Project Web site at http://erproject.lanl.gov/documents/virtualhome.html. The report is also available on the internal Web site at http://erproject.lanl.gov/documents/VL/status.html.

If you have questions regarding this report, please contact Dave McInroy at (505) 667–0819 or Mat Johansen at (505) 665–5046.

Sincerely,

Julie A. Canepa, Program Manager
Environmental Restoration Project
Los Alamos National Laboratory

Sincerely,

Mat Johansen, Project Manager
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8207

JC/MJ/MB/ch

Enclosure: 1) Quarterly Technical Report for October through December 2001 (ER2002-0010)
2) Certification

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Document Title: **Quarterly Technical Report, October through December 2001**

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ENVIRONMENTAL RESTORATION PROJECT

A Department of Energy
Environmental Cleanup Program

LA-UR-02-540
February 5, 2002
ER2002-0010

Quarterly Technical Report October–December 2001

Los Alamos
NATIONAL LABORATORY
Los Alamos NM 87545

Produced by the Regulatory Compliance Focus Area

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LIST OF ACRONYMS AND ABBREVIATIONS

BMP	best management practice
CAB	Citizens Advisory Board
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	corrective measures study
DOE	US Department of Energy
DOE-LAAO	US Department of Energy-Los Alamos Area Office
DX	Dynamic Experimentation (Division)
EDD	electronic data deliverable
ER	environmental restoration
ERDB	Environmental Restoration Database
ESH	Environment, Safety, and Health (Division)
ESH-18	Water Quality and Hydrology Group
ESH-19	Hazardous and Solid Waste Group
ESH-20	Ecology Group
ESL	ecological screening level
FIMAD	Facility for Information Management, Analysis, and Display
FY	fiscal year
GIS	Geographical Information System
HE	high explosives
HSWA	Hazardous and Solid Waste Amendments
Laboratory	Los Alamos National Laboratory
LANL	Los Alamos National Laboratory
LUT	look-up table
MDA	material disposal area
NFA	no further action
NMED	New Mexico Environment Department
NMED-HWB	New Mexico Environment Department-Hazardous Waste Bureau
NTISV	nontraditional in situ vitrification
PCB	polychlorinated biphenyl
PRS	potential release site
PTSE	primary toxicity study evaluation
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RSI	request for supplemental information
S-7	Classification Group
SAP	sampling and analysis plan
SMO	Sample Management Office
SOP	standard operating procedure
SQL	standard query language
SVOC	semivolatile organic compound
SWMU	solid waste management unit

TA	technical area
VCA	voluntary corrective action
VCM	voluntary corrective measure
VOC	volatile organic compound

QUARTERLY TECHNICAL REPORT

OCTOBER–DECEMBER 2001

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL RESTORATION PROJECT

ALBUQUERQUE OPERATIONS OFFICE

CONTRACTOR: University of California

PROJECT MANAGER: Julie Canepa

NUMBER OF POTENTIAL RELEASE SITES: Approximately 2,000

POTENTIAL WASTE: Radionuclides, High Explosives, Metals, Organics

1.0 INTRODUCTION

This quarterly report describes the technical status of activities in the Los Alamos National Laboratory (the Laboratory) Environmental Restoration (ER) Project. The activities are divided according to the current focus area structure and then, when applicable, by the technical area (TA) where the specific activity is located. The Hazardous and Solid Waste Amendments (HSWA) portion of the Laboratory's Hazardous Waste Facility Permit (Module VIII, Section P, Task V, C) requires the submission of a technical progress report on a quarterly basis. This report, submitted to fulfill the permit's requirement, summarizes much of the fieldwork and report-writing performed this quarter in the ER Project.

2.0 FOCUS AREAS

2.1 Canyons Investigations — Focus Area Leader: Allyn Pratt

2.1.1 Ongoing Reach Investigations

2.1.1.1 Acid Canyon (within the Pueblo Canyon watershed)

Data assessment is in progress for Phase III analytical data from the South Fork of Acid Canyon (reach ACS).

2.1.1.2 Pueblo Canyon

Data assessment is in progress for analytical data from four sediment samples collected in reach P-1 to evaluate mercury speciation. These data will be used to evaluate the need for Phase II sampling and will be incorporated in the future surface aggregate report for Los Alamos Canyon and Pueblo Canyon.

2.1.1.3 Los Alamos Canyon

Data assessment is in progress for analytical data from 73 Phase I sediment samples collected between reaches LA-2 and LA-3 to improve the understanding of contamination in this area. Data assessment is also in progress for 42 sediment samples collected from other parts of the canyon to evaluate organic analytes. These data will be used to evaluate the need for Phase II sampling and will be incorporated in the future surface aggregate report for Los Alamos Canyon and Pueblo Canyon.

2.1.1.4 Mortandad Canyon

Data assessment is in progress for analytical data from 286 sediment samples collected from reaches E-1, M-2, M-3, M-4, M-5, and TS-3 in fiscal year (FY) 2001. These data will be used to evaluate the need for future sampling and will be incorporated in the future surface aggregate report for Mortandad Canyon.

2.1.2 Los Alamos Canyon and Pueblo Canyon Surface Water and Alluvial Groundwater Investigation

The third of four rounds of surface and alluvial groundwater sampling activities has been completed. The first round of sampling captured high water levels associated with spring snowmelt runoff. The second round of sampling captured low water levels characteristic of the period immediately before the monsoon season. The third round of sampling, conducted in November, characterized waning post-monsoon water levels. The fourth round of sampling is scheduled for early in calendar year 2002 and should capture low mid-winter water levels.

2.1.3 Acid Canyon Interim Action

Sediment removal in the South Fork of Acid Canyon was completed on November 7, 2001, after extensive field radiological screening and 66 gross alpha analyses indicated that the cleanup goal had been met. A total of 49 roll-off bins containing approximately 480 yd^3 of sediment was removed from Acid Canyon and disposed at TA-54 as low-level radioactive waste. Thirty confirmation samples were collected for analysis at off-site laboratories. Results from these samples are pending and will be included in an interim action report. Collection of confirmation samples was followed by site restoration. All equipment has been demobilized, all waste drums have been removed from the site, and the area is open to the public.

2.2 Material Disposal Areas — Focus Area Leader: John Hopkins

2.2.1 General Information for Material Disposal Areas Focus Area

During the first quarter of FY 2002, the Material Disposal Areas (MDAs) Focus Area submitted responses to requests for supplemental information (RSIs) for the Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) reports for DP Tank Farm and MDA H, initiated RFI reports for MDAs B and U at TA-21, and peer-reviewed the corrective measures study (CMS) report for MDA H.

2.2.2 Technical Area Activities

2.2.2.1 TA-21

PRS 21-027(d)-99, NTISV Cold Demonstration VCM. The draft voluntary corrective measures (VCM) report proposing no further action (NFA) for Potential Release Site (PRS) 21-027(d)-99, the nontraditional in situ vitrification (NTISV) cold demonstration, was reviewed and comments are being incorporated. The New Mexico Environment Department (NMED) underground storage tank regulations risk approach was followed to address residual hydrocarbon contamination at the site. Results show no unacceptable risk for industrial or residential land use. The VCM report will be finalized in the January 2002 timeframe and submitted to NMED.

PRS 21-018(a)-99, NTISV Hot Demonstration at MDA V. The field phase of the hot demonstration was completed on April 28, 2000, and glass samples will be collected from the vitrified product and analyzed to determine the success of the demonstration. However, sample collection is being delayed until internal glass temperatures have cooled significantly. Monthly temperature monitoring indicates that the current surface temperature of the vitrified product is approximately 136 °F, and interior temperatures are expected to be much higher. Heat diffusion modeling is currently being conducted to predict a viable drilling and sampling schedule. Preliminary modeling results have yielded cooling times of several more years. The heat diffusion model is currently being refined to more realistically predict the cooling rate. Simultaneously, equipment and methods suited to drilling at elevated temperatures are also being researched. It is anticipated that an attempt to core the glass will be made towards the end of FY 2002.

PRS 21-011(k), VCM Activities. MDAs Focus Area and Regulatory Compliance staff met with NMED Hazardous Waste Bureau (NMED-HWB) staff on July 30, 2001, to discuss the approach for the implementation of the VCM at PRS 21-011(k), an outfall. During the meeting, the following information regarding the PRS was presented and discussed: summaries of confirmation sample data from the 1996 interim action, the results of the recent radiological surveys, and waste characterization sample results from 11 locations within the PRS. Reasons for implementing the VCM were presented also. Those reasons included source reduction/control, dose reduction, and prevention of subsequent contaminant migration down the canyon. The four main options discussed for the VCM included (1) no action; (2) fencing the site with some level of best management practices (BMPs); (3) source stabilization of "hot spots" with engineered site restoration along with BMPs and periodic monitoring, but no removal; and (4) excavation and removal of hot spots and site restoration.

The consensus is that no action and fencing of the site are not acceptable alternatives. Option 3 is the Laboratory's preferred approach and would involve the stabilization of approximately 500 yds^3 of hot spots, along with engineered site restoration to secure the source term and integrated long-term stewardship activities such as periodic monitoring/site surveys. BMP installation and maintenance will also continue. The implementation of this approach will save an estimated $2 million in waste management costs, while avoiding increased risk associated with the transportation of contaminated soils through the town site for disposal as low-level waste at TA-54, MDA G. Additionally, the stabilization of radionuclide-contaminated environmental media is a proven technology being implemented at other US Department of Energy (DOE) sites. NMED-HWB generally concurred with the approach described in Option 3, but stated that final approval will be based on bench-scale test results to be presented in the VCM plan.

Soil and tuff samples for the bench-scale stabilization testing were collected in December 2001. Actual bench-scale testing will begin in early January 2002. Results of the bench-scale testing and literature search will be presented in the VCM plan for the PRS 21-011(k) outfall, along with design specifications

for the engineered restoration of the site (conceptual design), post-stabilization/restoration site surveys and/or confirmation sampling, proposed BMPs, and components of long-term stewardship. The Laboratory does not plan to conduct a pilot study. If bench-scale test results are successful, NMED-HWB has indicated that results from the test can be applied to the implementation of the VCM for the PRS.

PRSs 21-024(f), 21-030 and C-21-015, VCA Activities. In a voluntary corrective action (VCA), all components of the septic system that served the former Safety Training Building at TA-21 (Building 21-45) have been removed (septic tank, sump, inlet/outlet lines). All samples have been collected from beneath the inlet/outlet lines, beneath the septic tank, adjacent to the septic tank, and beneath the sump. Outfall sampling is scheduled for January 2002. Excavated areas have been back-filled, revegetated, and mulched.

PRS 21-024(i), VCM Activities. During the first quarter of FY 2002, four additional subsurface soil samples were collected from the area below and adjacent to the location of the removed septic system that routed sanitary waste from a high-temperature chemistry building at TA-21 (Building 21-152) in an effort to better characterize extent of contamination. All site restoration and waste disposal activities resulting from FY 2001 and FY 2002 fieldwork have been completed. However, no analytical results for samples collected during August and October 2001 were available at the time of this quarterly report. Once analytical data are received, a decision peer review will be conducted to determine whether any additional actions are necessary for this site. The reporting effort for this project is ongoing.

PRS 21-029, DP Tank Farm. Site inspections of the two hydrocarbon seep areas in DP Canyon were conducted in October, November, and December of 2001. The inspection reports are included as Appendix A of this document. The RSI response to the RFI report for DP Tank Farm was submitted to the NMED-HWB in December 2001.

PRS 21-015 (MDA B RFI) and PRS 21-017(a)-99 (MDA U RFI). RFI reports were initiated for MDAs B and U. Data gaps were identified, and samples were collected to fill the data gaps.

PRS 21-023(a)-99, VCA Activities. VCA activities continued at the site of a former septic system that served Building 21-3N, the location of plutonium processing activities. The results of the geophysical investigation conducted in September 2001 were received during the first quarter of FY 2002. This investigation confirmed that all three of the septic tanks included in this PRS had been removed as reported. Inlet and outlet lines associated with two of the tanks, former PRSs 21-023(a) and 21-023(b), had also been removed. Based on the findings of the geophysical survey, the inlet and outlet lines associated with the third tank, former PRS 21-023(d), remain in the ground. Future VCA activities are likely to include the removal of these lines, as well as confirmation sampling. A final draft of the fact sheet for PRS 21-023(a)-99 was produced during the first quarter of FY 2002, and work on the draft VCA plan is ongoing.

2.2.2.2 TA-49

PRSs 49-001(a)-00, MDA AB, Areas 2, 2A, and 2B. Monthly moisture monitoring continued at this site during the first quarter of FY 2002. A review of the data is presented in Appendix B of this report. Erosion-control BMPs were inspected following precipitation events and remain in good condition. Work was initiated on a white paper to evaluate the type of drilling required to finalize subsurface investigations for MDA AB.

2.2.2.3 TA-50

Two boreholes were monitored for pore gas to measure the vertical extent of a potential volatile organic compound (VOC) plume at MDA C. The field-screening results for the first quarter of FY 2002 and the fixed-laboratory results for the first quarter are presented in Appendix C of this report.

2.2.2.4 TA-54

MDA H. The MDA H CMS report was peer-reviewed by internal Laboratory personnel and by an EM-50 panel funded by that organization's Subsurface Contaminants Focus Area. Peer review comments will be incorporated in January 2002.

Pore-Gas Monitoring. The quarterly pore-gas monitoring at MDAs G and L was completed as required by Module VIII of the Laboratory's Hazardous Waste Facility Permit. The field-screening information for the first quarter of FY 2002 is provided in Appendix C of this report.

PRS 54-007(c)-99. An RSI for the VCA completion report for the PRS 54-007(c)-99 septic systems was received in December 2001 and a response to the RSI is due February 9, 2002.

PRS 54-007(a). In November 2001, waste characterization samples were collected from PRS 54-007(a), a septic tank that served the Compactor Building (Building 54-2) and the Waste Management Control Facility (Building 54-11). Once the data are received in January 2002, a VCA/VCM plan will be prepared.

2.3 RCRA Corrective Actions — Focus Area Leader (Acting): Don Hickmott

2.3.1 High Explosives Production Sites Team

The High Explosives Production Sites Team continued fieldwork, data analysis, and report-writing activities in support of the CMS at PRS 16-021(c)-99 (the 260 outfall). The team continued the work associated with well CdV-R-15-3, including the fourth round of quarterly sampling, and continued work on the CdV-R-37-2 deep well. Westbay installation and site restoration were completed for that well. Hydrogeology studies, including stream profiles, were continued. High-performance team activities continued. Site restoration for the TA-16-260 interim measure was completed. Reviews of the TA-16 portion of the draft solid waste management unit (SWMU) report were completed. Several presentations were made to local and national groups.

2.3.1.1 TA-16

CMS Hydrogeology and Monitoring. The field team continued to monitor water levels in the Cañon de Valle alluvial wells and in the intermediate-depth wells. Four of five of the alluvial wells in Cañon de Valle contained water this quarter; the uppermost well was dry throughout the quarter. None of the intermediate-depth boreholes or the three alluvial wells in Martin Spring Canyon contained water throughout the quarter. By the end of the quarter, SWSC Spring was also dry. This is the first time that this is known to have occurred. Water levels throughout the TA-16 system were remarkably low, considering that monsoonal storms had been extensive. Quarterly sampling locations were sampled during December. Total dissolved solids (as measured via conductivity) were elevated in alluvial waters and surface waters in Cañon de Valle, presumably because of the effects of the Cerro Grande fire.

Geophysical investigations were completed in Cañon de Valle. The electrical results showed that there were extensive high-conductivity zones to a depth of approximately 60 ft in Cañon de Valle west of MDA P. This may represent a region of higher volumetric moisture content.

Stable isotope samples were collected at precipitation events. Every-other-day samples were collected and archived for eventual stable isotope analysis. Flow-integrated samples were collected in SWSC, Burning Ground, and Martin Springs. Stream profiles that included analytical laboratory sampling were completed. All first-quarter analytical results are pending.

The fourth round of quarterly sampling was completed at deep groundwater well CdV-R-15-3.

The CdV-R-37-2 well was completed. This quarter, the Westbay sampling system installation, site restoration, and waste management activities were completed. Cuttings were reviewed, and the final lithologic identifications were completed. Samples were selected for geologic analysis. The wellhead was surveyed. The total depth of the well was 1664 ft. Four intervals were screened: one in the vadose zone in a region that showed water infiltration on the borehole video, one at the top of the regional aquifer, one approximately 150 ft into the regional aquifer, and one near the bottom of the borehole. No high explosives (HE) were observed in the preliminary screening analysis or laboratory samples that were collected during drilling.

PRS 16-021(c) CMS. Initial data from the stormwater management system were received. This barrier unit is designed to remove HE and barium from spring waters. It appears to be removing HE effectively but not barium. Phytoremediation studies continued.

The 260 Outfall High-Performance Team met several times with the Ecological Risk High-Performance Team to evaluate ecological sampling in Cañon de Valle. Biota samples were submitted for laboratory analysis. Preliminary results for ecotoxicological samples for the aquatic system were received. The uppermost locale in Cañon de Valle showed ecological impacts, but the two downgradient locales did not.

PRS 16-021(c) Interim Measure. Site restoration activities were completed, including replacement of BMPs that had been damaged during the monsoonal rains. A draft of the interim measures report was completed.

Silver Outfall. The silver outfall (PRS 16-020) was burned in the Cerro Grande fire, and much of the PRS lies within the floodplain of Cañon de Valle. Hence, an accelerated ER activity was completed at the site to remove high levels of silver, chromium, and polyaromatic hydrocarbons known to be present at the PRS. During this quarter the field summary report was completed.

Surface Water. BMPs were inspected and maintained.

2.3.2 Firing Sites Team

No activities occurred this reporting period.

2.3.3 Industrial Sites Team

During the first quarter of FY 2002, Industrial Sites Team members responded to more than 60 requests for excavations and environment, safety, and health (ESH)-ID questionnaires. In addition, the team worked with facility managers (by attending meetings and providing information) on ongoing projects or planning of projects to be located where PRSs are present.

The Industrial Sites Team made two presentations at the DOE Technical Information Exchange meeting in November. The first was a presentation on the VCA performed at PRS 03-056(c), remediation of a former polychlorinated biphenyl (PCB) transformer site at Los Alamos National Laboratory. This presentation focused on the regulator and stakeholder interactions that made the project a success. The second presentation, Stabilization of Potential Release Sites (PRSs) in the Cañada del Buey Watershed after the Cerro Grande Fire at Los Alamos National Laboratory, was made in collaboration with the Laboratory's Water Quality and Hydrology Group (ESH-18) and the NMED-DOE Oversight Bureau.

2.3.3.1 TA-3

PRS 03-010(a). The ER Project received from the NMED-HWB an RSI, dated October 22, 2001, on the RFI report addendum for PRS 03-010(a), a systematic release from a vacuum pump repair shop. A 60-day extension was requested on November 5, 2001. NMED granted a 45-day extension to January 9, 2002, in a letter dated November 13, 2001.

The Industrial Sites Team met with NMED on October 2, 2001, to discuss draft RSI comments, and then again on December 4, 2001, to discuss the approach for continuing investigations at PRS 03-010(a). The team proposed using geophysical techniques as a first step, rather than drilling to investigate the shallow groundwater below the paved area where monitoring well B1/MW1 is located. NMED personnel agreed with the approach to be proposed as part of the RSI response. An RSI response was submitted to NMED on December 19, 2001.

PRS 03-056(c). The VCA report for the corrective action at this former PCB transformer site was completed and submitted to the US Environmental Protection Agency (EPA) and NMED during this last quarter of FY 2001. The EPA approved the corrective action. The letter from EPA, received at the Laboratory on December 5, 2001, approved the VCA report under the Toxic Substance and Control Act and stated that the Laboratory has demonstrated that the less-than-1-ppm cleanup level prescribed by EPA was met.

2.3.3.2 TA-35

Work on the TA-35 integrated sampling and analysis plan (SAP) continued during this quarter. High-performance team meetings were held October 31, November 19, and December 4, 2001. Discussions during these meetings included the sampling design for the mesa-top subarea, Pratt Canyon subarea, Mortandad Canyon subarea, and the Ten Site Canyon subarea. Final sampling designs were completed, and tables were prepared to document the data gaps for each subarea. The data steward supporting the TA-35 effort produced a compilation of all data available from TA-35 RFI investigations. A disk containing the data was provided to NMED high-performance team members, as requested by NMED personnel to help in the review and development of the integrated SAP.

A white paper was prepared after a discussion at the December high-performance team meeting brought up questions about whether a corrective action should be taken at the TA-35 sanitary lagoons instead of including the lagoons in the integrated SAP. Development of the white paper included generating calculations for "dose" and "risk" contributions from contaminants present in the dry sludge in the lagoons and providing several alternatives that could be adopted in moving forward with the PRSs in the Ten Site Canyon subarea. The TA-35 integrated SAP team also worked on producing maps with the proposed sampling locations resulting from the SAP design. Peer review of the draft of the integrated SAP has been scheduled for January 2002.

2.3.3.3 TA-53

PRS 53-002(a) Interim Action. Analysis of available data from the northern impoundments at TA-53 revealed that the concentrations of the radionuclides and carcinogenic chemicals within the dried sludge and clay liner of both impoundments were greater than the target levels of 15 mrem/yr and 10^{-5} risk, respectively. Therefore, the Industrial Sites Team proposed cleanup activities to reduce the contaminant risk to acceptable levels. During the fourth quarter of FY 2001, an interim action plan was prepared and submitted to DOE-LAAO for review. Revisions to the document were completed, and the document was submitted to NMED on November 28, 2001. The interim action plan summarizes the data from the sampling activities and describes the field activities and methods that the Laboratory proposes to use to remove the dried sludge and clay liner within the boundaries of the northern impoundments, PRS 53-002(a).

Los Alamos Tributary below TA-53. Phase I site characterization activities were completed at the end of FY 2001 in the tributary to Los Alamos Canyon below the impoundments at TA-53, PRSs 53-002(a and b). Analytical data are still pending, and data that have been received are in the verification and validation process.

2.3.4 Townsites Team

Land transfer, private property, Los Alamos community development, and other non-DOE property-related issues were addressed this quarter.

2.3.4.1 TA-0

PRSs 00-028(a,b). The ER Project received and responded to an RSI for the RFI report submitted in 1996 for PRSs 00-028 (a,b). These PRSs include the Los Alamos County Golf Course and North Mesa softball fields, which were excluded in the transfer of the water system to Los Alamos County.

PRS 00-003-99 [00-003, 00-012, and 00-030(i)]. Team members provided clarification to comments from the NMED on the VCA report for the DOE-Los Alamos Area Office (DOE-LAAO) Land Transfer Tract. The comments were not significant enough to warrant an RSI or a notice of deficiency but were considered necessary to complete the administrative record.

PRSs 00-004, 00-010(a,b), 00-027, 00-030(a,b,l,m), and 00-033. A VCA plan for the DP Road Land Transfer Tract is being drafted, with internal reviews beginning in January. This project is currently undergoing a rescheduling exercise to facilitate the DOE's interest in accelerating the transfer of a part of this parcel to Los Alamos County.

PRS 00-019. The VCA completion report for PRS 00-019 (the Central Wastewater Treatment Plant) has been completed, and the report was submitted to the NMED on October 1, 2001.

2.3.4.2 TA-73

PRSs 73-001(a)-99 [73-001(a) and 73-004(d)] and PRS 73-001(b)-99 [73-001(b,c,d)]. A supplemental SAP to support the conceptual design of the airport landfill cap has been submitted to and approved by the NMED. The fieldwork was accomplished this quarter and data are pending.

The 73-1 airport landfill VCM plan is being drafted. Data from the implementation of the supplemental SAP are pending. A fundamental conceptual design has been developed and will be finalized and modeled for inclusion in the VCM plan once data are received.

The interim measure plan for removal of debris on the hillside and in drainages associated with the airport landfill PRSs has been submitted to DOE for review. It is currently on hold pending a cost/risk-versus-benefit evaluation by DOE. Staff members have conducted numerous site tours and briefings to communicate to senior management of NMED, DOE, and the Laboratory the problems, potential solutions, and remaining issues associated with this project. The regulators and the Laboratory/DOE reached a significant compromise as a result of these efforts.

2.3.5 MDA P Closure

During confirmation sampling, additional contamination was detected in an arroyo at the east edge (the east drainage) of MDA P. During the fourth quarter of 2001, 1000 yd^3 of contaminated soil were excavated from this location and staged on-site pending waste characterization analysis. Data from the independent laboratory performing these analyses were delayed because of a sample backlog. As a result, shipment of this waste did not begin until the week of December 18, 2001. Disposal of the waste is expected to be completed next quarter.

Twelve additional confirmation samples were collected from the east drainage excavation area. Analysis of these samples indicates that some additional excavation may be required. Additional field-screening and excavation and disposal of this material will occur next quarter.

Initial work on the final reports for the MDA P and 387 Burn Pad closures and the Burning Ground North VCA began this quarter. Data analysis for these reports is expected to begin in March 2002.

2.4 Groundwater Investigations — Focus Area Leader (Acting): John McCann

Drilling, sampling, database management, and reporting activities continued this quarter. Drilling operations continued at the R-8 regional well location. Problems developed when the drilling string became stuck because of bridging above the drilling depth. Subsequently, the bit and stabilizer assembly were twisted off and remained in the borehole. Recovery operations to retrieve the drilling tools commenced. The tools were not recoverable, and the decision to plug and abandon the R-8 borehole was made in December. A replacement R-8 borehole is scheduled for completion in January 2002.

The status of well sampling and the reporting activity is provided in Table 2.4-1. Sampling was conducted this quarter at wells CdV-R-15-3, R-5, R-7, and R-22.

Work continued on data-management activities, including updating of the field-parameter database.

Work also continued on the R-22, R-25, and R-31 completion reports, and work progressed on the geochemistry report for characterization well R-15, scheduled for release in the second quarter of FY 2002.

Groundwater hydrochemical data for two deep wells are presented in Appendix D. Analytical results are reported for wells CdV-R-15-3 (second sampling round), CdV-R-15-3 (third sampling round), and R-22 (second sampling round). Data reported include field parameters and inorganic, organic, and radiological constituents. Stable isotopes of nitrogen ($^{14}N/^{15}N$) are not available at this time because of analytical laboratory backlog. High-explosive data are not available, and hence were not reported, because of an ongoing focused validation effort by contract laboratories.

Table 2.4-1
Groundwater Investigations Focus Area Well Status

Date Drilled	Well	Watershed	Total Depth (ft)	Number of Screens	Sampling Activity	Reporting Activity
Feb 99	R-25	Water/Valle	1942	9	1st round complete Nov 00 2nd round complete May 01 3rd round complete Aug 01 4th round pushed to FY 03	• Fact sheet complete Dec 01 • Well completion report scheduled Jan 02 • Geochemistry report
Sep 99	R-15	Mortandad	1107	1	1st round complete Feb 00 2nd round complete Oct 00 3rd round complete Feb 01 4th round complete May 01	• Fact Sheet none (before requirement) • Well completion report complete Dec 00 • Geochemistry report scheduled Jan 02
Sep 99	R-9	LA/Pueblo	771	1	1st round complete Feb 00 2nd round complete Sep 00 3rd round complete Feb 01 4th round complete May 01	• Fact sheet none (before requirement) • Well completion report complete Dec 00 • Geochemistry report scheduled Mar 02
Jan 00	R-12	Sandia	886	3	1st round complete Sep 00 2nd round complete Mar 01 3rd round complete Jun 01 4th round complete Sep 01	• Fact sheet none (before requirement) • Well completion report complete Dec 00 • Geochemistry report scheduled May 02
Feb 00	R-31	Ancho	1103	5	1st round complete Dec 00 2nd round complete Sep 01 3rd round pushed to FY 03 4th round pushed to FY 03	• Fact sheet none (before requirement) • Well completion report scheduled Jan 01 • Geochemistry report
Mar 00	R-9i	LA/Pueblo	323	2	1st round complete Sep 00 2nd round complete Feb 01 3rd round complete Jun 01 4th round complete Sep 01	• Fact sheet none (before requirement • Well completion report complete Dec 00 • Geochemistry report scheduled Mar 02
Mar 00	R-19	Pajarito	1903	7	1st round complete Sep 00 2nd round complete Mar 01 3rd round complete July 01 4th round complete Sep 01	• Fact sheet none (before requirement) • Well completion report complete Dec 00 • Geochemistry report scheduled Apr 02

Date Drilled	Well	Watershed	Total Depth (ft)	Number of Screens	Sampling Activity	Reporting Activity
Apr 00	CdV-R-15-3	Water/Valle	1722	6	1st round complete Jan 01 2nd round complete Apr 01 3rd round complete Jul 01 4th round complete Oct 01	• Fact sheet Well completion report • Geochemistry report
Oct 00	R-22	Pajarito	1489	5	1st round complete Mar 01 2nd round complete Jun 01 3rd round complete Nov 01 4th round scheduled Mar 02	• Fact sheet complete Feb 01 • Well completion report scheduled Jan 02 • Geochemistry report
Jan 01	R-7	LA/Pueblo	1097	3	1st round complete May 01 2nd round complete Aug 01 3rd round complete Nov 01 4th round scheduled Apr 02	• Fact sheet complete Dec 01 • Well completion report scheduled Apr 02 • Geochemistry report scheduled Aug 02
May 01	R-5	LA/Pueblo	902	4	1st round complete Nov 01 2nd round scheduled Feb 02 3rd round scheduled May 02 4th round scheduled Aug 02	• Fact sheet complete Oct 01 • Well completion report • Geochemistry report

2.5 Information Management — Focus Area Leader: Stephen Bolivar

2.5.1 Team Activities

2.5.1.1 Information Management

The primary focus of Information Management personnel for the first quarter of FY 2002 was to continue with the business process re-engineering. The major goal for this quarter was to move the data from the old Oracle system to the new standard query language (SQL) system. This was accomplished. Another main focus was to install and test the Sample Management Office (SMO) Phase 1 and SMO interim Phase 2 applications, as well as test several minor associated applications. The two main applications were installed. Users are now testing the applications that initiate a sample collection event and generate field chain-of-custody paperwork and labels; allow for shipping and new chain-of-custody paperwork to the analytical laboratories; electronically check the format of the new electronic data deliverables (EDDs) sent from the analytical laboratories; parse the EDDs into the database; receive and track the results; and receive invoices. The last SMO application, for validation and verification, is being programmed and will be tested next quarter.

All data are now available through the SQL system (some of the data are still legacy data). Efforts continue to synchronize database changes with ESH-18 as part of a data-sharing agreement, ensuring that both organizations maintain identical structures, which facilitates data transfers. Test data have been transferred, and the two groups are now resolving minor issues. The Transition Team has created a second information sheet that shows the re-engineering schedule and current status.

2.5.1.2 Records Management

Records Processing Facility personnel received 9295 record pages this quarter for processing. There are now 219,360 records for query on the Records Processing Facility database. Personnel performed 309 queries and 1034 retrievals for customers during the quarter. A new laboratory implementation requirement (LIR-308-00-02.0, "Laboratory Records Management") was issued July 30, 2001, and will require assistance from records administrative personnel to produce the requested inventory. All Records Processing Facility personnel computers have been converted to the Windows 2000 operating system.

2.5.1.3 Sample Management Office

Personnel from the SMO continue to accept field samples, create the necessary paperwork, contact the appropriate laboratories, ship the samples, and ensure the requested information is received. Most of the new analytical laboratories are submitting analytical data in the new EDD format, and minor bugs are being resolved. The SMO issued 114 field data groups (number of discrete samples) and had 323 customers this quarter. Personnel handled and shipped 2943 containers.

2.5.1.4 Computer Support

The computer support personnel continued to update ER Project computers to the Windows 2000 operating system. This activity will be completed early next quarter. The computer support personnel received 287 service requests this quarter and closed 232 of them. Information has been removed from the open network server in compliance with new security guidelines.

2.5.1.5 Facility for Information Management, Analysis, and Display

Personnel from the Facility for Information Management, Analysis, and Display (FIMAD) continued to maintain the present ER database, as well as the spatial data (such as elevation, orthophotographs, etc.). Efforts to evaluate and clean up all legacy spatial data to ensure that the information is current and correct continue, and an ER Geographical Information System (GIS) Team is now in the process of developing methods to clean legacy data associated with the map themes. FIMAD personnel are in the process of moving all spatial data from the old FIMAD 100 server to the new Redondo and Cerro servers. The Cartographic Laboratory, which is now part of GISLab, instituted a new map-tracking program. For December, they produced 62 new maps and 29 copies of existing maps.

2.6 Analysis and Assessment — Focus Area Leader: Alison Dorries

2.6.1 Team Activities

2.6.1.1 Data Analysis and Assessment Team

Data Quality. Work progressed on the ER Project data validation standard operating procedures (SOPs) as well as other ER Project SOPs. The Data Quality Task Leader performed several peer reviews and assisted in the quality assurance of the information management re-engineering efforts.

The Chemistry Team assisted ER technical teams with the validation and interpretation of data that underwent PCB congener analyses. The team continued to help the technical teams define their data needs and assist the SMO in procuring the appropriate analytical services to meet this need.

Data Stewardship.

Integrated Information Management System Support. The Data Stewardship Team continues to work with the Information Management Team to design and implement the Integrated Information Management System. The system consists in part of software tools intended to ensure consistency and accuracy in data and information management and to allow tracking and traceability of work products such as regulatory reports. In the first quarter of FY 2002, the Data Stewardship Team provided technical support for the development and implementation of three software applications described below.

- The Electronic Data Deliverable (EDD) Checking and Upload Application is designed to handle the electronic data files submitted by subcontractor analytical laboratories. The application must ensure that the file and its contents meet reporting specifications before the data are uploaded to the production tables in the ER Project database (ERDB). The EDD application consists of three distinct levels that are applied sequentially to the electronic file received from the analytical laboratory. The first three levels perform electronic integrity checks, including checks on the file format, adherence to reporting specifications, and completeness. The outcome of each level of file checks is a "pass/fail" result. EDDs that fail any file checker level are rejected and returned to the analytical laboratory for correction. EDDs that pass a file checker level are automatically passed to the next level of file checks. A status table residing on the ERDB is automatically updated by the application to indicate the outcome of each level of checks. In the first quarter of FY 2002, the software coding for the EDD application was completed and tested. The EDD application was implemented to upload several dozen EDD files and create error reports for chemist review.

- The Sample Tracking Application provides software tools that interface with the ERDB Planning Module to track the sample planning and analysis process, from planning and initiating a sampling event, generating field paperwork, ordering sample analytics, checking-in samples at the SMO, shipping samples to analytical laboratories, and completing a sampling event. Phase 1 of the Sample Tracking Application, which has the functionality to plan a sample event and generate the field paperwork (sample collection logs and field chain-of-custody forms), underwent intensive testing by data stewardship personnel in the first quarter of FY 2002. It is anticipated that Phase 1 will be in full production by the end of second quarter.

- The Verification and Validation Application provides software tools that interface with the ERDB to provide tracking of the verification and validation processes for analytical chemistry data. Verification is the comparison of the electronic record received in an EDD file with the hard-copy data package. Validation is the process by which qualifier flags and accompanying reason codes are applied to the data to indicate the data quality. The ER Project validation process is performed according to seven SOPs. In the first quarter of FY 2002, the software requirements for the application were defined and documented by data stewardship and data validation personnel.

Data stewardship personnel continued to provide support to the implementation of the new ERDB by populating and reviewing look-up tables (LUTs) for sample tracking and for validation and verification of chemistry data.

Legacy Data Cleanup and Migration. The migration of analytical chemistry records from the old data structure to the new was completed this quarter. The final migration effort moved 2.48 million records from the Oracle table to the chemical analysis results table in the new SQL database. Migration of legacy

data from the Oracle database has been completed. The Oracle database was shut down in December 2002, and the new SQL database was brought into full production.

Data Stewardship and Reporting.

Data Set Preparation. The Data Stewardship Team prepared 42 electronic data sets for ER Project users in the first quarter of FY 2002.

Data Stewardship for Groundwater Data. The data stewards for the Groundwater Investigations Focus Area are working to transfer data for the existing regional wells to the Borehole Module of the new ERDB. Data categories include, but are not limited to, drilling, well construction, water levels, geology, field and laboratory hydrologic tests, field and analytical data for groundwater and geologic media, geophysics, and geodetic surveys.

In October, work began to capture construction information for well R-13 as close to "real-time" as possible. Work also began on refining the field forms to capture drilling, construction, and development information. Groundwater Investigations Focus Area data stewards continued to work with ESH-18 on the transfer of construction data from the ER Project to ESH-18. Complete construction information for R-9, R-9i, R-12, R-15, and R-19 wells was uploaded to the SQL database.

In December, a decision was made that the field data forms would be frozen in two stages. The first stage would involve forms related to the construction of the wells and the second stage would include well development information. Several new construction-related forms were created: "DRILLING_ASSOCIATED_ACTIVITIES," "WELL_CONSTRUCTION," "SURFACE_COMPLETION," and "FOOTNOTES." Groundwater Investigations Focus Area data stewards also worked to define the values for LUT_LITHOLOGIC_TYPE. The values were defined and uploaded to the SQL database.

Data Validation. The chemistry validation team validated 488 request number/suite combinations during the first quarter. Validation team personnel continue to stay current with incoming data packages. The data authentication team authenticated 799 request number/suite combinations in the first quarter. (Data authentication is the comparison of electronic with hard-copy records).

2.6.1.2 Risk Assessment and Review Team

Human Health Risk. The human health risk-based screening methodology document was finalized and submitted for peer review. The methodology documents the approach used by the ER Project to determine whether potential unacceptable human health risk is present using screening action levels. The methodology may be incorporated into the next revision of the Installation Work Plan for the ER Project.

Discussions continue with the NMED-HWB regarding the adoption of standard exposure scenarios to be used in risk assessments. In the context of these discussions, the NMED-HWB is currently reviewing "Standard Human Health Risk Assessment Scenarios" (Environmental Restoration Project 2000, 66801).

Ecological Risk. Results of initial small-mammal sampling for the small-mammal study in Cañon de Valle were obtained. There was no difference in deer mouse populations between Cañon de Valle and the reference site. There was also no difference in contaminant body burdens between the two sites. A poster summarizing the results from this study was prepared and presented at the Society for Risk Analysis meeting in Seattle, Washington.

The Ecorisk Committee met several times to begin discussions of databases and how different groups can share data. Under discussion was the LA/Pueblo Watershed Ecorisk analysis and the status of the

development of the Biological Resource Management Program. The committee is working on identifying ways in which these two programs can compliment each other, as well as on ways to combine data previously collected for separate purposes. In addition, the ER Project would like to facilitate future data exchange with the Laboratory's Ecology Group (ESH-20) in the manner they are currently able to do with ESH-18.

A presentation to the ER Subcommittee of the Citizens Advisory Board (CAB) on the ER Project approach to ecological risk assessment was given on December 17, 2001. The overall methodology was explained, and the Cañon de Valle small-mammal investigation was cited as an example of site-specific ecological risk assessment.

Ecological Risk Database. The outstanding primary toxicity study evaluations (PTSEs) were summarized, and a list of priority chemicals was drafted for investigation this fiscal year. Team members checked to ensure the Ecorisk database and the PTSE tracking database were in agreement regarding references in the files. All incomplete PTSE Part 1s were updated to the most current version of data entry, including the addition of data for new fields. Data issues identified in the Ecorisk Database (R1.3) and its associated files were resolved and summarized. Some of these data issues required updating the ecological screening level (ESL) calculation spreadsheets to calculate the revised ESLs. In December, an in-depth review of the ESL models and input parameters in the Ecorisk Database (R1.3) and associated files was performed.

Native American Risk. The draft SAP for the TA-74 sampling of soil and biota was finalized and submitted for peer review. Final sampling results for soil and plant data for radionuclides collected from TA-74 were received and provided to San Ildefonso Pueblo. Preliminary plant data for nonradionuclides were also received, and a draft of the sampling results was provided to the pueblo.

A data assessment seminar was organized and presented to members of the Department of Environmental and Cultural Preservation at San Ildefonso Pueblo. The seminar included the five following presentations: An Overview of the Data Process, Data Stewardship, Data Validation, Data Assessment, and Data and Risk Assessment. Additional presentations on risk calculations and general chemistry were requested.

Peer Review Team. Team members coordinated and participated in peer reviews for ER Project documents this quarter, as needed.

2.6.1.3 Strategic Decision Analysis Team

The Strategic Decision Analysis Team spent the first quarter of FY 2002 planning for completion of the Integrated Groundwater Action Plan. The plan will describe the process by which the ER Project will ensure long-term protection of accessible groundwater from cumulative, risk-significant levels of contamination from all ER sites.

2.7 Regulatory Compliance — Focus Area Leader: Dave McInroy

2.7.1 General Information for Regulatory Compliance Focus Area

Monthly meetings with NMED continued this quarter, as well as meetings regarding special topics such as permit modification; the NMED data request; and ongoing RFIs, interim measures, VCAs/VCMs, RFI reports, CMS reports, and responses to RSIs.

The team continues to work on data requests received from the NMED-HWB for the purpose of supporting a corrective action schedule and an annual unit audit table associated with the rewrite of Module VIII of the Laboratory's Hazardous Waste Facility Permit.

In land transfer activities, team members prepared documents supporting the proposed transfer of several land parcels to the County of Los Alamos and the Pueblo of San Ildefonso and supported the conduct of land transfer property boundary surveys by the Corps of Engineers.

Team members performed the following miscellaneous tasks this quarter:

- Participated as members of high-performance teams for the TA-54 MDA H CMS, permit modification/annual unit audit, airport landfill remedial actions, and the 260 outfall.
- Conducted inspections of ER field operations and waste management activities.
- Continued reviewing and revising information in the PRS database. Team members completed write-ups for TA-16, TA-50, and TA-54, including photographs and location maps.

2.7.2 Team Activities

2.7.2.1 Communications and Outreach Team

Outreach Activities. The Communications and Outreach Team participated in and coordinated various meetings this quarter. The public meeting for the first quarter of FY 2002 was held December 5, 2001, in Los Alamos, New Mexico. The topic for the meeting was the Acid Canyon cleanup activities. Staff provided publicity for the meeting and prepared an information sheet on Acid Canyon, as well as a video and posters with photographs of activities before, during, and after the cleanup efforts.

Photodocumentation efforts continued this quarter. Staff photographed approximately 85 PRSs, 55 of which were TA-16 PRSs, for the draft SWMU report. Staff also prepared multiple copies of 12 photographs of PRS 55-009 for use in a future NMED deliverable.

Communications and Outreach staff worked with other ER Project staff and the Laboratory Public Affairs Office to finalize a BMP news release and an article documenting the successes of the VCA at PRS 03-056(c).

Other miscellaneous activities included completing a poster display entitled "Design and Implementation of a Drilling Program Borehole Database" for the 13th annual Technical Information Exchange Conference and completing two 8-ft panel posters for presentation at the Society for Risk Assessment Conference.

Material Disposal Area H Focus Group Sessions. Staff coordinated and prepared handouts for the second and third Focus Group sessions that were held in September and November 2001, respectively. The MDAs Focus Area Leader made presentations on the status of MDA H to the Focus Group. The Focus Group sessions are facilitated by personnel from an independent organization.

Virtual Library Activities. Communications and Outreach staff uploaded several documents to the Virtual Library this quarter. Staff responded to approximately 30 inquiries about Virtual Library information and provided documents, such as work plans RFI reports, etc., when requested. Work continued on establishing the Virtual Library scanning project.

In other Web site activities, all information considered "sensitive" by Laboratory security was removed from the external ER Project Web site. The security measures required disabling the Virtual Library, Cerro Grande fire information, and other general information.

Northern New Mexico Citizens Advisory Board Activities. Staff attended the Northern New Mexico Citizens Advisory Board (CAB) ER Subcommittee meeting and their monthly meetings during the quarter. Staff also prepared and delivered various ER Project documents for the CAB, per their request. Additionally, staff worked with other ER Project personnel to prepare presentations for the ER Subcommittee on ecorisk and prioritization issues as well as a presentation on ER risk assessment for the CAB meeting on December 17, 2001.

Pueblo Interactions. Team members provided technical support to ER Project risk-assessment personnel to prepare presentations on the ER Project's risk assessment process for a meeting with San Ildefonso Pueblo on December 19, 2001. The meeting provided an opportunity for ER Project risk assessment personnel to discuss the data collected in the ER Project and how the data are analyzed and reported.

2.7.2.2 Closeout, Tracking, and Training Team

PRS and Future Deliverables Tracking. Work continued on the effort to update and validate information in the PRS database and to populate a new database "container" (information holder) with current and accurate PRS information.

SWMU Report. Team members continued work on the draft SWMU report. Sections are scheduled to begin the review cycle with team leaders in January. Sections will then go to the Laboratory Classification Group (S-7), Laboratory Counsel, and DOE-LAAO for review. Because of the estimated size of the final report (approximately 5000 pages), sections are being reviewed during development to expedite final review of the product.

2.7.2.3 Regulatory Compliance and Facility Integration Team

Team members continued to provide assistance with regulatory compliance issues for activities within the ER Project this quarter. Staff provided regulatory reviews of documents prepared by the ER Project and participated in peer reviews. Deployed personnel from the Laboratory's Hazardous and Solid Waste Group (ESH-19) and ESH-18 participated in the reviews as subject matter experts regarding hazardous and solid waste issues and water issues, respectively. These efforts included the development and transmittal of an amendment to the MDA P closure plan to NMED on December 20, 2001, and significant technical and regulatory support to the development of Laboratory responses to notice-of-violation findings from the 2001 NMED annual hazardous waste inspection, specifically associated with PRSs at TA-39.

Clean Water Compliance. Staff members completed the final walk-around inspection at the PRS 03-056(c) VCA site. Site restoration is complete and the Facility Management Unit agreed with the final disposition of the site. The site will be inspected and maintained until vegetation has been established on the north slope.

Surface water-related technical support was provided this quarter to the Laboratory's Dynamic Experimentation (DX) Division, including Stormwater Pollution Prevention Plan (SWPPP) reviews, stormwater analytical data reviews, proposals for additional monitoring stations, providing copies of BMP inspection and maintenance records, and the review of annual compliance evaluations. DX Division will

evaluate the option of using an ER contractor to provide future BMP inspections/maintenance at additional DX Division sites.

Team members completed a review of and identified the types of industrial activities and PRSs located above each of the Laboratory gauging stations. The Laboratory's Multi-Sector Storm Water Permit requires the collection of stormwater runoff from gauging stations and the identification of potential sources of pollutants (42 out of 73 were identified).

Staff participated in the following meetings addressing clean water compliance issues this quarter.

- Held Surface Water Assessment Team meeting to discuss items, including the status of the geomorphic mapping project being completed by NMED-DOE-Oversight Bureau in lower Pueblo Canyon; a BMP effectiveness study being conducted at TA-46; a proposal to complete a data quality objective-like process for permit-related stormwater monitoring at Laboratory gauging stations; and Acid Canyon site restoration.

- Provided an update to DOE-LAAO on surface-water issues at the Laboratory. Topics included Multi-Sector Permit coverage, annual site compliance evaluation results, Surface Water Assessment Team accomplishments, the BMP inspection and maintenance program, Acid Canyon inspection response, corrective action issues, and a biological evaluation of the stormwater program. Gene Turner, DOE/LAAO, was selected to be the new point of contact for DOE on surface water issues at the Laboratory.

- Attended a Water Quality Control Commission meeting held in Santa Fe, New Mexico. The commission discussed the approval of total maximum daily loads for several reaches of New Mexico rivers. Personnel initiated a petition to amend 20.6.4 NMAC, "Standards for Interstate and Intrastate Surface Waters," and requested a hearing.

Other clean water compliance activities this quarter included BMP maintenance at TAs-9, -15, -16, -33, -40, -45, -46 and -48 and the modification of stormwater pollution prevention plans for MDA P, the 260 outfall, and the PRS 03-056(c) VCA. The Cerro Grande Fire one-year-after report (LANL 2001, 71342) was completed this quarter

Support continued for the independent risk assessment being conducted by Risk Assessment Corporation.

Waste Management Activities. Team members provided the following support for ER waste management/minimization activities this quarter.

- Facilitated a final shipment of 31 roll-off bins from the interim action at Acid Canyon. A total of 49 roll-off bins containing soil contaminated with low-level radioactive constituents were shipped to the landfill at TA- 54, Area G.

- Coordinated the movement of thirty-two 55-gal. drums and nine B-12 boxes from Acid Canyon to TA-3 for safe storage. The drums and boxes contain fine sediment trapped in the filter assembly of the vacuum system used in Acid Canyon to remove contaminated soil. The containers were moved to a safe, retrievable storage area pending final approval for shipment to TA-54, Area G.

- Coordinated on-site waste management, characterization, transportation, and disposal for waste generated at PRSs 50-009 (MDA C) and 54-006 (MDA H).

- Completed the 2001 Waste Minimization Awareness Plan in accordance with the Laboratory's Hazardous Waste Facility Permit (Module VIII, Section B.1 of the Permit). The plan was submitted to NMED before the permit deadline of December 1, 2001.
- Provided support to the revisions of ER-SOP-01.10, "Waste Characterization," and ER-SOP-1.06, "Management of Environmental Restoration Waste." Both procedures were issued as final documents in December 2001.

Land Transfer. Team members participated in the preparation of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-related documents for the transfer of various parcels of Laboratory property from DOE to the County of Los Alamos and the Bureau of Indian Affairs (in trust for the Pueblo of San Ildefonso). Transfer of the Manhattan Monument, Site 22, the White Rock "Y," the eastern portion of the Los Alamos Area Office parcel, and portions of the White Rock and TA-74 tracts is anticipated to occur during the third and fourth quarters of FY 2002.

Team members continue to participate as members of the Laboratory's Land Transfer Team and the DOE's Land Transfer Project Office Team. These teams are responsible for the activities leading up to the final transfer of Laboratory property.

Long-Term Stewardship. Team members continued participation in the DOE-Albuquerque Operations Office's Long-Term Stewardship Working Group and anticipate the distribution of a draft of the long-term environmental stewardship plan later in FY 2002.

2.7.2.4 Special Projects and Deployed Generalist Team

Initial information to support approximately 66 PRSs as candidates for NFA was gathered. Five of these are candidates for submittal to NMED as supplemental information in support of previous permit modification requests; 19 are candidates for a future Class III permit modification request; 26 are candidates that may be included in a future petition for Class III permit modification; 1 is a candidate for NFA from DOE; and 15 are candidates for radiological property release reports.

The team has completed documenting the supplemental information gathered in support of NFA for PRS 55-009 and has it ready for the next submittal to NMED.

In document review activities, authorized derivative classifiers from the team continued to provide classification reviews of ER Project documents, as needed.

Natural Resource Management Activities. This team member represents the East Jemez Resource Council for the ER Project. The Pajarito Plateau Watershed Partnership, which has now become affiliated with the council, will set erosion control as a key focus of its attention. The 319 grant still awaits an administrative body to manage it. A draft Watershed Restoration Strategy from the Pajarito Plateau Watershed Partnership is available, and the group continues to work on a watershed management plan.

The Natural Resource Trustees continue to discuss future interaction and funding options.

As the authorized National Environmental Policy Act (NEPA), Cultural, Biological Resources reviewer for the ER Project, the team representative completed screening checklists/reviews for well R-14, and MDA U and B RFI characterization and supplemental sampling for nature and extent at TA- 21.

The team member is the ER Project point of contact for the Interagency Wildfire Management Team working to mitigate wildfire on Laboratory property. The continuing efforts of this team focused on current

fire hazard, interagency mitigation plans, and the proposed Laboratory-wide tree-thinning projects. It is the team member's responsibility to address any concerns or impact to ER activity.

The team member began to compile references for the wetlands working group on issues related to the management, study, and mitigation of Laboratory wetlands. This effort is consistent with the institution's goals of compliance, BMPs, and long-term stewardship and ER Project's interest in wetland/contaminant issues.

This team member represents ER at the PM-1 Site Planning group meetings and is working to establish contacts and enhance siting notification to ER in an effort to reduce scheduling problems with cleanup activity.

Support to Focus Areas. Personnel from the Special Projects and Deployed Generalist Team are deployed to the operational focus areas to provide support regarding regulatory issues. Staff provided general regulatory compliance assistance this quarter, such as reviewing documents; participating in peer reviews for operational focus area documents; and attending operational focus area meetings, high-performance team meetings, and meetings with DOE and NMED. The deployed members of the team also assisted with the following tasks in the operational focus areas.

Canyons Investigations Activities. Staff reviewed three excavation permit requests for the Canyons Focus Area this quarter. Sampling notifications were completed for surface, groundwater, and spring sampling in Los Alamos and Pueblo Canyons. A sampling notification was also submitted for confirmation sampling in the South Fork of Acid Canyon as part of the interim action completed during the quarter.

The staff member representing the Canyons Investigations Focus Area performed duties as waste management coordinator for low-level radioactive waste generated from Acid Canyon sediment removal.

Groundwater Investigations Activities. Staff provided regulatory support for the discharge of purge water from well R-13. Sampling notifications were completed for drilling wells R-8 and R-13 and for quarterly sampling at wells R-5, R-7, R-19, and R-22 and a waste characterization strategy form was prepared for well R-14. Personnel also provided support for shipping one 55-gal. drum of petroleum-contaminated base course from well R-8. Support was also provided for shipping one 55-gal. drum of petroleum-contaminated base course and one 55-gal. drum petroleum-contaminated sorbents from well CdV-R-37-2.

MDA Activities. Staff continued to provide support for the draft interim measure report for PRS 21-018(a)-99, the NTISV Hot Demonstration at MDA V, and updated NMED staff regarding the tentative sampling schedule for the glass product once it has cooled to near ambient temperatures. Based on recent thermal modeling results, the glass product may not reach ambient temperatures until 2004. Core samples of the product must be obtained using dry drilling techniques, and the sample quality and quantity could be compromised if the core of the product is too hot.

In accordance with the August 14, 2001, Record of Communication documenting the proposed approach for the implementation of the VCM at PRS 21-011(k), the Laboratory provided a schedule of activities to NMED. The schedule included bench-scale testing, additional waste characterization sampling to confirm or deny presence of VOCs, VCM plan preparation and submittal, and VCM implementation during the spring and summer of FY 2002. The team member revised the SAP for the collection of tuff and sediment samples for bench-scale testing at an off-site laboratory. NMED concurred with the proposed sampling approach, locations, and bench-scale testing criteria, and the samples were collected in mid-December 2001.

Staff assisted with numerous other MDA projects this quarter, including the following:

- Continued the review and revision of the draft VCM report proposing NFA for PRS 21-027(d)-99, the NTISV cold demonstration.
- Assisted with the resolution of final comments received from NMED on the Phase II RFI report for DP Tank Farm (PRS 21-029) and preparation and negotiation of the corresponding RSI response. The RSI response and revised RFI report text were submitted to NMED-HWB on December 13, 2001.
- Reviewed all previous RFI investigation results for PRSs 50-011(a) and 50-004(a)-00 and worked with TA-50 staff and contractors and NMED personnel to optimize sample locations for geotechnical and waste characterization activities conducted within the PRS boundaries in anticipation of the construction of a new pump house and influent tank vault at TA-50.
- Continued review of RFI data for MDA C to determine if nature and extent have been determined, and if not, what information is required to complete the RFI.
- Assisted with the resolution of comments received from NMED on the VCA completion report for PRS 54-007(c)-99 and began the preparation and negotiation of the corresponding RSI response and necessary report revisions. In accordance with an approved 30-day extension request, the RSI response and revised report will be delivered to NMED by February 9, 2002.
- Assisted with the resolution of final comments received from NMED on the MDA H RFI report and the preparation and negotiation of the corresponding RSI response. The RSI response and revised RFI report text were submitted to NMED-HWB on December 20, 2001.
- Continued to participate in/facilitate the MDA/TA-54 High-Performance Team meetings with NMED-HWB and DOE representatives on the preparation of the CMS report for MDA H and the public involvement plan; on NMED comments on the RFI report for MDA H, supplemental RFI investigation, and the RFI addendum; and on the planning of future public meetings for the CMS of MDA H.
- After receipt of the approval letter for the MDA H CMS plan from NMED in December 2001, the team member negotiated the format and content for the initial MDA H CMS progress report that will be submitted by the end of January 2002 in accordance with Module VIII of the Laboratory's Hazardous Waste Facility Permit.
- Continued regulatory support for reports documenting the final cleanup of several PRSs at TA-21, TA-51, and TA-54 West.
- Reviewed four excavation permit requests for infrastructure construction projects planned at TA-50 and TA-3.

The deployed generalist provided additional support to the focus area by preparing, reviewing, and/or resolving peer review comments received on various sampling notifications, VCA completion reports, RFI reports, SAPs, the CMS report for MDA H, and other submittals. Sampling notifications were prepared for ER activities at MDA H at TA-54, for supplemental RFI sampling at MDA B (PRS 21-015) and MDA U [PRS 21-017(a)-99], and for geotechnical and waste characterization activities being conducted within the boundaries of PRSs 50-011(a) and 50-004(a)-00 at TA-50.

RCRA Corrective Actions Activities. The deployed generalist reviewed drawings and maps submitted with an excavation permit for a concrete pad to support a transformer and backup generator for the steam plant, TA-3-22. The team member met with Johnson Controls Northern New Mexico and Laboratory utility staff to discuss the location of the proposed excavation, which overlaps the entire boundary of PRS 03-047(d). PRS 03-047(d) is the former location of a container storage area that underwent a VCA in 1995. Confirmation sampling results showed several metals present above Laboratory background levels and low concentrations of acetone (0.05 ppm) and PCBs (1.19 ppm) and extremely low concentrations of a few semivolatile organic compounds (SVOCs), most likely from the asphalt pad. Johnson Controls Northern New Mexico will collect soil samples before excavation and will collect six confirmation samples from within the excavated area. The samples will be analyzed for target-analyte-list metals, PCBs, VOCs and SVOCs.

3.0 REFERENCES

Environmental Restoration Project, September 2000, " Standard Human Health Risk Assessment Scenarios," Revision 2.0, Los Alamos National Laboratory report LA-UR-00-4084, Los Alamos, New Mexico. (Environmental Restoration Project 2000, 66801)

LANL (Los Alamos National Laboratory), November 15, 2001, " Cerro Grande Fire One Year After: An Update on ER Activities to Reduce the Potential Movement of Contamination at Potential Release Sites," Los Alamos National Laboratory report LA-UR-01-4122, Los Alamos, New Mexico. (LANL 2001, 71342)

Appendix A

DP Canyon Monthly Inspection Reports
First Quarter, Fiscal Year 2002

DP Canyon Inspection Report
October 30, 2001

Introduction: Regular inspections are conducted to assess the status of two petroleum hydrocarbon seeps in DP Canyon. These seeps, which are downgradient from Potential Release Site 21-029 (DP Tank Farm), are referred to as the upstream and downstream seep areas (Figure 1). Inspections are generally conducted on a monthly basis, except during wetter months when they are conducted on a bimonthly basis. The results of these inspections will help document any changes in the petroleum hydrocarbon seep areas in relation to seasonal changes and recent precipitation.

Date: October 30, 2001
Time: 11:00 a.m.
Personnel: Becky Coel-Roback and Dan Holmquist
Weather: 65° F, partly cloudy, breezy
Precipitation: 0.18 inches, approximate total since the last inspection (source: Los Alamos National Laboratory Weather Machine).

Presence of standing or running water: At the time of the inspection, there was very little flow in the drainage, but there was standing water in most pools. There was a strong odor and a clear, elastic substance on the water surface that appeared to be due to the decomposing vegetation. Neither the odor nor the sheen appeared to be due to petroleum hydrocarbons.

Location and intensity of odors, staining, or sheens (see Figure 1 for locations):

	Air	Water	Soil/Sediment
Upstream Location	No petroleum hydrocarbon odor in air; pronounced odor of decaying leaves	Clear, elastic substance on water, probably because of decaying leaves	Slight petroleum hydrocarbon odor from disturbed sediments on the *north* bank (opposite the seep)
Downstream Location	No petroleum hydrocarbon odor in air; pronounced odor of decaying leaves	No standing water	No sheen or staining, no odor from disturbed sediments

Photographs: The following photographs were taken during the site visit (see Figure 1 for locations).

Location 1, canyon head. Culverts at the head of DP Canyon, showing very little water flow

Location 2, upstream location. Small pool of standing water

Location 3, upstream location. During the October 30 inspection, both the odor in the air and the sheen on standing water appeared to be from decaying vegetation. A slight petroleum hydrocarbon odor was noted from disturbed sediments.

Location 4, upstream location. Stream channel, looking downstream from sample location 21-11136

Location 5, downstream location. There was no standing water in this pool during the October 30 inspection.

Location 6, downstream location. There was no standing water in this pool during the October 30 inspection; no petroleum hydrocarbon odor was detected from disturbed sediments.

Location 7, downstream location. Stream channel, looking downstream from sample location 21-11176

DP Canyon Inspection Report
November 28, 2001

Introduction: Regular inspections are conducted to assess the status of two petroleum hydrocarbon seeps in DP Canyon. These seeps, which are downgradient from Potential Release Site 21-029 (DP Tank Farm), are referred to as the upstream and downstream seep areas (Figure 1). Inspections are generally conducted on a monthly basis, except during wetter months when they are conducted on a bimonthly basis. The results of these inspections will help document any changes in the petroleum hydrocarbon seep areas in relation to seasonal changes and recent precipitation.

Date: November 28, 2001
Time: 3:00 p.m.
Personnel: Becky Coel-Roback and Dan Holmquist
Weather: 28° F, sunny
Precipitation: 0.13 inches, approximate total since last inspection (source: Los Alamos National Laboratory Weather Machine).

Presence of standing or running water: At the time of the inspection, there was significant flow in the drainage because of recent snowfall. Water was also flowing from the north side of the drainage, immediately upstream of the downstream seep location.

Location and intensity of odors, staining, or sheens (see Figure 1 for locations):

	Air	Water	Soil/Sediment
Upstream Location	No petroleum hydrocarbon odor in air	Sheen on water in the immediate area of the seep	Slight petroleum hydrocarbon odor and sheen in disturbed midchannel sediments, sheen washes out in water current
Downstream Location	No petroleum hydrocarbon odor in air	No sheen on water	No sheen or staining, no odor from disturbed sediments

Photographs: The following photographs were taken during the site visit (see Figure 1 for locations).

Location 1, canyon head. Culverts at the head of DP Canyon, showing significant water flow

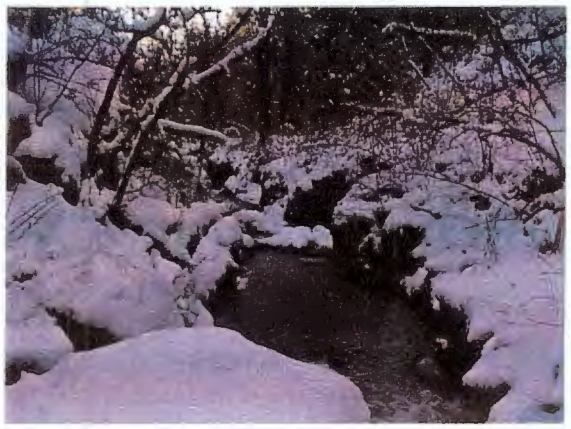
Location 2, upstream location. Small pool of standing water

Location 3, upstream location. During the November 28 inspection, no sheen was observed on water in the immediate vicinity of the upstream seep. A petroleum hydrocarbon odor and sheen were noted in disturbed sediments.

Location 4, upstream location. Stream channel, looking downstream from sample location 21-11136

Location 5, downstream location. No sheen was noted on the water in this pool during the November 28 inspection.

Location 6, downstream location. This pool was frozen over. No petroleum hydrocarbon odor was detected from disturbed sediments, and no petroleum hydrocarbon odor was noted in the air.



Location 7, downstream location. Stream channel, looking downstream from sample location 21-11176

DP Canyon Inspection Report
December 21, 2001

Introduction: Regular inspections are conducted to assess the status of two petroleum hydrocarbon seeps in DP Canyon. These seeps, which are downgradient from Potential Release Site 21-029 (DP Tank Farm), are referred to as the upstream and downstream seep areas (Figure 1). Inspections are generally conducted on a monthly basis, except during wetter months when they are conducted on a bimonthly basis. The results of these inspections will help document any changes in the petroleum hydrocarbon seep areas in relation to seasonal changes and recent precipitation.

Date: December 21, 2001
Time: 1:40 p.m.
Personnel: Becky Coel-Roback and Robert Roback
Weather: 40°F, partly sunny, windy
Precipitation: 0.15 inches, approximate total since last inspection (source: Los Alamos National Laboratory Weather Machine).

Presence of standing or running water: At the time of the inspection, there was no water flow in the drainage due to freezing conditions. All standing water was frozen, and there were no inputs into the drainage from either the culverts or the north bank at the downstream seep location.

Location and intensity of odors, staining, or sheen (see Figure 1 for locations):

	Air	Water	Soil/Sediment
Upstream Location	Faint and very discontinuous petroleum hydrocarbon odors	No petroleum hydrocarbon odors or sheen	Slight petroleum hydrocarbon odor from disturbed midchannel sediments.
Downstream Location	No petroleum hydrocarbon odors	No petroleum hydrocarbon odors or sheen	No petroleum hydrocarbon odors, staining, or sheen

Photographs: The following photographs were taken during the site visit (see Figure 1 for locations).

Location 1, canyon head. Culverts at the head of DP Canyon, showing no water flow because of freezing conditions

Location 2, upstream location. All standing water in the drainage was frozen.

Location 3, upstream location. During the December 21 inspection, faint and discontinuous petroleum hydrocarbon odors were noted in air. There was noticeable odor from disturbed sediments.

Location 4, upstream location. Stream channel, looking downstream from sample location 21-11136

Location 5, downstream location. All water was frozen.

Location 6, downstream location. No sheen, staining, or odors were detected in any media in the downstream location during the December 21 inspection.

Location 7, downstream location. Stream channel in the area of sample location 21-11176, looking downstream

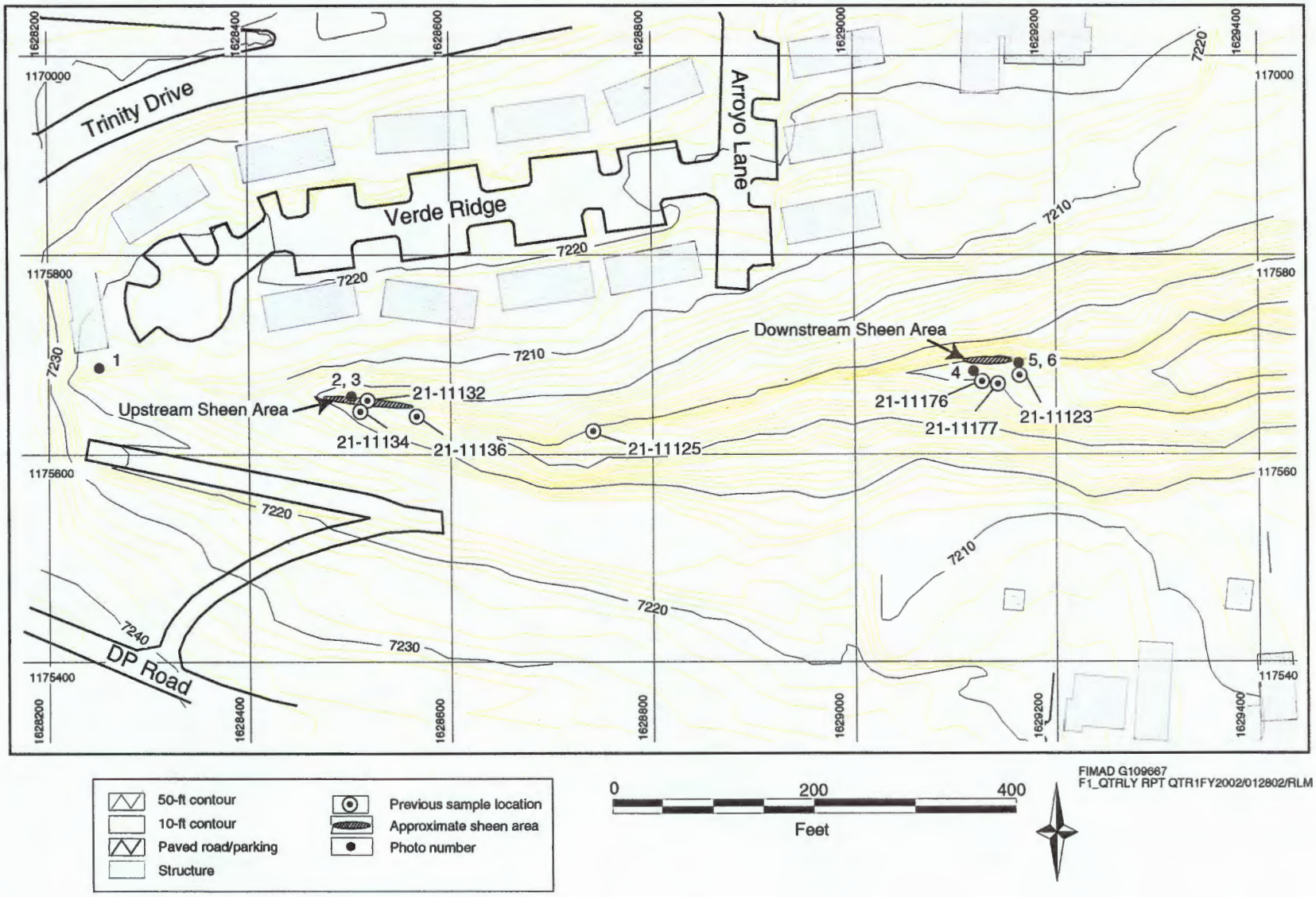


Figure 1. DP Tank Farm photo locations, sheen areas, and sampling locations

Appendix B

Quarterly Moisture-Monitoring Report
First Quarter, Fiscal Year 2002
Technical Area 49, Material Disposal Area AB

Quarterly Moisture-Monitoring Report

First Quarter, Fiscal Year 2002

Technical Area 49

Material Disposal Area AB

MDA Focus Area
Environmental Restoration Project
Los Alamos National Laboratory

February 2002

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1.0 INTRODUCTION

This report documents the results of moisture monitoring at Material Disposal Area (MDA) AB, Technical Area (TA) 49, at Los Alamos National Laboratory (the Laboratory) during the first quarter of Fiscal Year (FY) 2002. The moisture-monitoring system was installed during March 2000 to determine whether or not the evapotranspirative cover at MDA AB was maintaining or reducing subsurface moisture. It is anticipated that the cover material will behave similarly to native undisturbed areas and restore the semiarid conditions at the site. Moisture monitoring was performed in accordance with ER-SOP-7.05, Rev. 1, "Subsurface Moisture Measurements Using a Neutron Probe."

The moisture-monitoring project utilizes three neutron access holes (49-10046, 49-10047, and 49-10048), eight boreholes (TH-1, TH-2, TH-3, TH-4, TH-5, 2A-O, 2A-Y, and 2B-Y), four time domain reflectometry (TDR) probes (TDR1, TDR2, TDR3, and TDR4), and a rain gauge to evaluate changes in moisture beneath the cover and the undisturbed areas near the cover (Figure 1). The eight boreholes are 4 in. in diameter and have no casing, and the three access holes have a 2-in. aluminum casing that extends to the bottom of the hole. Adjacent to each of two access holes (49-10046 and 49-10048) are two TDR arrays; they consist of a shallow TDR probe positioned horizontally just beneath the surface soil (approximately 6 in.) and deeper TDR probes positioned vertically beneath the cover materials at 6 ft (TDR1) and 10 ft (TDR3). A rain gauge is located at the surface of the cover near access hole 49-10046. Figure 1 gives locations of access holes, boreholes, TDR probes, the rain gauge, the cover, and the silt fence. Table 1 gives the depths of the TDR probes.

Moisture monitoring at MDA AB was completed for the last month (September) of the fourth quarter of FY 2001 and for the first two months (October and November) of the first quarter of FY 2002. Because of the Laboratory shutdown for the holidays during December, the final month of monitoring was completed on January 7, 2002, and will be reported in the second-quarter report. This report will include a discussion of moisture trends over time, a comparison of moisture results from the neutron probes and the TDR probes, and a discussion of the relationship between precipitation and moisture content.

2.0 MOISTURE-MONITORING EVENT

2.1 Neutron Logging

During the first quarter of FY 2002, neutron-logging events occurred at the end of September, October, and November. Neutron logging scheduled for the last week of December was postponed until the second week of January; the results will be published in the second-quarter report for FY 2002. Logging was performed with a dedicated CPN 503DR probe at all access holes and boreholes. The neutron counts from each of the 11 monitoring holes were recorded into a spreadsheet, and a corresponding volumetric moisture content was calculated for each. Plots of volumetric moisture content for each sampling period and all of the holes are shown in Appendix A.

2.2 TDR and Precipitation Measurements

TDR measurements and precipitation quantities were collected twice a day through November, except from November 23 to December 2 when data were lost because the wires from the TDR instruments to the Bruel & Kjaer analyzer were severed (most likely by rodents). Data were recorded to a Campbell Scientific datalogger, which was programmed to record a timestamp, temperature, TDR raw frequencies, and precipitation (in.). The program converts raw frequency to volumetric moisture content and then records the data (both raw and converted) to a *.dat file. Figures 2 and 3 display moisture measurements

and precipitation from April 2000 through November 2001. The cumulative precipitation was calculated from the on-site rain gauge from August 2000 to April 30, 2001. On May 1, 2001, it became apparent that the rain gauge had become clogged with debris, so from May 1 to the end of November, 2001, precipitation data were obtained from the Laboratory TA-49 weather station.

3.0 MOISTURE-MONITORING RESULTS AND DATA ANALYSIS

3.1 Introduction

During the first quarter of FY 2002, most neutron access holes and boreholes have shown either a slight decrease or no change in volumetric moisture in the first 5 ft, an interval of unconsolidated materials and/or the soil tuff interface. Trend plots of time versus moisture content were created for specific depth intervals (Appendix B). These plots exhibit the impacts of high-intensity rainstorms and snowmelt. They also show the apparent effects of evapotranspiration, which accounts for the reduction of near-surface soil moisture.

Table 1
TDR Array Descriptions

TDR Number	Array Type	Depth (ft)
TDR1	Vertical, within soil overlaying Bandelier Tuff	6
TDR2	Horizontal, at bottom of top-soil	0.5
TDR3	Vertical, within El Cajete pumice formation	10
TDR4	Horizontal, at bottom of top-soil	0.5

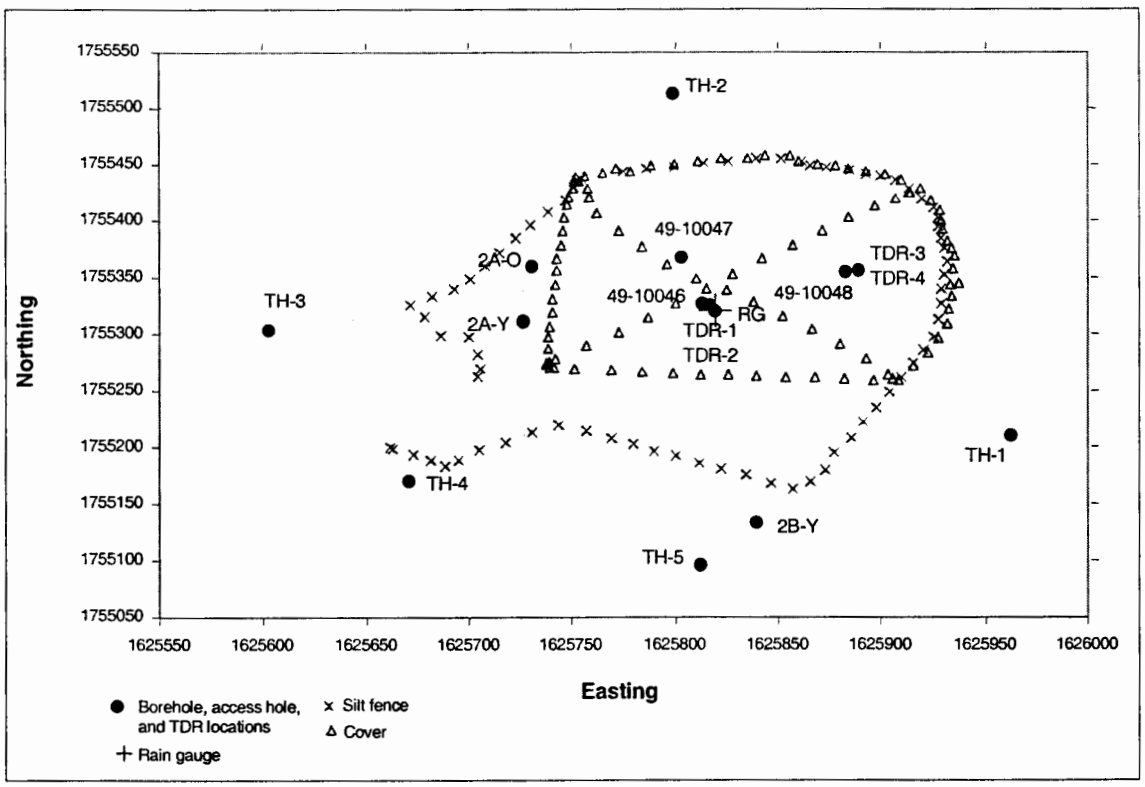

Figure 1. Location of instrumentation, access holes, and boreholes on XY plane at TA-49

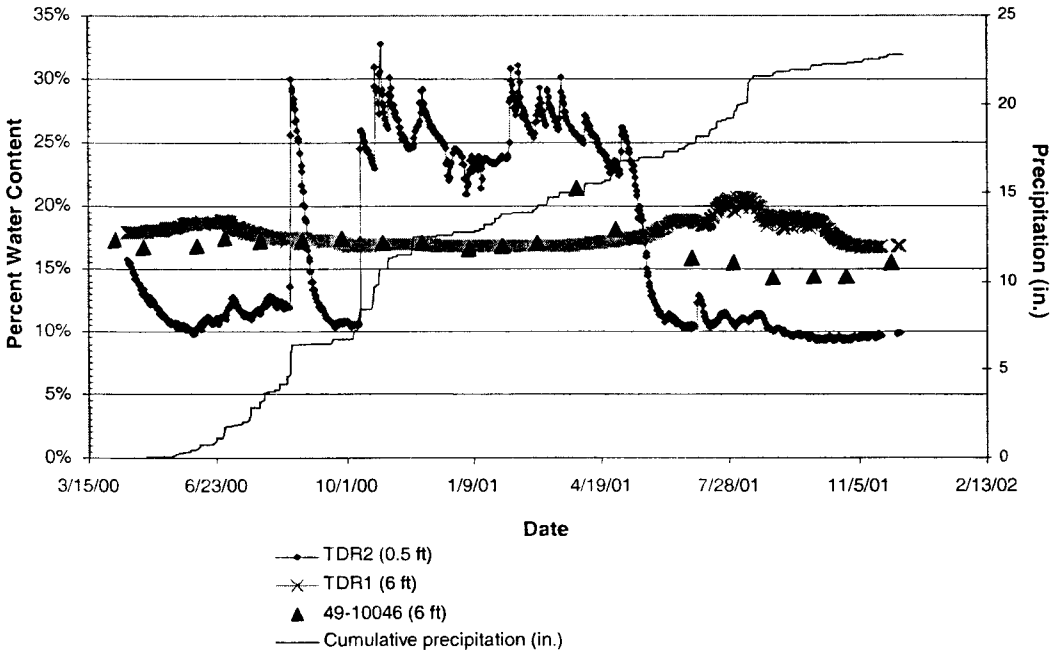

Figure 2. **TDR measurements compared with neutron measurements at access hole 49-10046, which is in close proximity and at the same corresponding depths as TDR1**

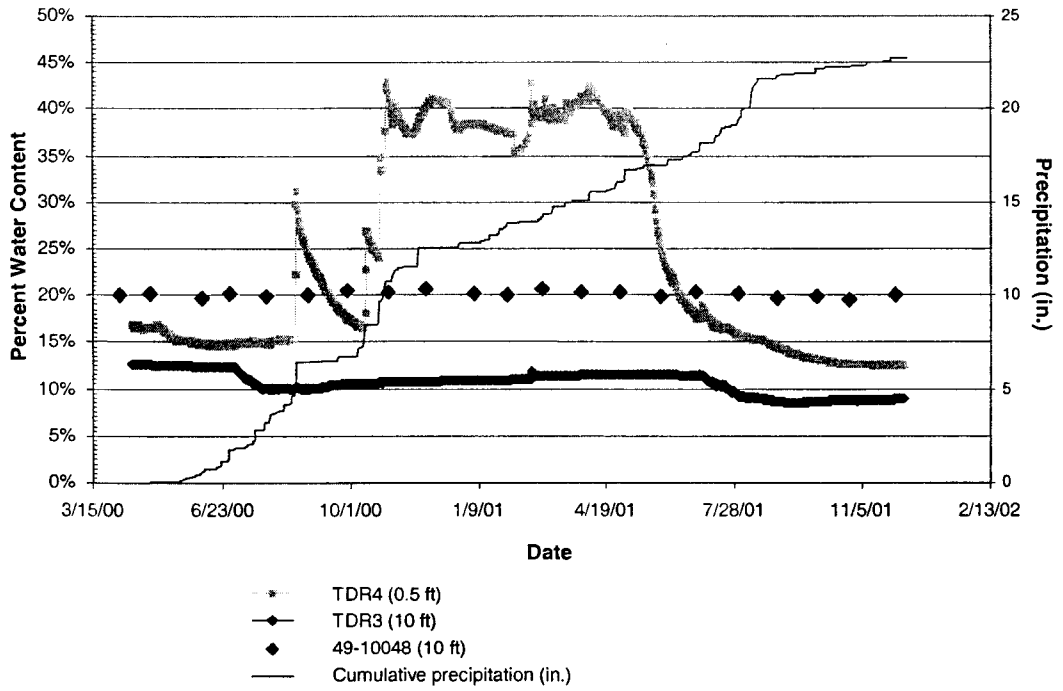

Figure 3. **TDR measurements compared with neutron measurements at access hole 49-10048, which is in close proximity and at the same corresponding depth as TDR3**

3.2 Correlation between TDR Measurements and Precipitation Events

From September to December 2001, Los Alamos received little precipitation (accumulations from 0.1 in. to 0.23 in.). From the middle of November to the beginning of December, all the precipitation received was in the form of snow. The TDR probes do not respond strongly to snow accumulation until the spring, when temperatures increase and melting occurs. During the last three months, the shallow and deep TDRs have remained steady with no meaningful increases or decreases. The TDR behavior is consistent with what is expected during a dry fall and winter months with cold temperatures and average snowfall.

3.3 TDR and Neutron Comparisons

The moisture-monitoring system is producing similar results from the TDR arrays and the neutron logging. Figures 2 and 3 display the deep TDR data associated with access holes 49-10046 and 49-10048; neutron probe data from the same depth are also shown. The TDR probes are quickly able to detect moisture increases in the subsurface, whereas the neutron probe captures the long-term effect of the same events. Since June 2001, the neutron probe data at access hole 49-10046 has been showing a 5% lower moisture content than the TDR probe; however, by November 2001 the two instruments are within 1% of each other (Figure 2). At access hole 49-10048, the TDR and neutron probe measurements differed by approximately 13%, with the neutron probe reading lower than the TDR probe (Figure 3). Neither the TDR nor neutron probe measurements have shown much moisture change during the last quarter. The difference between the TDR and neutron probe measurements in 49-10048 is due to the placement of the TDR probe in the El Cajete pumice. The neutron probe is calibrated for materials with densities closer to crushed tuff; the El Cajete pumice has a much lower bulk density. Therefore, the difference is an artifact of the neutron probe calibration. The TDR probe is accurate for all densities of material found at the site and, thus, returns more realistic moisture content values for the El Cajete pumice.

3.4 Student T-test of Neutron Data

A student t-test analysis was performed to track trends in moisture over time for each of the boreholes and neutron access holes. The student t-test evaluates the significance of an apparent trend based on a selected confidence interval. For purposes of this analysis, a 95% confidence interval was selected.

As of December 2001, 21 months of data events were available for statistical analysis. Table 2 presents the results of the student t-test analyses for each of the boreholes and neutron access holes. The trending analysis results show stable moisture levels or a decreasing moisture trend of less than 0.5% volumetric moisture per year in most monitoring holes. Moisture levels have increased in borehole TH-2 in the near-surface area (from 1 ft to 5 ft) and in borehole 2B-Y at deeper depths (from 6 ft to 20 ft). Even though the trend indicates an increase in moisture content in the 6-ft to 20-ft region of borehole 2B-Y, it is important to note that, since April 2001, the region has seen a decrease in volumetric moisture. Because there are now 21 months of data available for the trending analysis, seasonal fluctuations in moisture no longer bias the trending analysis results as they did earlier.

Table 2
Results of the Student T-Test Analysis, Based on a 95% Confidence Interval

Borehole/Neutron Access Hole Number	Moisture-Trending Results
TH-1	Analysis shows a decreasing moisture trend from 11 ft to 20 ft, 26 ft to 40 ft, 46 ft to 55 ft, 61 ft to 75 ft, and 106 ft to 110 ft
TH-2	Analysis shows an increasing moisture trend from 1 ft to 5 ft and a decreasing moisture trend from 31 ft to 35 ft, 46 ft to 50 ft, 56 ft to 70 ft, 76 ft to 80 ft, and 86 ft to 90 ft
TH-3	Analysis shows a decreasing moisture trend from 6 ft to 10 ft, 31 ft to 35 ft, 51 ft to 65 ft, 71 ft to 75 ft, and 91 ft to 105 ft
TH-4	Analysis shows a decreasing moisture trend from 66 ft to 70 ft
TH-5	Analysis shows a decreasing moisture trend from 6 ft to 35 ft, 45 ft to 60 ft, 71 ft to 75 ft, 81 ft to 95 ft, and 101 ft to 105 ft
2B-Y	Analysis shows an increasing moisture trend from 6 ft to 20 ft
2A-Y	Analysis shows a decreasing moisture trend from 6 ft to 10 ft
2A-O	Analysis shows a decreasing moisture trend from 16 ft to 25 ft
49-10046	Analysis shows a decreasing moisture trend from 7 ft to 13 ft
49-10047	Analysis shows a decreasing moisture trend from 9 ft to 12 ft
49-10048	Analysis shows a decreasing moisture trend from 5 to 10 ft

4.0 CONCLUSIONS

First Quarter

During the first quarter of FY 2002, moisture content remained constant or decreased slightly below the unconsolidated surface material across the site. This was expected because the unseasonably warm fall and limited rainfall continued to promote evaporation and plant transpiration, which limits infiltration below the rooting depth and near-surface environment, and because the precipitation received during late November was in the form of snow. Both shallow and deep TDR probes showed virtually no fluctuations in moisture from September to December. Because the TDR probe measurements are recorded every 12 hours, relatively short moisture content fluctuations can be measured in the near surface. TDR measurements at depth have confirmed that these impulses only penetrate the near surface. Both the neutron log and TDR probe data continue to indicate that the evapotranspirative cover at MDA AB is maintaining the local moisture content at levels comparable to nearby undisturbed areas.

5.0 RECOMMENDATIONS

MDA G at TA-54 is similar to MDA AB. Routine moisture monitoring has been performed at MDA G for more than 10 years. The results have indicated that very little, if any, detectable changes in moisture content occur below the near-surface environment and that any significant changes or trends are effectively captured by bimonthly monitoring. The moisture-monitoring results for the past 21 months at MDA AB have been consistent with those from MDA G. Measurements of the moisture content within the Bandelier Tuff at both mesa-top sites indicate that seasonal precipitation results in little, if any, deep infiltration. Therefore, it is recommended that moisture monitoring of all boreholes and neutron access holes be reduced from monthly to bimonthly. This will be sufficient to capture any potential long-term variability in moisture content below the near-surface environment. The current frequency of TDR measurements will continue to monitor the performance of the cover materials.

Appendix A

Neutron Moisture Measurements

APPENDIX A NEUTRON MOISTURE MEASUREMENTS

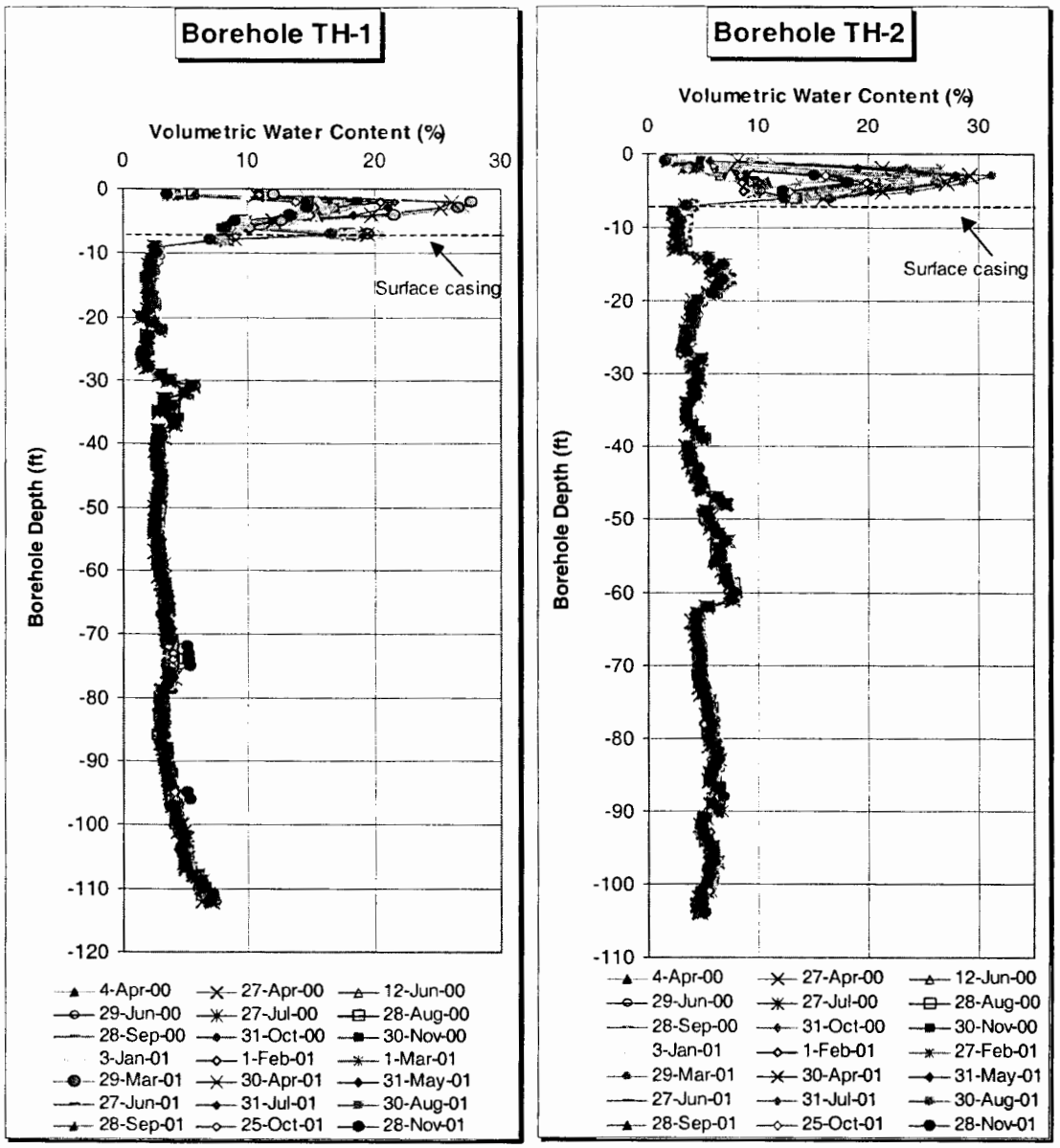

Figure A-1. Neutron probe moisture measurements for boreholes TH-1 and TH-2

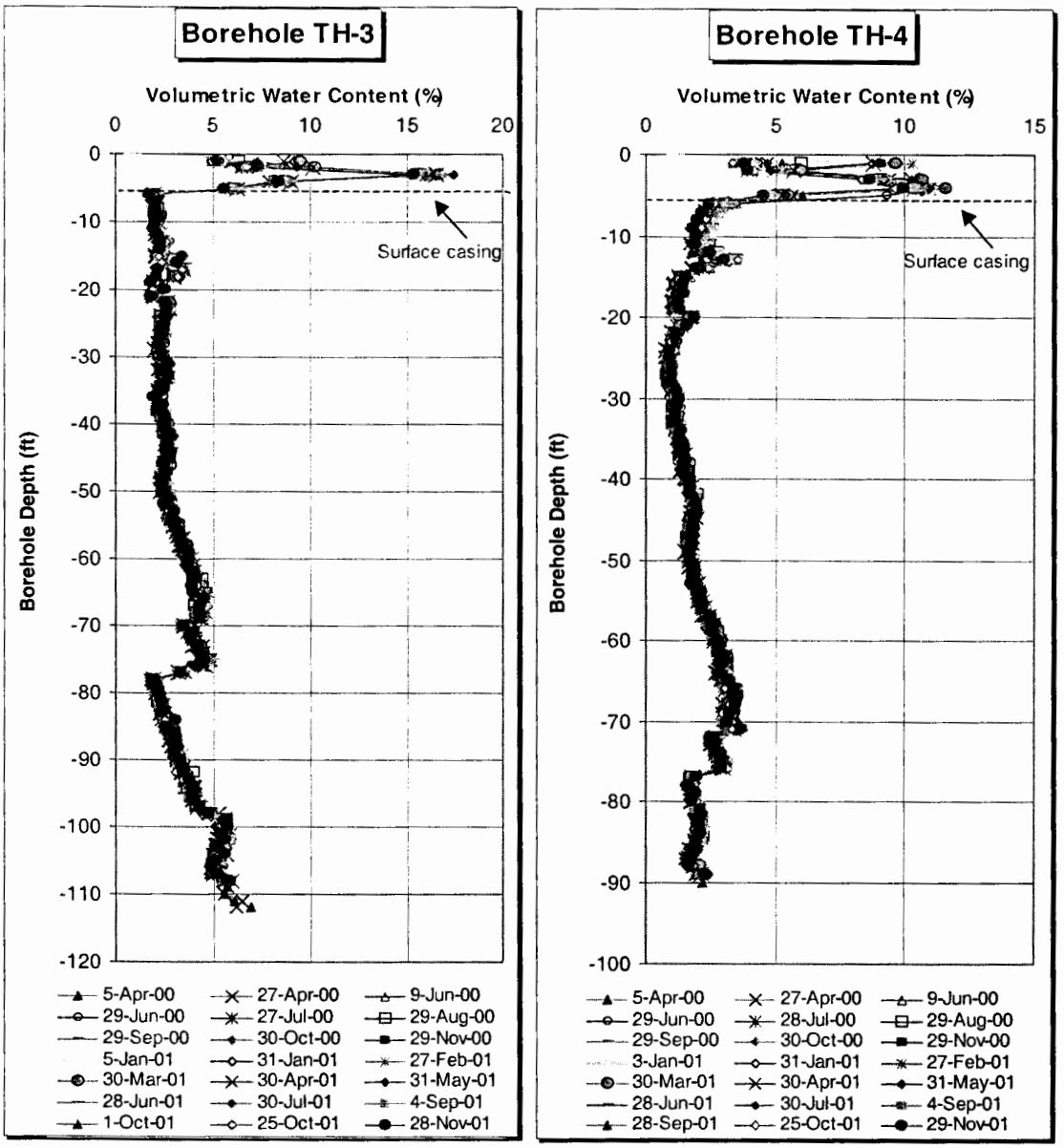

Figure A-2. Neutron probe moisture measurements for boreholes TH-3 and TH-4

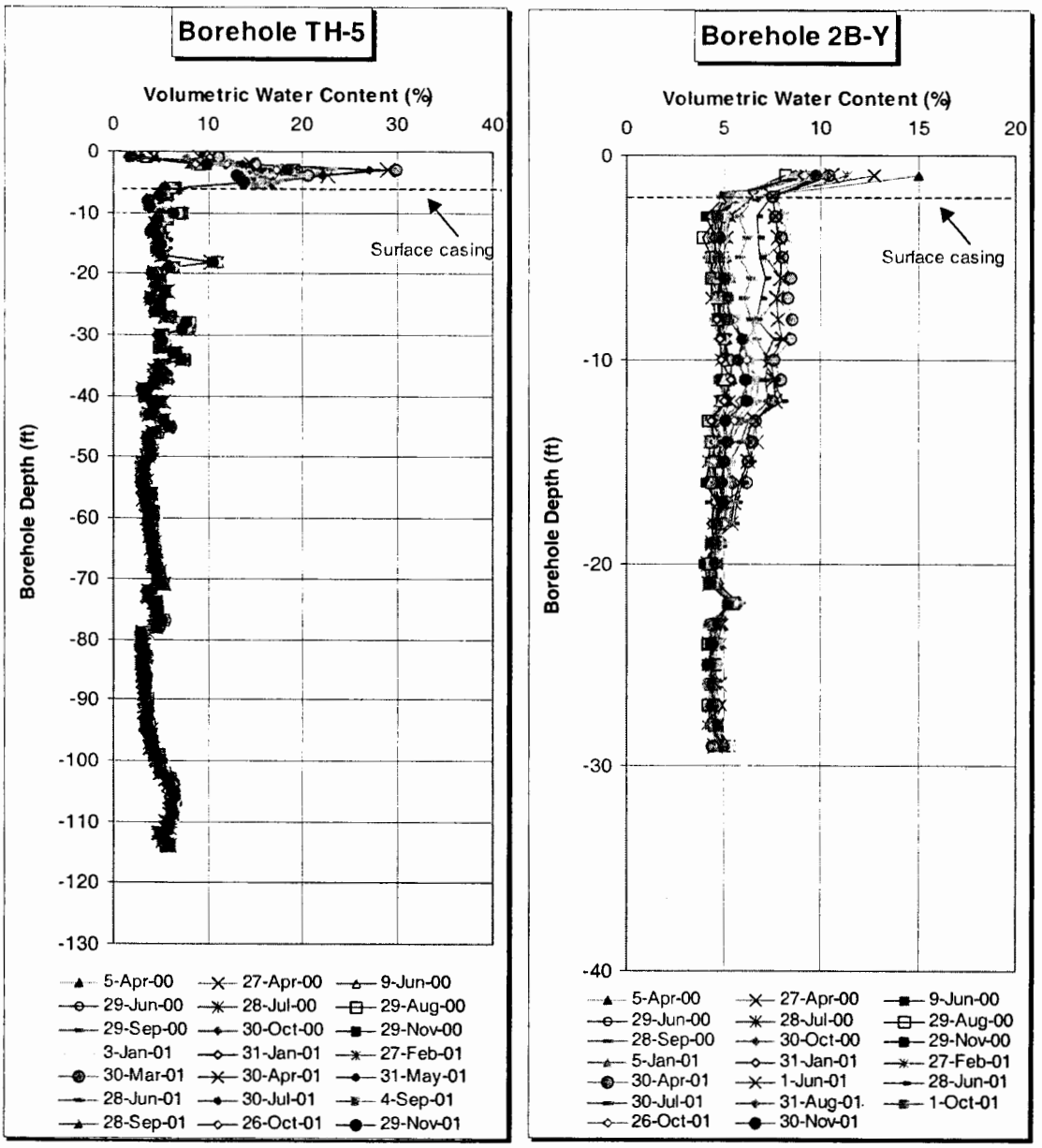

Figure A-3. Neutron probe moisture measurements for boreholes TH-5 and 2B-Y

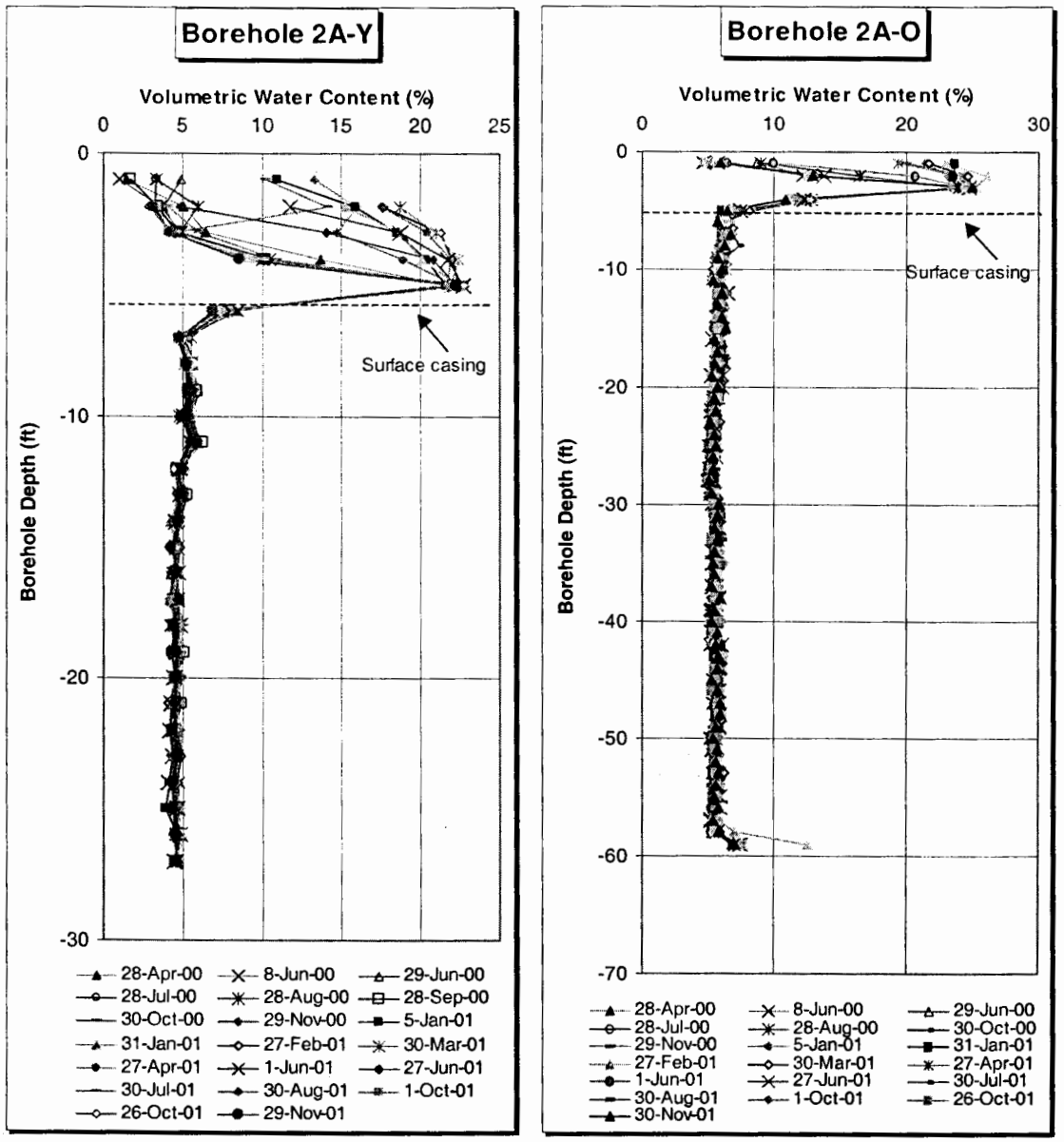

Figure A-4. Neutron probe moisture measurements boreholes 2A-Y and 2A-O

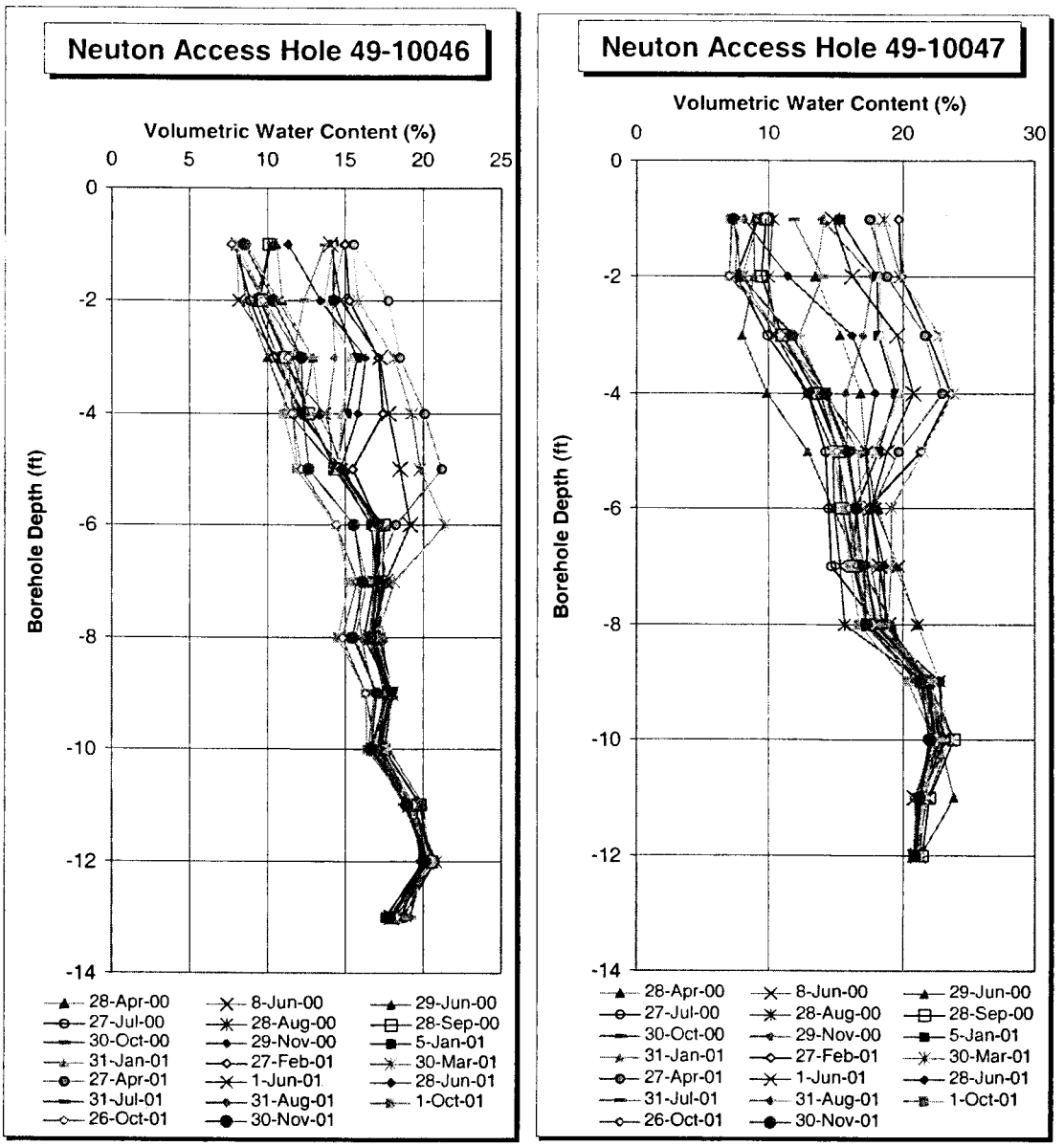

Figure A-5. Neutron probe moisture measurements for neutron access holes 49-10046 and 49-10047

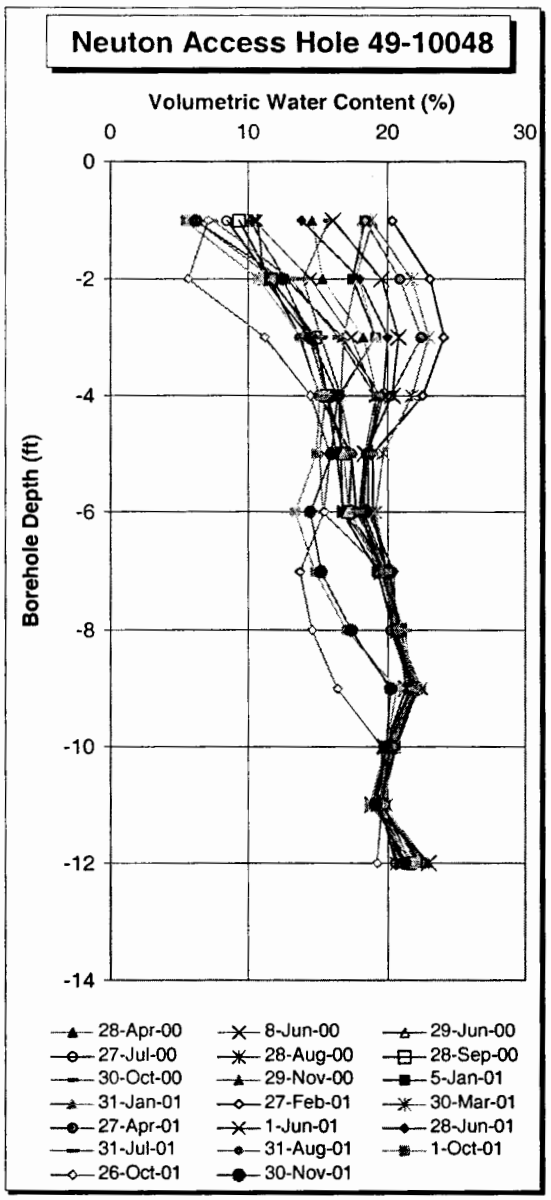

Figure A-6. Neutron probe moisture measurements for neutron access hole 49-10048

Appendix B

Time Versus Moisture Content Plots

APPENDIX B TIME VERSUS MOISTURE CONTENT PLOTS

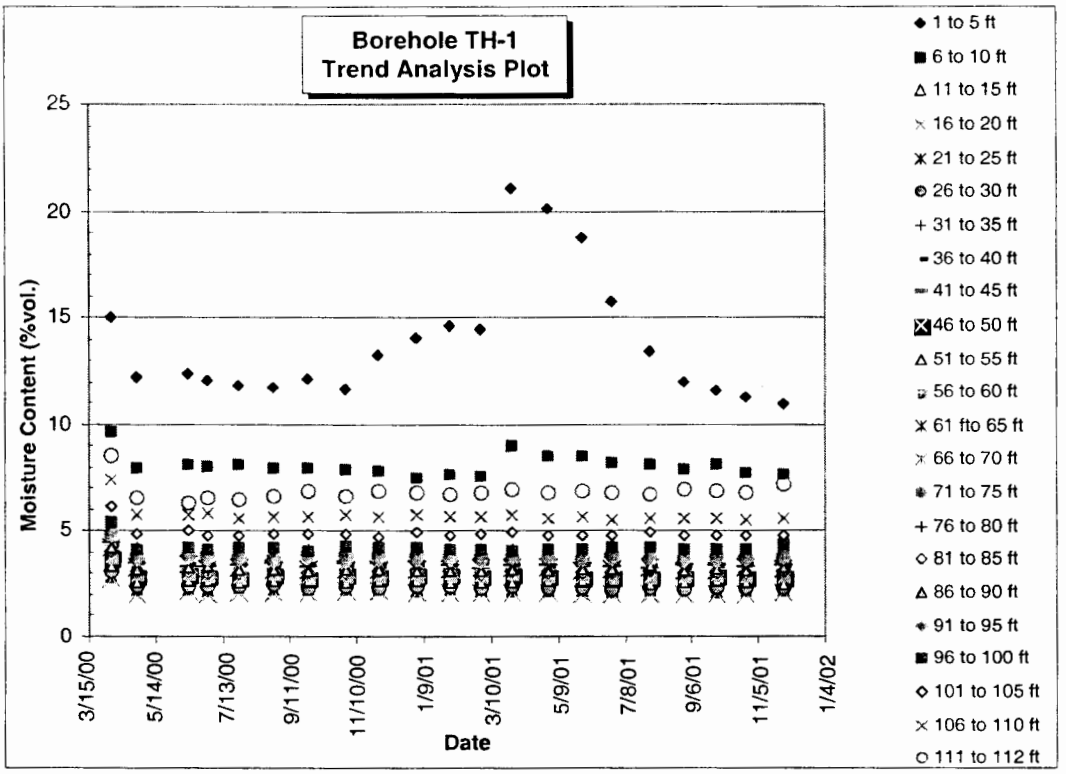

Figure B-1. Trend plot of neutron moisture measurements, borehole TH-1

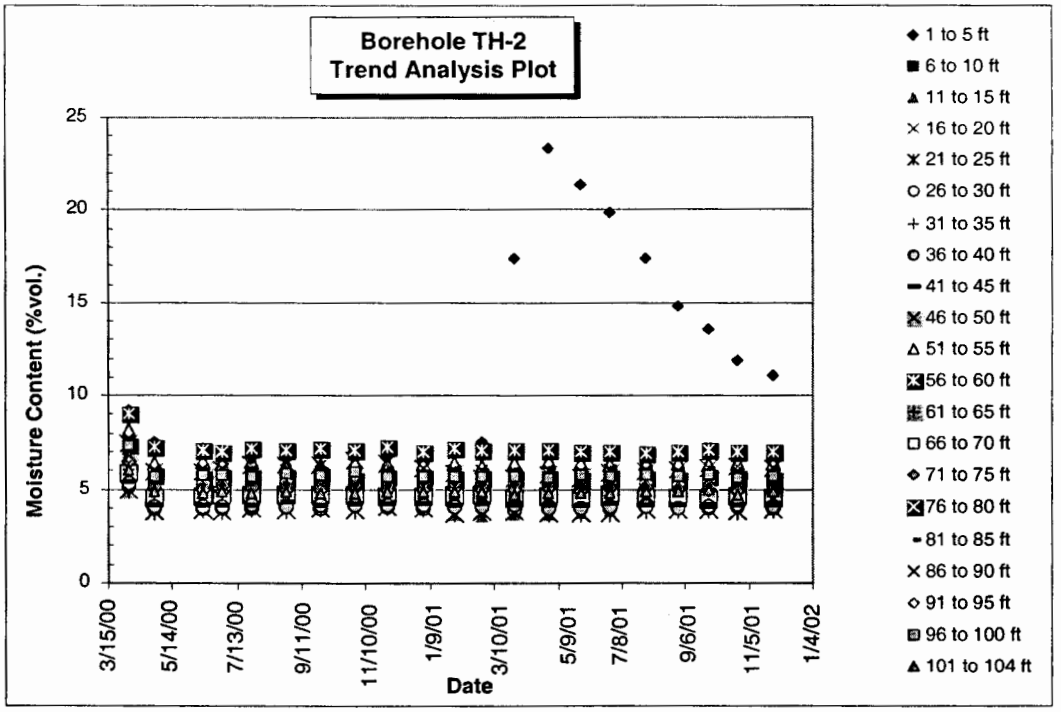

Figure B-2. Trend plot of neutron moisture measurements, borehole TH-2

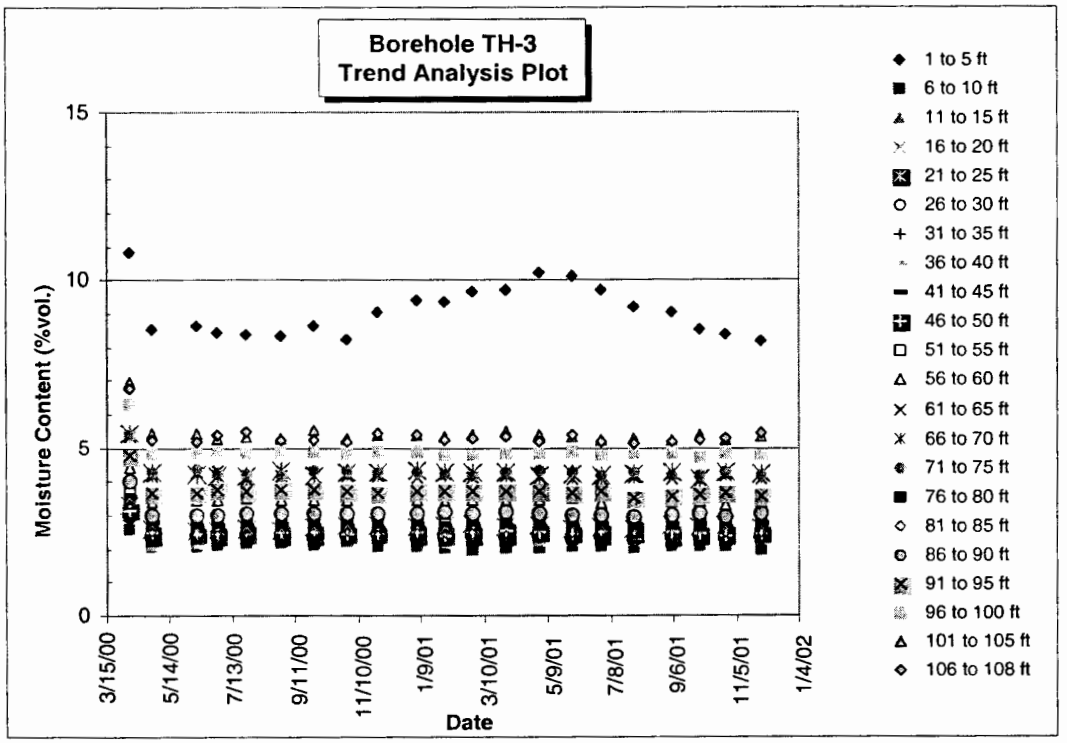

Figure B-3. Trend plot of neutron moisture measurements, borehole TH-3

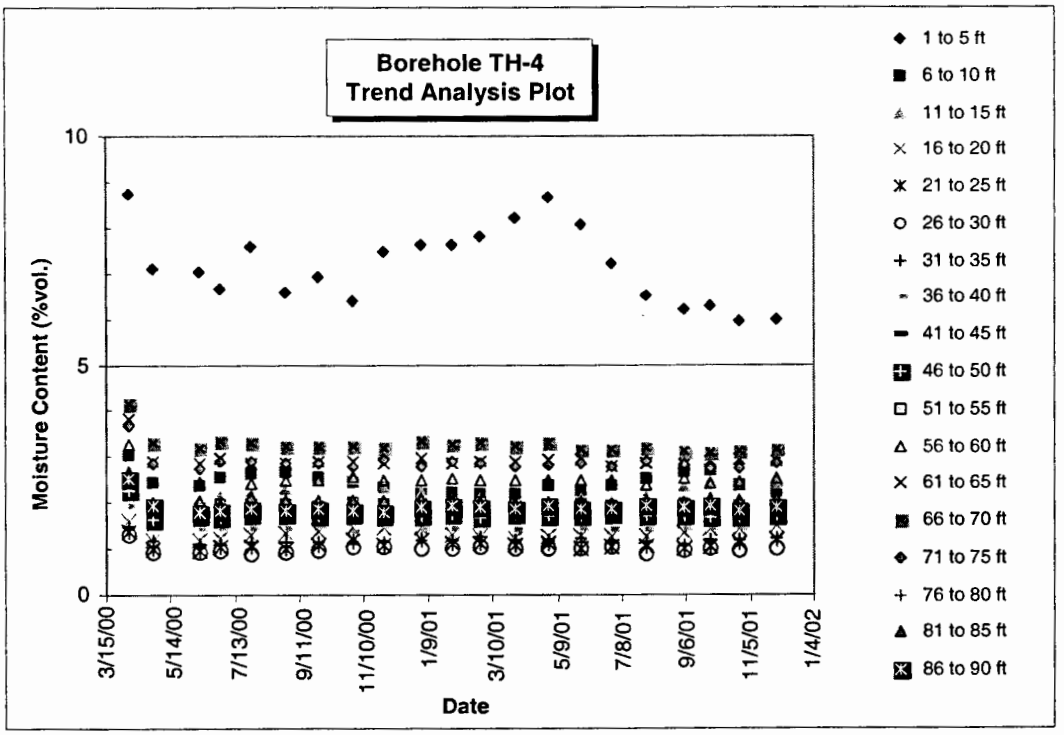

Figure B-4. Trend plot of neutron moisture measurements, borehole TH-4

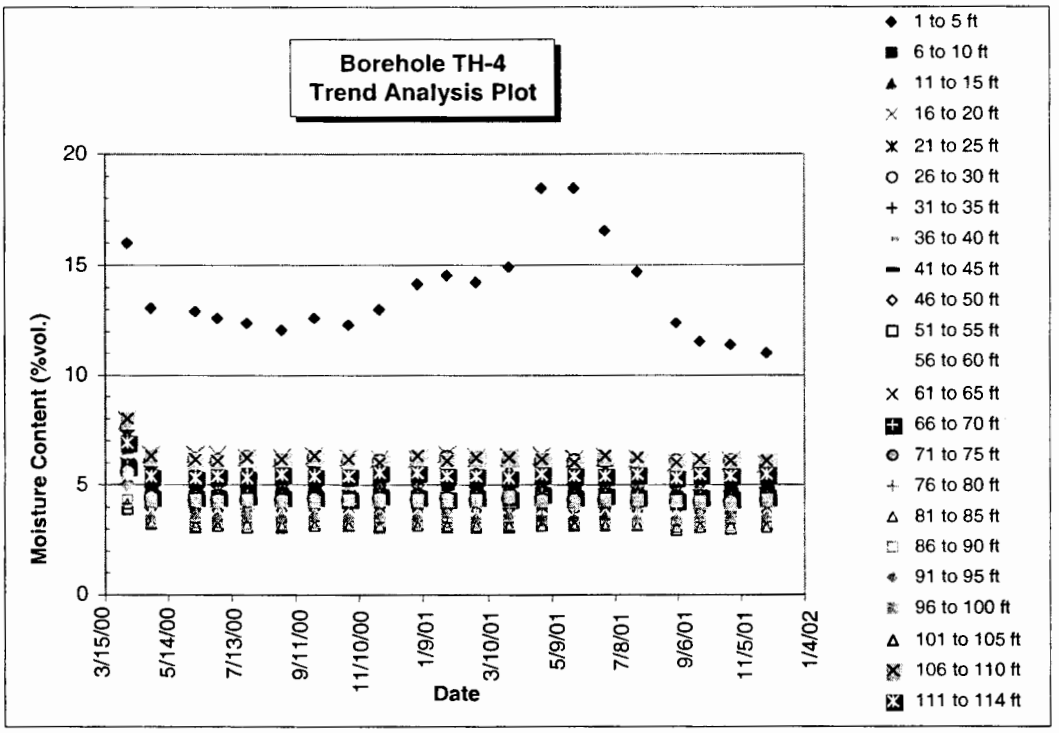

Figure B-5. Trend plot of neutron moisture measurements, borehole TH-5

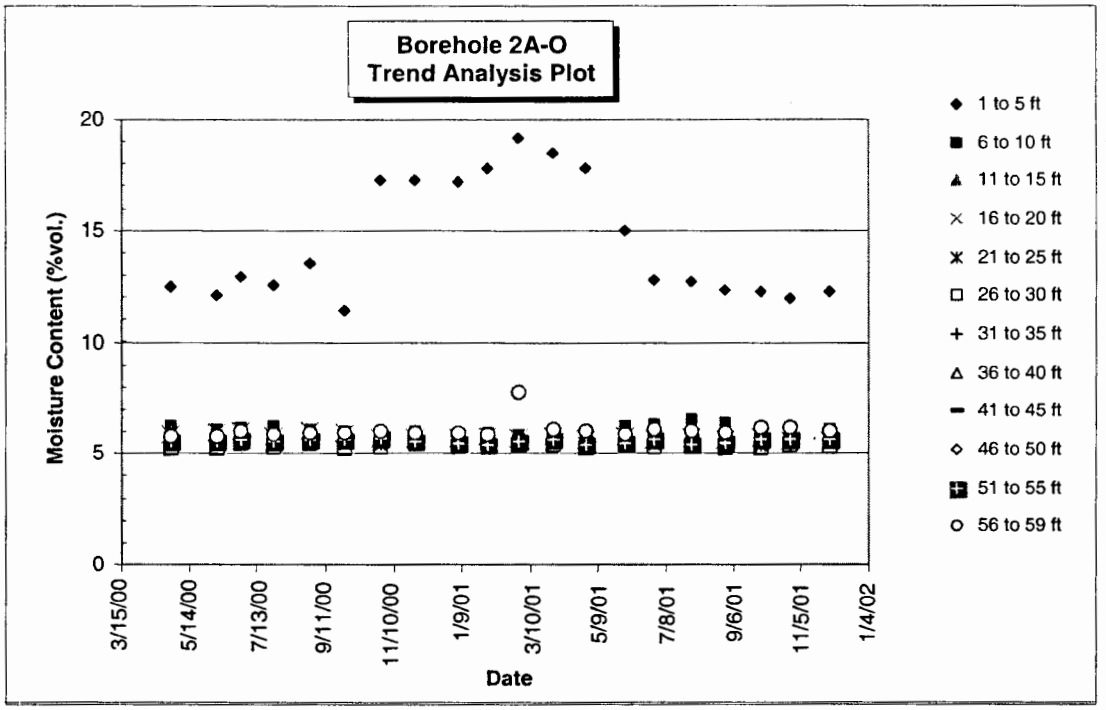

Figure B-6. Trend plot of neutron moisture measurements, borehole 2A-O

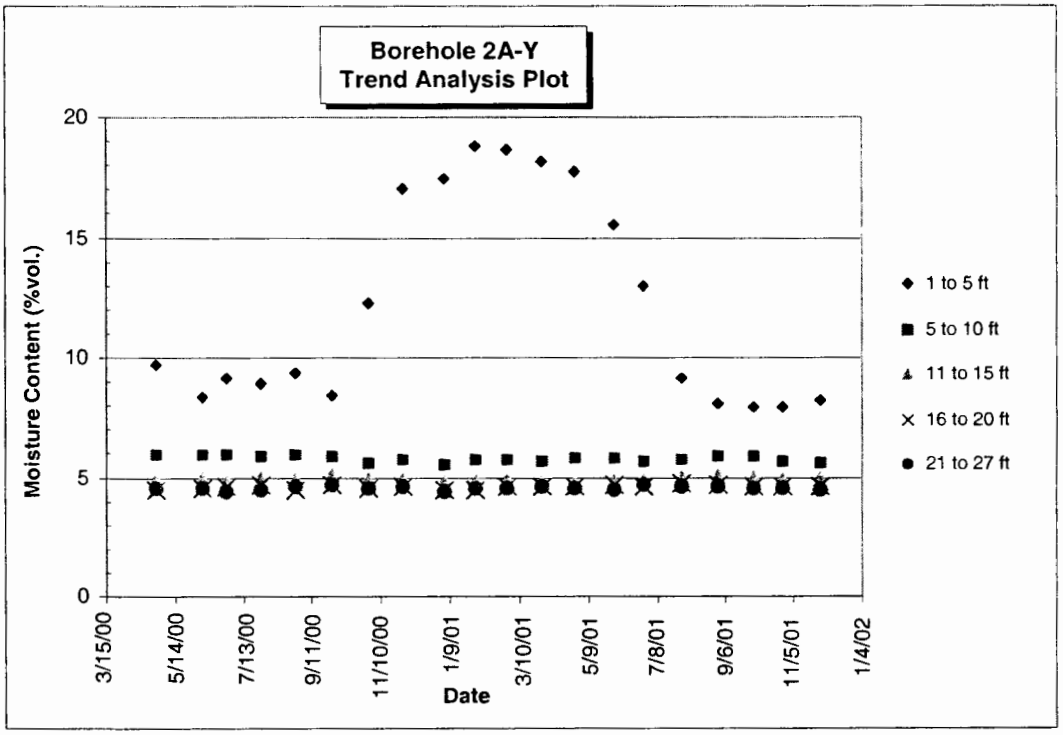

Figure B-7. Trend plot of neutron moisture measurements, borehole 2A-Y

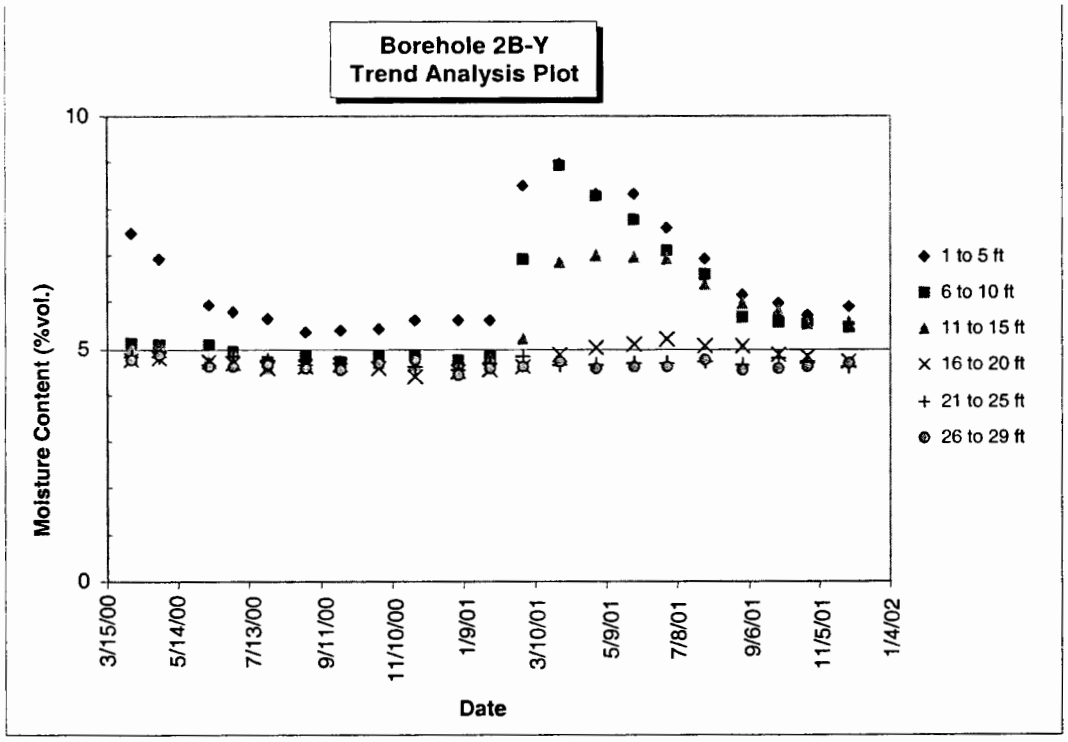

Figure B-8. Trend plot of neutron moisture measurements, borehole 2B-Y

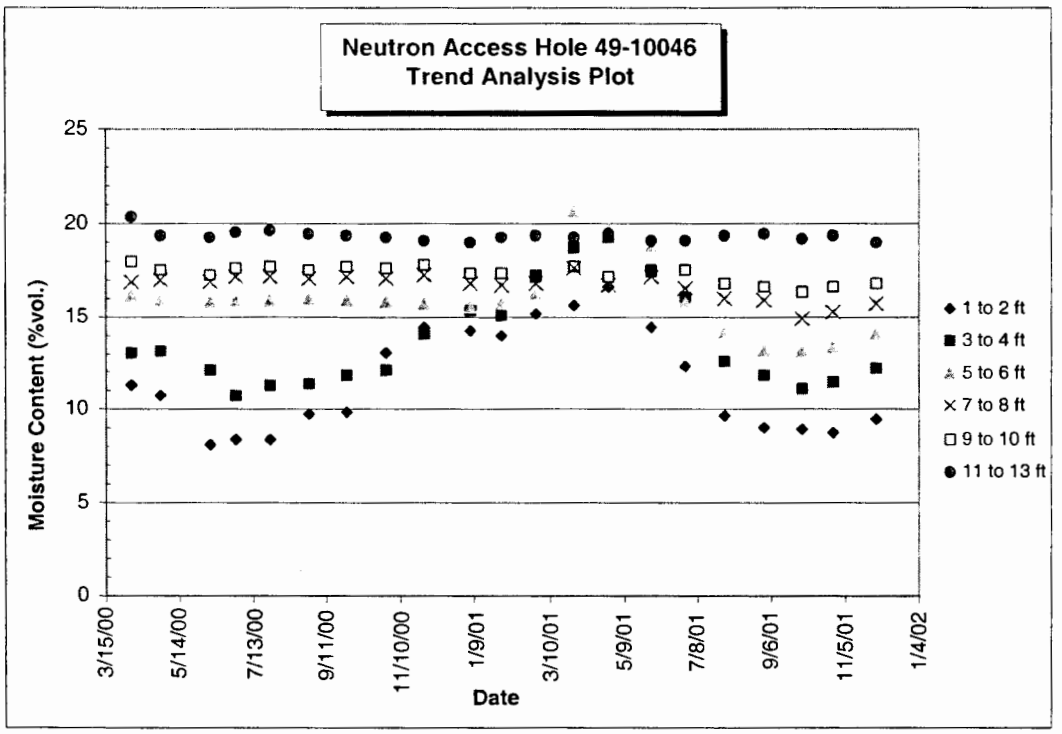

Figure B-9. Trend plot of neutron moisture measurements, neutron access hole 49-10046

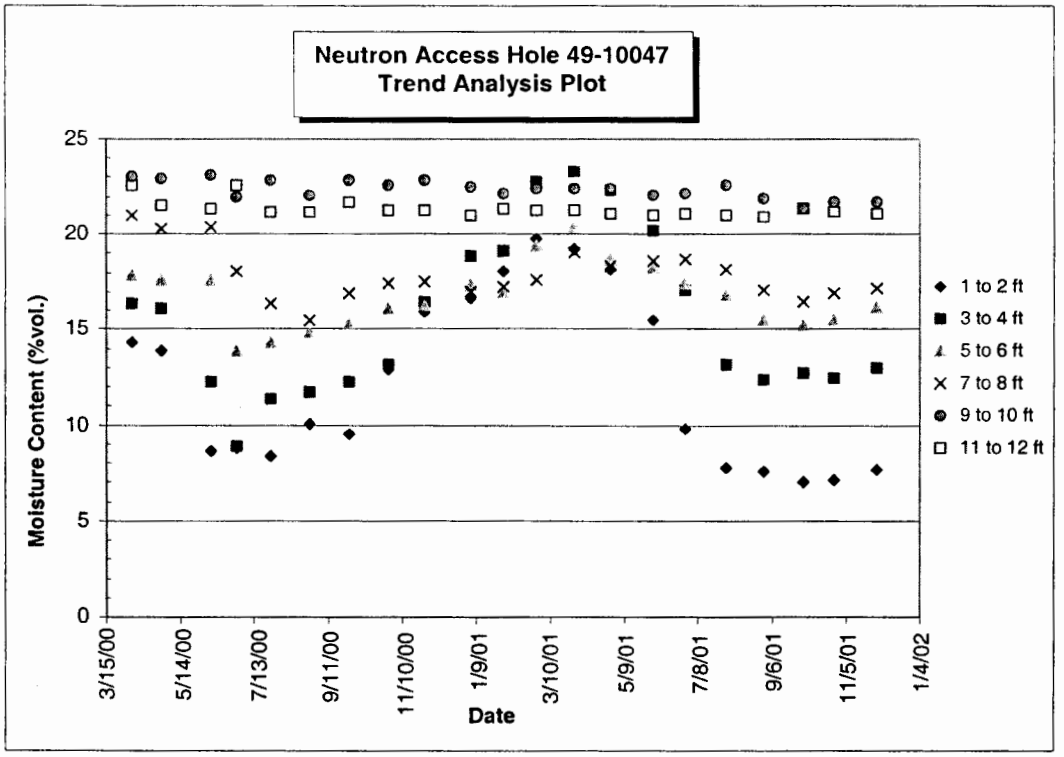

Figure B-10. Trend plot of neutron moisture measurements, neutron access hole 49-10047

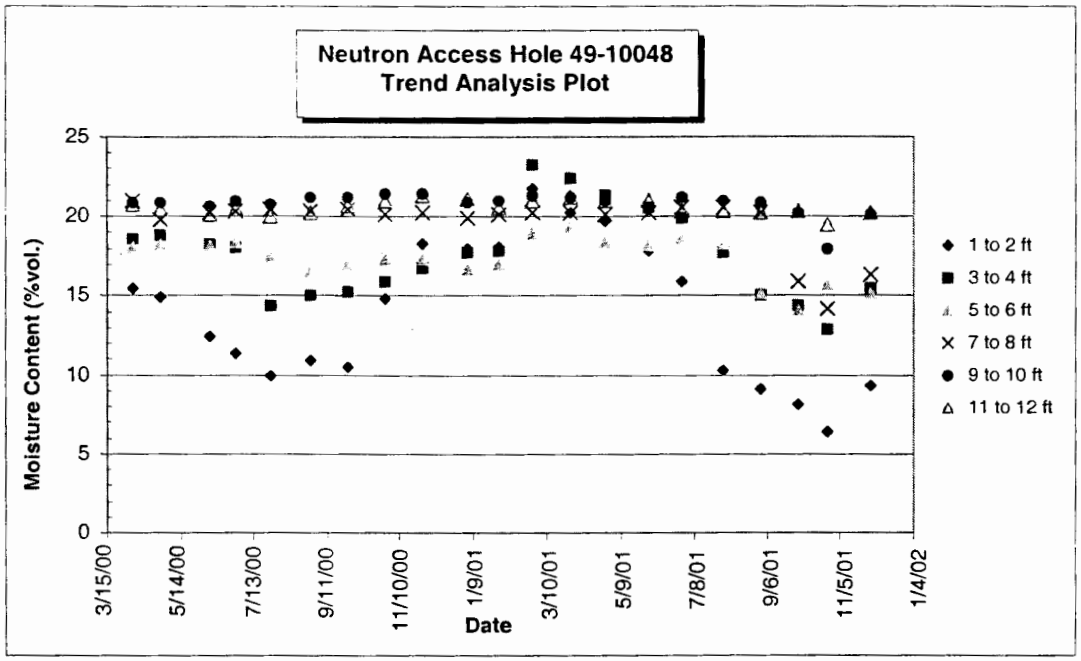

Figure B-11. Trend plot of neutron moisture measurements, neutron access hole 49-10048

Appendix C

Quarterly Pore-Gas Sampling at Technical Area 54,
Material Disposal Areas L and G, and
Technical Area 50, Boreholes 50-9100 and 50-10131
First Quarter, Fiscal Year 2002

Quarterly Pore-Gas Sampling at Technical Area 54, Material Disposal Areas L and G, and Technical Area 50, Boreholes 50-9100 and 50-10131 First Quarter, Fiscal Year 2002

MDA Focus Area
Environmental Restoration Project
Los Alamos National Laboratory

February 2002

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1. INTRODUCTION

This report discusses subsurface pore-gas sampling at Los Alamos National Laboratory (the Laboratory), Technical Areas (TAs) 54 and 50 for the first-quarter of Fiscal Year (FY) 2002. Monitoring at TA-54 is required by Module VIII of the Laboratory's Hazardous Waste Facility Permit in Section C.5, "Unsaturated Zone Monitoring" (EPA 1990, 1585). The approved plan for pore-gas sampling at TA-54 is described in the Laboratory's response (Glatzmaier 1993, 30987) to an Environmental Protection Agency (EPA) notice of deficiency (Driscoll 1992, 3849.3) addressing the Laboratory's Resource Conservation and Recovery Act facility investigation (RFI) work plan for TA-54 (LANL 1992, 7669). Monitoring at TA-50 is being performed to gather RFI data.

1.1 Sampling Plan Requirements

Twenty-eight Environmental Restoration (ER) Project wells are available for pore-gas sampling at TA-54. The sampling and analysis plan requires the collection of samples from 12 wells each quarter. These 12 samples are collected for analysis of volatile organic compounds (VOCs). Of these 12 samples, 7 are to be selected from a list of 10 wells located at Material Disposal Area (MDA) L, and 2 are to be selected from a list of 4 wells located at MDA G. Thus, 9 of the 12 samples collected each quarter are constrained to a defined set of 14 wells. This leaves 3 samples per quarter that may be distributed among the remaining 14 available ER Project pore-gas sampling wells or the boreholes provided by the TA-54 Area G Performance Assessment Maintenance Group (PAMG wells). Two pore-gas wells at MDA C in TA-50 are sampled each quarter.

The SUMMA canister sampling method is currently being used, with analysis by EPA TO-14 (gas chromatography/mass spectrometry) (EPA 1999, 70063). SUMMA canister samples are drawn from one of the several sampling ports available at each well. Table 4 in Appendix F of the fourth-quarter report for FY 2000 (Environmental Restoration Project 2000, 70064) lists the reasons for selecting ports to be sampled during FY 2002.

Before the required sampling is performed, all available wells (ER Project wells and PAMG wells) are screened with the Brüel and Kjaer (B&K) multigas monitor, Type 1302. Each port is purged and monitored with field instruments until carbon dioxide (CO_2) levels have stabilized at values representative of subsurface pore-gas conditions and is then screened for four VOCs (1,1,1-trichloroethane, trichloroethene, perchloroethene, and Freon-11).

Three types of field quality assurance (QA) samples are collected and analyzed. These three samples include a duplicate sample, an equipment blank of zero grade air (zero grade air is a common term for air that is certified to be free from VOC contamination) or nitrogen drawn through the sampling apparatus in the working area, and a performance evaluation sample/calibration gas sample taken from a tank of a certified gas mixture. Laboratory QA for EPA Method TO-14 includes internal standards, surrogates, replicates, blanks, laboratory control samples, and reference standards.

1.2 Sampling Purpose

The purpose of the pore-gas sampling at TA-54 MDAs L and G is three-fold:

- to identify changes in contaminant concentrations at the perimeter of the relatively well-characterized plume at MDA L as an indicator of outward plume expansion (i.e., extent),
- to monitor for contaminants and changes in contaminant concentration distributions within the plumes at MDAs L and G as an indicator of changes warranting further attention (i.e., nature), and
- to monitor wells for data gap needs for future modeling and trend analyses.

The purpose of pore-gas sampling at TA-50 is to gather data on the nature and extent of a potential VOC plume.

2.0 FIRST-QUARTER SAMPLING

2.1 Sampling Event

Sampling for the first quarter of FY 2002 (October through December) was conducted from November 15 through November 16, 2001. Field screening was not performed during the first quarter because the function check on the B&K indicated that the instrument was out of calibration. The instrument was sent back to the manufacturer for calibration, and field screening will be performed when the instrument is returned.

Table 1 identifies the wells sampled (from the list of all wells available) and lists the port at each well from which the SUMMA canister sample was drawn. Fourteen wells were sampled in accordance with the approved sampling plan (Glatzmaier 1993, 30987). Eight wells at MDA L were sampled, two of the MDA G wells were sampled, two PAMG wells were sampled, and two boreholes at MDA C were also sampled (Table 1). The three QA samples (field duplicate, equipment blank, and performance evaluation) were collected as planned. In total, 19 samples were collected for laboratory analysis.

2.2 Sampling Results

The sampling results for the SUMMA canister samples for the first quarter of FY 2002 will be reported in the report for the second quarter. The analytical results have come back from the laboratory but are awaiting data validation.

Table 1 Summary of Sampling Event, First Quarter of FY 2002

Well ID	Site	On Defined Sampling List (Y/N)	Number of Ports Screened	Depths of Screened Ports (ft)	Depth of Port Sampled (ft)	Sample ID
54-1015	MDA L	Y	n/a*	n/a	385	MD54-01-0208
54-1111	PAMG	Y	n/a	n/a	50	MD54-01-0215
54-1117	PAMG	Y	n/a	n/a	50	MD54-01-0205
54-2002	MDA L	Y	n/a	n/a	100	MD54-01-0207
54-2009	MDA G	Y	n/a	n/a	62	MD54-01-0211
54-2010	MDA G	Y	n/a	n/a	53	MD54-01-0206
54-2021	MDA L	Y	n/a	n/a	100	MD54-01-0210
54-2023	MDA L	Y	n/a	n/a	159	MD54-01-0201
54-2026	MDA L	Y	n/a	n/a	160	MD54-01-0204
54-2029	MDA L	Y	n/a	n/a	100	MD54-01-0200
54-2030	MDA L	Y	n/a	n/a	100	MD54-01-0203
54-2034	MDA L	Y	n/a	n/a	60	MD54-01-0209
54-9100	MDA C	Y	n/a	n/a	Port 1 and port 5	MD50-01-0025 and MD50-01-0026
50-10131	MDA C	Y	n/a	n/a	Port 1 and port 2	MD50-01-0027 and MD50-01-0028
Total wells sampled					14	
MDA L defined list wells sampled (8 expected)					8	
MDA G defined list wells sampled (2 expected)					2	
PAMG wells sampled					2	
MDA C defined list wells sampled (2 expected)					2	
QA samples taken					1 field duplicate 1 performance evaluation 1 equipment blank	

* n/a = not applicable.

REFERENCES

Driscoll, B., November 30, 1992. "EPA NOD to LANL," EPA memorandum to C. Rofer, Los Alamos National Laboratory, Los Alamos, New Mexico. (Driscoll 1992, 3849.3)

Environmental Restoration Project, November 14, 2000. "Quarterly Technical Report, July–September 2000," Los Alamos National Laboratory report LA-UR-00-5107, Los Alamos, New Mexico. (Environmental Restoration Project 2000, 70064)

EPA (US Environmental Protection Agency), April 1990. United States Environmental Protection Agency, Region 6 Hazardous Waste Permit (Hazardous and Solid Waste Amendments). (EPA 1990, 1585)

EPA (US Environmental Protection Agency), January 1999. "Compendium Method TA-14A, Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Specially Prepared Canisters With Subsequent Analysis by Gas Chromatography," in "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air," EPA/625/R-96/010b, Office of Research and Development, Cincinnati, Ohio. (EPA 1999, 70063)

Glatzmaier, T., November 12, 1993. "Final Notice of Deficiency (NOD) Response for Operable Unit (OU) 1148," Los Alamos National Laboratory memorandum EM-13:93-A232, Los Alamos, New Mexico. (Glatzmaier 1993, 30987)

LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1148," Los Alamos National Laboratory report LA-UR-92-855, Los Alamos, New Mexico. (LANL 1992, 7669)

Appendix D

Groundwater Sampling Results,
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April, June, and July 2001

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Table D-1
Samples Taken at Regional Wells

Sample ID	Location ID	Depth (ft)	Media	Alkalinity	Anions[a]	Cations	Cyanide	Conductivity	Non-TAL Metals[b]	pH	Stable Isotopes	TAL Metals	Total Kjeldahl Nitrogen	Uranium	Dissolved Organic Carbon
Regional Well CdV-R-15-3															
Second Sampling Round (April 23, 2001)															
GW15-01-0013	15-03494	1254	Regional Groundwater	—[c]	—	—	—	yes	8701R	yes	—	8703R	—	8703R	—
GW15-01-0014	15-03494	1254	Regional Groundwater	8701R	8701R	—	—	—	8701R	—	—	8703R	—	8703R	—
GW15-01-0015	15-03494	1350	Regional Groundwater	—	—	—	—	yes	8706R	yes	—	8707R	—	8707R	—
GW15-01-0016	15-03494	1350	Regional Groundwater	8706R	8706R	—	—	—	8706R	—	—	8707R	—	8707R	—
GW15-01-0017	15-03494	1640	Regional Groundwater	—	—	—	—	yes	8706R	yes	—	8707R	—	8707R	—
GW15-01-0018	15-03494	1640	Regional Groundwater	8706R	8706R	—	—	—	8706R	—	—	8707R	—	8707R	—
Third Sampling Round (July 18, 2001)															
GW15-01-0047	15-03494	1254	Regional Groundwater	—	—	—	—	yes	9372R	yes	9375R	9374R	—	9374R	—
GW15-01-0048	15-03494	1254	Regional Groundwater	9372R	9373R	—	—	—	9372R	—	—	9374R	—	9374R	—
GW15-01-0049	15-03494	1350	Regional Groundwater	—	—	—	—	yes	9388R	yes	9394R	9392R	—	9392R	—
GW15-01-0050	15-03494	1350	Regional Groundwater	9388R	9389R	—	—	—	9388R	—	—	9392R	—	9392R	—
GW15-01-0051	15-03494	1640	Regional Groundwater	—	—	—	—	yes	9400R	yes	9403R	9402R	—	9402R	—
GW15-01-0052	15-03494	1640	Regional Groundwater	9400R	9401R	—	—	—	9400R	—	—	9402R	—	9402R	—
Regional Well R-22															
Second Sampling Round (June 19, 2001)															
GW22-01-0012	54-15421	906	Regional Groundwater	—	—	—	9068R	yes	9068R	yes	9072R	9071R	—	9071R	—
GW22-01-0013	54-15421	906	Regional Groundwater	9068R	9069R	9068R	—	—	9068R	—	—	9071R	9070R	9071R	—
GW22-01-0014	54-15421	962	Regional Groundwater	—	—	—	9078R	yes	9078R	yes	9082R	9081R	—	9081R	—
GW22-01-0015	54-15421	962	Regional Groundwater	9078R	9079R	9078R	—	—	9078R	—	—	9081R	9080R	9081R	—
GW22-01-0016	54-15421	1273	Regional Groundwater	—	—	—	9104R	yes	9104R	yes	9115R	9114R	—	9114R	—
GW22-01-0017	54-15421	1273	Regional Groundwater	9189R	9190R	9189R	—	—	9189R	—	—	9192R	9191R	9192R	—
GW22-01-0018	54-15421	1379	Regional Groundwater	—	—	—	9128R	yes	9128R	yes	9132R	9131R	—	9131R	—
GW22-01-0019	54-15421	1379	Regional Groundwater	9128R	9129R	9128R	—	—	9128R	—	—	9131R	9130R	9131R	—
GW22-01-0020	54-15421	1449	Regional Groundwater	—	—	—	9152R	yes	9152R	yes	9156R	9155R	—	9155R	—
GW22-01-0021	54-15421	1449	Regional Groundwater	9152R	9153R	9152R	—	—	9152R	—	—	9155R	9154R	9155R	—
GW22-01-0026	54-15421	1273	Regional Groundwater	—	—	—	—	—	—	—	—	—	—	—	—

Table D-1 (continued)

Sample ID	High-Explosive	Humic Acids	Pesticides/ PCBs[d]	Semivolatile Organic Compounds	Total Organic Carbon	Volatile Organic Compounds	Americium-241	Gamma Spectroscopy	Gross Alpha/Beta	Gross Gamma	Tritium	Iodine-129	Isotopic Plutonium	Isotopic Uranium	Strontium-90	Technetium-99 by ICPMS[e]
Regional Well CdV-R-15-3																
Second Sampling Round (April 23, 2001)																
GW15-01-0013	8702R	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW15-01-0014	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW15-01-0015	8705R	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW15-01-0016	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW15-01-0017	8705R	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW15-01-0018	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Third Sampling Round (July 18, 2001)																
GW15-01-0047	9371R	—	9369R	9369R	9369R	9369R	—	—	9378R	9378R	9377R	—	—	—	—	—
GW15-01-0048	—	—	—	—	—	—	9378R	9378R	—	—	—	—	9378R	9378R	9378R	—
GW15-01-0049	9391R	—	9387R	9387R	9387R	9387R	—	—	9393R	9393R	9396R	—	—	—	—	—
GW15-01-0050	—	—	—	—	—	—	9393R	9393R	—	—	—	—	9393R	9393R	9393R	—
GW15-01-0051	9399R	—	9397R	9397R	9397R	9397R	—	—	9406R	9406R	9405R	—	—	—	—	—
GW15-01-0052	—	—	—	—	—	—	9406R	9406R	—	—	—	—	9406R	9406R	9406R	—
Regional Well R-22																
Second Sampling Round (June 19, 2001)																
GW22-01-0012	—	—	9066R	9066R	9066R	9066R	9075R	9075R	—	—	9074R	9075R	9075R	9075R	9075R	9075R
GW22-01-0013	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW22-01-0014	9077R	—	9076R	9076R	9076R	9076R	9085R	9085R	—	—	9084R	9085R	9085R	9085R	9085R	9085R
GW22-01-0015	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW22-01-0016	—	—	9103R	9103R	9103R	9103R	9105R	9105R	—	—	—	9105R	9105R	9105R	9105R	9105R
GW22-01-0017	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW22-01-0018	9127R	—	9126R	9126R	9126R	9126R	9134R	9134R	—	—	9172R	9134R	9134R	9134R	9134R	9134R
GW22-01-0019	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW22-01-0020	9151R	—	9150R	9150R	9150R	9150R	9158R	9158R	—	—	9173R	9158R	9158R	9158R	9158R	9158R
GW22-01-0021	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GW22-01-0026	—	—	—	—	—	—	—	—	—	—	9193R	—	—	—	—	9194R

[a] Anions = Ammonia, bromide, chloride, fluoride, nitrate/nitrite, oxalate, perchlorate, sulfate.
[b] Non-TAL metals = Boron, molybdenum, silicon, strontium.
[c] — = Not available or applicable.
[d] PCBs = Polychlorinated biphenyls.
[e] ICPMS = Inductively coupled plasma mass spectrometry.

Table D-2
Regional Well CdV-R-15-3 Screen 4 Second Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	4	1254	04/23/01	NF[e]	1	1	41200	—[f]	—	—	—	—
pH	4	1254	04/23/01	NF	1	1	7.53	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	4	1254	04/23/01	NF	1	1	120	—	—	0/1	—	0/1
Temperature (°C)	4	1254	04/23/01	NF	1	1	15.9	—	—	0/1	—	0/1
Turbidity (NTU)[g]	4	1254	04/23/01	NF	1	1	1.2	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	4	1254	04/23/01	F[h]	1	1	58000	—	—	—	—	—
Aluminum	4	1254	04/23/01	F	1	1	22	—	50	0/1	5000	0/1
Aluminum	4	1254	04/23/01	NF	1	1	12	—	—	—	—	—
Antimony	4	1254	04/23/01	F	1	0	—	[0.153]	6	0/1	—	—
Antimony	4	1254	04/23/01	NF	1	0	—	[0.153]	—	—	—	—
Arsenic	4	1254	04/23/01	F	1	0	—	[1.5]	50	0/1	100	0/1
Arsenic	4	1254	04/23/01	NF	1	0	—	[1.5]	—	—	—	—
Barium	4	1254	04/23/01	F	1	1	21	—	2000	0/1	1000	0/1
Barium	4	1254	04/23/01	NF	1	1	22	—	—	—	—	—
Beryllium	4	1254	04/23/01	F	1	0	—	[0.012]	4	0/1	—	—
Beryllium	4	1254	04/23/01	NF	1	0	—	[0.012]	—	—	—	—
Boron	4	1254	04/23/01	F	1	1	9	—	—	—	750	0/1
Boron	4	1254	04/23/01	NF	1	1	11	—	—	—	—	—
Cadmium	4	1254	04/23/01	F	1	0	—	[0.066]	5	0/1	10	0/1
Cadmium	4	1254	04/23/01	NF	1	0	—	[0.066]	—	—	—	—
Calcium	4	1254	04/23/01	F	1	1	9100	—	—	—	—	—
Calcium	4	1254	04/23/01	NF	1	1	9200	—	—	—	—	—
Chloride	4	1254	04/23/01	F	1	1	1600	—	250000	0/1	250000	0/1
Chromium (total)	4	1254	04/23/01	F	1	1	0.27	—	100	0/1	50	0/1
Chromium (total)	4	1254	04/23/01	NF	1	1	0.87	—	—	—	—	—
Cobalt	4	1254	04/23/01	F	1	1	0.66	—	—	—	50	0/1

Table D-2 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Cobalt	4	1254	04/23/01	NF	1	0	—	[0.37]	—	—	—	—
Copper	4	1254	04/23/01	F	1	0	—	[0.27]	1300	0/1	1000	0/1
Copper	4	1254	04/23/01	NF	1	0	—	[0.27]	—	—	—	—
Fluoride	4	1254	04/23/01	F	1	1	210	—	4000	0/1	1600	0/1
Iron	4	1254	04/23/01	F	1	0	—	[100]	300	0/1	1000	0/1
Iron	4	1254	04/23/01	NF	1	0	—	[130]	—	—	—	—
Lead	4	1254	04/23/01	F	1	0	—	[0.037]	15	0/1	50	0/1
Lead	4	1254	04/23/01	NF	1	1	0.047	—	—	—	—	—
Magnesium	4	1254	04/23/01	F	1	1	3000	—	—	—	—	—
Magnesium	4	1254	04/23/01	NF	1	1	3100	—	—	—	—	—
Manganese	4	1254	04/23/01	F	1	1	72	—	50	1/1	200	0/1
Manganese	4	1254	04/23/01	NF	1	1	75	—	—	—	—	—
Mercury	4	1254	04/23/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	4	1254	04/23/01	NF	1	0	—	[0.033]	—	—	2	0/1
Nickel	4	1254	04/23/01	F	1	1	1.4	—	100	0/1	200	0/1
Nickel	4	1254	04/23/01	NF	1	1	2.1	—	—	—	—	—
Nitrate + Nitrite (as N)	4	1254	04/23/01	F	1	0	—	[100]	10000	0/1	—	—
Potassium	4	1254	04/23/01	F	1	1	1300	—	—	—	—	—
Potassium	4	1254	04/23/01	NF	1	1	1400	—	—	—	—	—
Selenium	4	1254	04/23/01	F	1	0	—	[1.9]	50	0/1	50	0/1
Selenium	4	1254	04/23/01	NF	1	0	—	[1.9]	—	—	—	—
Silver	4	1254	04/23/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Silver	4	1254	04/23/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	4	1254	04/23/01	F	1	1	8000	—	—	—	—	—
Sodium	4	1254	04/23/01	NF	1	1	8000	—	—	—	—	—
Sulfate	4	1254	04/23/01	F	1	1	1800	—	250000	0/1	600000	0/1
Thallium	4	1254	04/23/01	F	1	1	0.153	—	2	0/1	—	—
Thallium	4	1254	04/23/01	NF	1	0	—	[0.077]	—	—	—	—
Uranium	4	1254	04/23/01	F	1	1	0.422	—	—	—	—	—
Uranium	4	1254	04/23/01	NF	1	1	0.45	—	—	—	—	—
Vanadium	4	1254	04/23/01	F	1	1	3	—	—	—	—	—
Vanadium	4	1254	04/23/01	NF	1	1	3.1	—	—	—	—	—

Table D-2 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Zinc	4	1254	04/23/01	F	1	1	8.7	—	5000	0/1	10000	0/1
Zinc	4	1254	04/23/01	NF	1	1	1.3	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-3
Regional Well CdV-R-15-3 Screen 5 Second Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	5	1350	04/25/01	NF[e]	1	1	112000	—[f]	—	—	—	—
pH	5	1350	04/25/01	NF	1	1	7.06	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	5	1350	04/25/01	NF	1	1	257	—	—	0/1	—	0/1
Temperature (°C)	5	1350	04/25/01	NF	1	1	16.2	—	—	0/1	—	0/1
Turbidity (NTU)[g]	5	1350	04/25/01	NF	1	1	2.1	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	5	1350	04/25/01	F[h]	1	1	120000	—	—	—	—	—
Aluminum	5	1350	04/25/01	F	1	1	31	—	50	0/1	5000	0/1
Aluminum	5	1350	04/25/01	NF	1	0	—	[7.6]	—	—	—	—
Antimony	5	1350	04/25/01	F	1	0	—	[0.153]	6	0/1	—	—
Antimony	5	1350	04/25/01	NF	1	0	—	[0.153]	—	—	—	—
Arsenic	5	1350	04/25/01	F	1	1	1.9	—	50	0/1	100	0/1
Arsenic	5	1350	04/25/01	NF	1	1	2.2	—	—	—	—	—
Barium	5	1350	04/25/01	F	1	1	110	—	2000	0/1	1000	0/1
Barium	5	1350	04/25/01	NF	1	1	120	—	—	—	—	—
Beryllium	5	1350	04/25/01	F	1	0	—	[0.012]	4	0/1	—	—
Beryllium	5	1350	04/25/01	NF	1	1	0.026	—	—	—	—	—
Boron	5	1350	04/25/01	F	1	1	32	—	—	—	750	0/1
Boron	5	1350	04/25/01	NF	1	1	39	—	—	—	—	—
Cadmium	5	1350	04/25/01	F	1	0	—	[0.066]	5	0/1	10	0/1
Cadmium	5	1350	04/25/01	NF	1	0	—	[0.066]	—	—	—	—
Calcium	5	1350	04/25/01	F	1	1	17000	—	—	—	—	—
Calcium	5	1350	04/25/01	NF	1	1	17000	—	—	—	—	—
Chloride	5	1350	04/25/01	F	1	1	2600	—	250000	0/1	250000	0/1
Chromium (total)	5	1350	04/25/01	F	1	0	—	[0.21]	100	0/1	50	0/1
Chromium (total)	5	1350	04/25/01	NF	1	1	3.5	—	—	—	—	—
Cobalt	5	1350	04/25/01	F	1	0	—	[0.37]	—	—	50	0/1

Table D-3 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Cobalt	5	1350	04/25/01	NF	1	1	0.41	—	—	—	—	—
Copper	5	1350	04/25/01	F	1	0	—	[0.27]	1300	0/1	1000	0/1
Copper	5	1350	04/25/01	NF	1	0	—	[0.27]	—	—	—	—
Fluoride	5	1350	04/25/01	F	1	1	450	—	4000	0/1	1600	0/1
Iron	5	1350	04/25/01	F	1	0	—	[210]	300	0/1	1000	0/1
Iron	5	1350	04/25/01	NF	1	1	320	—	—	—	—	—
Lead	5	1350	04/25/01	F	1	0	—	[0.181]	15	0/1	50	0/1
Lead	5	1350	04/25/01	NF	1	0	—	[0.176]	—	—	—	—
Magnesium	5	1350	04/25/01	F	1	1	2200	—	—	—	—	—
Magnesium	5	1350	04/25/01	NF	1	1	2200	—	—	—	—	—
Manganese	5	1350	04/25/01	F	1	1	230	—	50	1/1	200	1/1
Manganese	5	1350	04/25/01	NF	1	1	220	—	—	—	—	—
Mercury	5	1350	04/25/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	5	1350	04/25/01	NF	1	0	—	[0.033]	—	—	2	0/1
Nickel	5	1350	04/25/01	F	1	1	1.7	—	100	0/1	200	0/1
Nickel	5	1350	04/25/01	NF	1	1	3.6	—	—	—	—	—
Nitrate + Nitrite (as N)	5	1350	04/25/01	F	1	0	—	[100]	10000	0/1	—	—
Potassium	5	1350	04/25/01	F	1	1	2900	—	—	—	—	—
Potassium	5	1350	04/25/01	NF	1	1	2100	—	—	—	—	—
Selenium	5	1350	04/25/01	F	1	0	—	[1.9]	50	0/1	50	0/1
Selenium	5	1350	04/25/01	NF	1	0	—	[1.9]	—	—	—	—
Silver	5	1350	04/25/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Silver	5	1350	04/25/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	5	1350	04/25/01	F	1	1	26000	—	—	—	—	—
Sodium	5	1350	04/25/01	NF	1	1	27000	—	—	—	—	—
Sulfate	5	1350	04/25/01	F	1	0	—	[1000]	250000	0/1	600000	0/1
Thallium	5	1350	04/25/01	F	1	1	0.219	—	2	0/1	—	—
Thallium	5	1350	04/25/01	NF	1	1	0.385	—	—	—	—	—
Uranium	5	1350	04/25/01	F	1	1	0.051	—	—	—	—	—
Uranium	5	1350	04/25/01	NF	1	1	0.065	—	—	—	—	—
Vanadium	5	1350	04/25/01	F	1	0	—	[0.38]	—	—	—	—
Vanadium	5	1350	04/25/01	NF	1	0	—	[0.38]	—	—	—	—

Table D-3 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Zinc	5	1350	04/25/01	F	1	1	1.1	—	5000	0/1	10000	0/1
Zinc	5	1350	04/25/01	NF	1	1	3.3	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-4
Regional Well CdV-R-15-3 Screen 6 Second Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	6	1640	04/25/01	NF[e]	1	1	77000	—[f]	—	—	—	—
pH	6	1640	04/25/01	NF	1	1	7.27	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	6	1640	04/25/01	NF	1	1	186	—	—	0/1	—	0/1
Temperature (°C)	6	1640	04/25/01	NF	1	1	17.5	—	—	0/1	—	0/1
Turbidity (NTU)[g]	6	1640	04/25/01	NF	1	1	1.1	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	6	1640	04/25/01	F[h]	1	1	93000	—	—	—	—	—
Aluminum	6	1640	04/25/01	F	1	0	—	[7.6]	50	0/1	5000	0/1
Aluminum	6	1640	04/25/01	NF	1	1	18	—	—	—	—	—
Antimony	6	1640	04/25/01	F	1	0	—	[0.153]	6	0/1	—	—
Antimony	6	1640	04/25/01	NF	1	0	—	[0.153]	—	—	—	—
Arsenic	6	1640	04/25/01	F	1	0	—	[1.5]	50	0/1	100	0/1
Arsenic	6	1640	04/25/01	NF	1	1	2.1	—	—	—	—	—
Barium	6	1640	04/25/01	F	1	1	28	—	2000	0/1	1000	0/1
Barium	6	1640	04/25/01	NF	1	1	30	—	—	—	—	—
Beryllium	6	1640	04/25/01	F	1	0	—	[0.012]	4	0/1	—	—
Beryllium	6	1640	04/25/01	NF	1	0	—	[0.012]	—	—	—	—
Boron	6	1640	04/25/01	F	1	1	20	—	—	—	750	0/1
Boron	6	1640	04/25/01	NF	1	1	18	—	—	—	—	—
Cadmium	6	1640	04/25/01	F	1	0	—	[0.066]	5	0/1	10	0/1
Cadmium	6	1640	04/25/01	NF	1	0	—	[0.066]	—	—	—	—
Calcium	6	1640	04/25/01	F	1	1	12000	—	—	—	—	—
Calcium	6	1640	04/25/01	NF	1	1	12000	—	—	—	—	—
Chloride	6	1640	04/25/01	F	1	1	2000	—	250000	0/1	250000	0/1
Chromium (total)	6	1640	04/25/01	F	1	0	—	[0.21]	100	0/1	50	0/1
Chromium (total)	6	1640	04/25/01	NF	1	0	—	[0.21]	—	—	—	—
Cobalt	6	1640	04/25/01	F	1	1	0.56	—	—	—	50	0/1

Table D-4 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Cobalt	6	1640	04/25/01	NF	1	1	0.45	—	—	—	—	—
Copper	6	1640	04/25/01	F	1	0	—	[0.27]	1300	0/1	1000	0/1
Copper	6	1640	04/25/01	NF	1	0	—	[0.27]	—	—	—	—
Fluoride	6	1640	04/25/01	F	1	1	180	—	4000	0/1	1600	0/1
Iron	6	1640	04/25/01	F	1	1	1500	—	300	1/1	1000	1/1
Iron	6	1640	04/25/01	NF	1	1	1700	—	—	—	—	—
Lead	6	1640	04/25/01	F	1	0	—	[0.076]	15	0/1	50	0/1
Lead	6	1640	04/25/01	NF	1	0	—	[0.081]	—	—	—	—
Magnesium	6	1640	04/25/01	F	1	1	3500	—	—	—	—	—
Magnesium	6	1640	04/25/01	NF	1	1	3500	—	—	—	—	—
Manganese	6	1640	04/25/01	F	1	1	480	—	50	1/1	200	1/1
Manganese	6	1640	04/25/01	NF	1	1	480	—	—	—	—	—
Mercury	6	1640	04/25/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	6	1640	04/25/01	NF	1	0	—	[0.033]	—	—	2	0/1
Nickel	6	1640	04/25/01	F	1	1	1.4	—	100	0/1	200	0/1
Nickel	6	1640	04/25/01	NF	1	1	2	—	—	—	—	—
Nitrate + Nitrite (as N)	6	1640	04/25/01	F	1	0	—	[28000]	10000	0/1	—	—
Potassium	6	1640	04/25/01	F	1	1	2200	—	—	—	—	—
Potassium	6	1640	04/25/01	NF	1	1	2200	—	—	—	—	—
Selenium	6	1640	04/25/01	F	1	0	—	[1.9]	50	0/1	50	0/1
Selenium	6	1640	04/25/01	NF	1	0	—	[1.9]	—	—	—	—
Silver	6	1640	04/25/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Silver	6	1640	04/25/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	6	1640	04/25/01	F	1	1	16000	—	—	—	—	—
Sodium	6	1640	04/25/01	NF	1	1	16000	—	—	—	—	—
Sulfate	6	1640	04/25/01	F	1	0	—	[1000]	250000	0/1	600000	0/1
Thallium	6	1640	04/25/01	F	1	1	0.12	—	2	0/1	—	—
Thallium	6	1640	04/25/01	NF	1	1	0.162	—	—	—	—	—
Uranium	6	1640	04/25/01	F	1	1	0.024	—	—	—	—	—
Uranium	6	1640	04/25/01	NF	1	1	0.02	—	—	—	—	—
Vanadium	6	1640	04/25/01	F	1	0	—	[0.38]	—	—	—	—
Vanadium	6	1640	04/25/01	NF	1	0	—	[0.38]	—	—	—	—

Table D-4 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Zinc	6	1640	04/25/01	F	1	1	3.4	—	5000	0/1	10000	0/1
Zinc	6	1640	04/25/01	NF	1	1	1.3	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-5
Regional Well CdV-R-15-3 Screen 4 Second Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
No organic detects	4	1254	04/23/01	—[e]	—	—	—	—	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] — = Not available or applicable.

Table D-6
Regional Well CdV-R-15-3 Screen 5 Second Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
No organic detects	5	1350	04/25/01	—[e]	—	—	—	—	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] — = Not available or applicable.

Table D-7
Regional Well CdV-R-15-3 Screen 6 Second Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
No organic detects	6	1640	04/25/01	—[e]	—	—	—	—	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] — = Not available or applicable.

Table D-8
Regional Well CdV-R-15-3 Screen 4 Second Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
No radionuclide chemistry ordered	4	1254	04/23/01	—[c]	—	—	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] — = Not available or applicable.

Table D-9
Regional Well CdV-R-15-3 Screen 5 Second Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
No radionuclide chemistry ordered	5	1350	04/25/01	—[c]	—	—	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] — = Not available or applicable.

Table D-10
Regional Well CdV-R-15-3 Screen 6 Second Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
No radionuclide chemistry ordered	6	1640	04/25/01	—[c]	—	—	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] — = Not available or applicable.

Table D-11
Regional Well CdV-R-15-3 Screen 4 Third Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	4	1254	07/18/01	NF[e]	1	1	28000	—[f]	—	—	—	—
pH	4	1254	07/18/01	NF	1	1	6.96	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	4	1254	07/18/01	NF	1	1	120	—	—	0/1	—	0/1
Temperature (°C)	4	1254	07/18/01	NF	1	1	18.3	—	—	0/1	—	0/1
Turbidity (NTU)[g]	4	1254	07/18/01	NF	1	1	0.8	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	4	1254	07/18/01	F[h]	1	1	60000	—	—	—	—	—
Aluminum	4	1254	07/18/01	F	1	0	—	[5.7]	50	0/1	5000	0/1
Aluminum	4	1254	07/18/01	NF	1	0	—	[5.7]	—	—	—	—
Antimony	4	1254	07/18/01	F	1	0	—	[0.043]	6	0/1	—	—
Antimony	4	1254	07/18/01	NF	1	0	—	[0.054]	—	—	—	—
Arsenic	4	1254	07/18/01	F	1	0	—	[2]	50	0/1	100	0/1
Arsenic	4	1254	07/18/01	NF	1	1	2.3	—	—	—	—	—
Barium	4	1254	07/18/01	F	1	1	20	—	2000	0/1	1000	0/1
Barium	4	1254	07/18/01	NF	1	1	20	—	—	—	—	—
Beryllium	4	1254	07/18/01	F	1	0	—	[0.003]	4	0/1	—	—
Beryllium	4	1254	07/18/01	NF	1	1	0.005	—	—	—	—	—
Boron	4	1254	07/18/01	F	1	1	6.8	—	—	—	750	0/1
Boron	4	1254	07/18/01	NF	1	1	8	—	—	—	—	—
Bromide	4	1254	07/18/01	F	1	0	—	[20]	—	—	—	—
Cadmium	4	1254	07/18/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	4	1254	07/18/01	NF	1	0	—	[0.017]	—	—	—	—
Calcium	4	1254	07/18/01	F	1	1	9600	—	—	—	—	—
Calcium	4	1254	07/18/01	NF	1	1	9600	—	—	—	—	—
Chloride	4	1254	07/18/01	F	1	1	1800	—	250000	0/1	250000	0/1

Table D-11 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Chromium (total)	4	1254	07/18/01	F	1	1	0.67	—	100	0/1	50	0/1
Chromium (total)	4	1254	07/18/01	NF	1	1	1.3	—	—	—	—	—
Cobalt	4	1254	07/18/01	F	1	0	—	[0.29]	—	—	50	0/1
Cobalt	4	1254	07/18/01	NF	1	0	—	[0.29]	—	—	—	—
Copper	4	1254	07/18/01	F	1	0	—	[0.35]	1300	0/1	1000	0/1
Copper	4	1254	07/18/01	NF	1	0	—	[0.35]	—	—	—	—
Fluoride	4	1254	07/18/01	F	1	1	100	—	4000	0/1	1600	0/1
Iron	4	1254	07/18/01	F	1	0	—	[100]	300	0/1	1000	0/1
Iron	4	1254	07/18/01	NF	1	0	—	[140]	—	—	—	—
Lead	4	1254	07/18/01	F	1	0	—	[0.105]	15	0/1	50	0/1
Lead	4	1254	07/18/01	NF	1	0	—	[0.175]	—	—	—	—
Magnesium	4	1254	07/18/01	F	1	1	3200	—	—	—	—	—
Magnesium	4	1254	07/18/01	NF	1	1	3200	—	—	—	—	—
Manganese	4	1254	07/18/01	F	1	1	16	—	50	0/1	200	0/1
Manganese	4	1254	07/18/01	NF	1	1	16	—	—	—	—	—
Mercury	4	1254	07/18/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	4	1254	07/18/01	NF	1	0	—	[0.033]	—	—	2	0/1
Nickel	4	1254	07/18/01	F	1	1	1.2	—	100	0/1	200	0/1
Nickel	4	1254	07/18/01	NF	1	1	1.6	—	—	—	—	—
Nitrate + Nitrite (as N)	4	1254	07/18/01	F	1	1	64	—	10000	0/1	—	—
Oxalate	4	1254	07/18/01	F	1	0	—	[190]	—	—	—	—
Perchlorate	4	1254	07/18/01	F	1	0	—	[0.958]	—	—	—	—
Potassium	4	1254	07/18/01	F	1	0	—	[1500]	—	—	—	—
Potassium	4	1254	07/18/01	NF	1	1	2000	—	—	—	—	—
Selenium	4	1254	07/18/01	F	1	0	—	[2.1]	50	0/1	50	0/1
Selenium	4	1254	07/18/01	NF	1	1	2.6	—	—	—	—	—
Silver	4	1254	07/18/01	F	1	1	0.42	—	100	0/1	50	0/1
Silver	4	1254	07/18/01	NF	1	0	—	[0.41]	—	—	—	—

Table D-11 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Sodium	4	1254	07/18/01	F	1	1	9600	—	—	—	—	—
Sodium	4	1254	07/18/01	NF	1	1	9500	—	—	—	—	—
Sulfate	4	1254	07/18/01	F	1	1	1600	—	250000	0/1	600000	0/1
Thallium	4	1254	07/18/01	F	1	0	—	[0.154]	2	0/1	—	—
Thallium	4	1254	07/18/01	NF	1	0	—	[0.154]	—	—	—	—
Uranium	4	1254	07/18/01	F	1	1	0.475	—	—	—	—	—
Uranium	4	1254	07/18/01	NF	1	1	0.475	—	—	—	—	—
Vanadium	4	1254	07/18/01	F	1	1	4	—	—	—	—	—
Vanadium	4	1254	07/18/01	NF	1	1	4.3	—	—	—	—	—
Zinc	4	1254	07/18/01	F	1	0	—	[0.4]	5000	0/1	10000	0/1
Zinc	4	1254	07/18/01	NF	1	1	2.6	—	—	—	—	—
Stable Isotope (‰)												
δD/H	4	1254	07/18/01	NF	1	1	-87	—	—	—	—	—
$\delta O^{18}/O^{16}$	4	1254	07/18/01	NF	1	1	-11.8	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-12
Regional Well CdV-R-15-3 Screen 5 Third Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	5	1350	07/19/01	NF[e]	1	1	27000	—[f]	—	—	—	—
pH	5	1350	07/19/01	NF	1	1	7.36	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	5	1350	07/19/01	NF	1	1	173	—	—	0/1	—	0/1
Temperature (°C)	5	1350	07/19/01	NF	1	1	19.0	—	—	0/1	—	0/1
Turbidity (NTU)[g]	5	1350	07/19/01	NF	1	1	2.7	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	5	1350	07/19/01	F[h]	1	1	97000	—	—	—	—	—
Aluminum	5	1350	07/19/01	F	1	0	—	[5.7]	50	0/1	5000	0/1
Aluminum	5	1350	07/19/01	NF	1	0	—	[9.4]	—	—	—	—
Antimony	5	1350	07/19/01	F	1	0	—	[0.043]	6	0/1	—	—
Antimony	5	1350	07/19/01	NF	1	0	—	[0.043]	—	—	—	—
Arsenic	5	1350	07/19/01	F	1	0	—	[2]	50	0/1	100	0/1
Arsenic	5	1350	07/19/01	NF	1	1	4.9	—	—	—	—	—
Barium	5	1350	07/19/01	F	1	1	120	—	2000	0/1	1000	0/1
Barium	5	1350	07/19/01	NF	1	1	130	—	—	—	—	—
Beryllium	5	1350	07/19/01	F	1	1	0.008	—	4	0/1	—	—
Beryllium	5	1350	07/19/01	NF	1	0	—	[0.003]	—	—	—	—
Boron	5	1350	07/19/01	F	1	1	13	—	—	—	750	0/1
Boron	5	1350	07/19/01	NF	1	1	17	—	—	—	—	—
Bromide	5	1350	07/19/01	F	1	0	—	[20]	—	—	—	—
Cadmium	5	1350	07/19/01	F	1	0	—	[0.017]	5	0/1	10	0/1
Cadmium	5	1350	07/19/01	NF	1	0	—	[0.017]	—	—	—	—
Calcium	5	1350	07/19/01	F	1	1	15000	—	—	—	—	—
Calcium	5	1350	07/19/01	NF	1	1	16000	—	—	—	—	—
Chloride	5	1350	07/19/01	F	1	1	2400	—	250000	0/1	250000	0/1

Table D-12 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Chromium (total)	5	1350	07/19/01	F	1	1	0.65	—	100	0/1	50	0/1
Chromium (total)	5	1350	07/19/01	NF	1	0	—	[0.35]	—	—	—	—
Cobalt	5	1350	07/19/01	F	1	0	—	[0.29]	—	—	50	0/1
Cobalt	5	1350	07/19/01	NF	1	0	—	[0.29]	—	—	—	—
Copper	5	1350	07/19/01	F	1	0	—	[0.35]	1300	0/1	1000	0/1
Copper	5	1350	07/19/01	NF	1	0	—	[0.35]	—	—	—	—
Fluoride	5	1350	07/19/01	F	1	1	310	—	4000	0/1	1600	0/1
Iron	5	1350	07/19/01	F	1	0	—	[290]	300	0/1	1000	0/1
Iron	5	1350	07/19/01	NF	1	1	390	—	—	—	—	—
Lead	5	1350	07/19/01	F	1	0	—	[0.224]	15	0/1	50	0/1
Lead	5	1350	07/19/01	NF	1	0	—	[0.265]	—	—	—	—
Magnesium	5	1350	07/19/01	F	1	1	2100	—	—	—	—	—
Magnesium	5	1350	07/19/01	NF	1	1	2100	—	—	—	—	—
Manganese	5	1350	07/19/01	F	1	1	280	—	50	1/1	200	1/1
Manganese	5	1350	07/19/01	NF	1	1	280	—	—	—	—	—
Mercury	5	1350	07/19/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	5	1350	07/19/01	NF	1	0	—	[0.033]	—	—	2	0/1
Nickel	5	1350	07/19/01	F	1	0	—	[0.8]	100	0/1	200	0/1
Nickel	5	1350	07/19/01	NF	1	0	—	[0.8]	—	—	—	—
Nitrate + Nitrite (as N)	5	1350	07/19/01	F	1	0	—	[50]	10000	0/1	—	—
Oxalate	5	1350	07/19/01	F	1	0	—	[190]	—	—	—	—
Perchlorate	5	1350	07/19/01	F	1	0	—	[0.958]	—	—	—	—
Potassium	5	1350	07/19/01	F	1	1	2000	—	—	—	—	—
Potassium	5	1350	07/19/01	NF	1	1	2000	—	—	—	—	—
Selenium	5	1350	07/19/01	F	1	0	—	[2.1]	50	0/1	50	0/1
Selenium	5	1350	07/19/01	NF	1	0	—	[2.1]	—	—	—	—
Silver	5	1350	07/19/01	F	1	0	—	[0.41]	100	0/1	50	0/1
Silver	5	1350	07/19/01	NF	1	0	—	[0.41]	—	—	—	—
Sodium	5	1350	07/19/01	F	1	1	18000	—	—	—	—	—
Sodium	5	1350	07/19/01	NF	1	1	20000	—	—	—	—	—

Table D-12 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Sulfate	5	1350	07/19/01	F	1	0	—	[1000]	250000	0/1	600000	0/1
Thallium	5	1350	07/19/01	F	1	0	—	[0.138]	2	0/1	—	—
Thallium	5	1350	07/19/01	NF	1	0	—	[0.143]	—	—	—	—
Uranium	5	1350	07/19/01	F	1	1	0.233	—	—	—	—	—
Uranium	5	1350	07/19/01	NF	1	1	0.132	—	—	—	—	—
Vanadium	5	1350	07/19/01	F	1	0	—	[0.41]	—	—	—	—
Vanadium	5	1350	07/19/01	NF	1	0	—	[0.41]	—	—	—	—
Zinc	5	1350	07/19/01	F	1	1	11	—	5000	0/1	10000	0/1
Zinc	5	1350	07/19/01	NF	1	0	—	[0.4]	—	—	—	—
Stable Isotope (‰)												
$\delta O^{18}/O^{16}$	5	1350	07/19/01	NF	1	1	-11.6	—	—	—	—	—
δD/H	5	1350	07/19/01	NF	1	1	-82	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-13
Regional Well CdV-R-15-3 Screen 6 Third Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	6	1640	07/20/01	NF[e]	1	1	33000	—[f]	—	—	—	—
pH	6	1640	07/20/01	NF	1	1	7.27	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	6	1640	07/20/01	NF	1	1	167	—	—	0/1	—	0/1
Temperature (°C)	6	1640	07/20/01	NF	1	1	19.5	—	—	0/1	—	0/1
Turbidity (NTU)[g]	6	1640	07/20/01	NF	1	1	0.9	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	6	1640	07/20/01	F[h]	1	1	80000	—	—	—	—	—
Aluminum	6	1640	07/20/01	F	1	1	94	—	50	1/1	5000	0/1
Aluminum	6	1640	07/20/01	NF	1	1	270	—	—	—	—	—
Antimony	6	1640	07/20/01	F	1	0	—	[0.587]	6	0/1	—	—
Antimony	6	1640	07/20/01	NF	1	0	—	[0.578]	—	—	—	—
Arsenic	6	1640	07/20/01	F	1	0	—	[2]	50	0/1	100	0/1
Arsenic	6	1640	07/20/01	NF	1	0	—	[2]	—	—	—	—
Barium	6	1640	07/20/01	F	1	1	26	—	2000	0/1	1000	0/1
Barium	6	1640	07/20/01	NF	1	1	24	—	—	—	—	—
Beryllium	6	1640	07/20/01	F	1	1	0.153	—	4	0/1	—	—
Beryllium	6	1640	07/20/01	NF	1	1	0.129	—	—	—	—	—
Boron	6	1640	07/20/01	F	1	0	—	[23]	—	—	750	0/1
Boron	6	1640	07/20/01	NF	1	1	44	—	—	—	—	—
Bromide	6	1640	07/20/01	F	1	0	—	[20]	—	—	—	—
Cadmium	6	1640	07/20/01	F	1	1	0.146	—	5	0/1	10	0/1
Cadmium	6	1640	07/20/01	NF	1	1	0.145	—	—	—	—	—
Calcium	6	1640	07/20/01	F	1	1	11000	—	—	—	—	—
Calcium	6	1640	07/20/01	NF	1	1	12000	—	—	—	—	—
Chloride	6	1640	07/20/01	F	1	1	2200	—	250000	0/1	250000	0/1

Table D-13 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Chromium (total)	6	1640	07/20/01	F	1	0	—	[0.35]	100	0/1	50	0/1
Chromium (total)	6	1640	07/20/01	NF	1	1	2.4	—	—	—	—	—
Cobalt	6	1640	07/20/01	F	1	0	—	[0.29]	—	—	50	0/1
Cobalt	6	1640	07/20/01	NF	1	1	0.33	—	—	—	—	—
Copper	6	1640	07/20/01	F	1	0	—	[0.35]	1300	0/1	1000	0/1
Copper	6	1640	07/20/01	NF	1	0	—	[0.35]	—	—	—	—
Fluoride	6	1640	07/20/01	F	1	1	110	—	4000	0/1	1600	0/1
Iron	6	1640	07/20/01	F	1	1	1400	—	300	1/1	1000	1/1
Iron	6	1640	07/20/01	NF	1	1	1400	—	—	—	—	—
Lead	6	1640	07/20/01	F	1	1	0.15	—	15	0/1	50	0/1
Lead	6	1640	07/20/01	NF	1	1	0.106	—	—	—	—	—
Magnesium	6	1640	07/20/01	F	1	1	3400	—	—	—	—	—
Magnesium	6	1640	07/20/01	NF	1	1	3400	—	—	—	—	—
Manganese	6	1640	07/20/01	F	1	1	450	—	50	1/1	200	1/1
Manganese	6	1640	07/20/01	NF	1	1	420	—	—	—	—	—
Mercury	6	1640	07/20/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	6	1640	07/20/01	NF	1	0	—	[0.033]	—	—	2	0/1
Nickel	6	1640	07/20/01	F	1	1	1.3	—	100	0/1	200	0/1
Nickel	6	1640	07/20/01	NF	1	1	3.2	—	—	—	—	—
Nitrate + Nitrite (as N)	6	1640	07/20/01	F	1	0	—	[50]	10000	0/1	—	—
Oxalate	6	1640	07/20/01	F	1	0	—	[190]	—	—	—	—
Perchlorate	6	1640	07/20/01	F	1	0	—	[0.958]	—	—	—	—
Potassium	6	1640	07/20/01	F	1	0	—	[2300]	—	—	—	—
Potassium	6	1640	07/20/01	NF	1	1	2500	—	—	—	—	—
Selenium	6	1640	07/20/01	F	1	0	—	[2.1]	50	0/1	50	0/1
Selenium	6	1640	07/20/01	NF	1	0	—	[2.1]	—	—	—	—
Silver	6	1640	07/20/01	F	1	0	—	[0.41]	100	0/1	50	0/1
Silver	6	1640	07/20/01	NF	1	0	—	[0.41]	—	—	—	—

Table D-13 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Sodium	6	1640	07/20/01	F	1	1	14000	—	—	—	—	—
Sodium	6	1640	07/20/01	NF	1	1	13000	—	—	—	—	—
Sulfate	6	1640	07/20/01	F	1	0	—	[1000]	250000	0/1	600000	0/1
Thallium	6	1640	07/20/01	F	1	1	0.622	—	2	0/1	—	—
Thallium	6	1640	07/20/01	NF	1	1	0.597	—	—	—	—	—
Uranium	6	1640	07/20/01	F	1	1	0.149	—	—	—	—	—
Uranium	6	1640	07/20/01	NF	1	1	0.151	—	—	—	—	—
Vanadium	6	1640	07/20/01	F	1	0	—	[0.41]	—	—	—	—
Vanadium	6	1640	07/20/01	NF	1	0	—	[0.41]	—	—	—	—
Zinc	6	1640	07/20/01	F	1	1	1.6	—	5000	0/1	10000	0/1
Zinc	6	1640	07/20/01	NF	1	1	11	—	—	—	—	—
Stable Isotope (‰)												
$\delta O^{18}/O^{16}$	6	1640	07/20/01	NF	1	1	-11.6	—	—	—	—	—
δD/H	6	1640	07/20/01	NF	1	1	-80	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-14
Regional Well CdV-R-15-3 Screen 4 Third Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
No organic detects	4	1254	07/18/01	—[e]	—	—	—	—	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] — = Not available or applicable.

Table D-15
Regional Well CdV-R-15-3 Screen 5 Third Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acetone	5	1350	07/19/01	NF[e]	1	1	17	—[f]	—	—	—	—
Total Organic Carbon	5	1350	07/19/01	NF	1	1	4500	—	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] NF = Nonfiltered.
[f] — = Not available or applicable.

Table D-16
Regional Well CdV-R-15-3 Screen 6 Third Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acetone	6	1640	07/20/01	NF[e]	1	1	7.9	—[f]	—	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] NF = Nonfiltered.
[f] — = Not available or applicable.

Table D-17
Regional Well CdV-R-15-3 Screen 4 Third Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	4	1254	07/18/01	F[c]	1	0	—[d]	[0.006]	15[e]	0/1
Cesium-134	4	1254	07/18/01	F	1	0	—	[0.5]	—	—
Cesium-137	4	1254	07/18/01	F	1	0	—	[-9.7]	—	—
Cobalt-60	4	1254	07/18/01	F	1	0	—	[2]	—	—
Europium-152	4	1254	07/18/01	F	1	0	—	[-44]	—	—
Gross Alpha Radiation	4	1254	07/18/01	NF[f]	1	0	—	[-0.24]	—	—
Gross Beta Radiation	4	1254	07/18/01	NF	1	0	—	[0.14]	—	—
Gross Gamma Radiation	4	1254	07/18/01	NF	1	1	117	—	—	—
Plutonium-238	4	1254	07/18/01	F	1	0	—	[0.009]	15[e]	0/1
Plutonium-239	4	1254	07/18/01	F	1	0	—	[-0.002]	15[e]	0/1
Ruthenium-106	4	1254	07/18/01	F	1	0	—	[-5]	—	—
Sodium-22	4	1254	07/18/01	F	1	0	—	[-2.1]	—	—
Strontium-90	4	1254	07/18/01	F	1	0	—	[-0.1]	8	0/1
Tritium	4	1254	07/18/01	NF	1	1	1.47	—	20000	0/1
Uranium-234	4	1254	07/18/01	F	1	1	0.34	—	—	—
Uranium-235	4	1254	07/18/01	F	1	0	—	[0.057]	—	—
Uranium-238	4	1254	07/18/01	F	1	1	0.2	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] F = Filtered.

[d] — = Not available or applicable.

[e] Based on an MCL of 15 pCi/L for gross alpha particle activity (including radium, but excluding radon and uranium).

[f] NF = Nonfiltered.

Table D-18
Regional Well CdV-R-15-3 Screen 5 Third Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	5	1350	07/19/01	F[c]	1	0	—[d]	[0.005]	15[e]	0/1
Cesium-134	5	1350	07/19/01	F	1	0	—	[-0.5]	—	—
Cesium-137	5	1350	07/19/01	F	1	0	—	[1.9]	—	—
Cobalt-60	5	1350	07/19/01	F	1	0	—	[-3]	—	—
Europium-152	5	1350	07/19/01	F	1	0	—	[61]	—	—
Gross Alpha Radiation	5	1350	07/19/01	NF[f]	1	0	—	[0.83]	—	—
Gross Beta Radiation	5	1350	07/19/01	NF	1	1	1.67	—	—	—
Gross Gamma Radiation	5	1350	07/19/01	NF	1	1	121	—	—	—
Plutonium-238	5	1350	07/19/01	F	1	0	—	[0]	15[e]	0/1
Plutonium-239	5	1350	07/19/01	F	1	0	—	[0]	15[e]	0/1
Ruthenium-106	5	1350	07/19/01	F	1	0	—	[-11]	—	—
Sodium-22	5	1350	07/19/01	F	1	0	—	[1]	—	—
Strontium-90	5	1350	07/19/01	F	1	0	—	[0]	8	0/1
Tritium	5	1350	07/19/01	NF	1	0	—	[0.22]	20000	0/1
Uranium-234	5	1350	07/19/01	F	1	1	0.176	—	—	—
Uranium-235	5	1350	07/19/01	F	1	0	—	[0.056]	—	—
Uranium-238	5	1350	07/19/01	F	1	1	0.097	—	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] F = Filtered.
[d] — = Not available or applicable.
[e] Based on an MCL of 15 pCi/L for gross alpha particle activity (including radium, but excluding radon and uranium).
[f] NF = Nonfiltered.

Table D-19
Regional Well CdV-R-15-3 Screen 6 Third Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	6	1640	07/20/01	F[c]	1	0	—[d]	[-0.003]	15[e]	0/1
Cesium-134	6	1640	07/20/01	F	1	0	—	[0.4]	—	—
Cesium-137	6	1640	07/20/01	F	1	0	—	[-0.9]	—	—
Cobalt-60	6	1640	07/20/01	F	1	0	—	[-3.1]	—	—
Europium-152	6	1640	07/20/01	F	1	0	—	[-3]	—	—
Gross Alpha Radiation	6	1640	07/20/01	NF[f]	1	0	—	[0.5]	—	—
Gross Beta Radiation	6	1640	07/20/01	NF	1	0	—	[1.6]	—	—
Gross Gamma Radiation	6	1640	07/20/01	NF	1	1	147	—	—	—
Plutonium-238	6	1640	07/20/01	F	1	0	—	[-0.002]	15[e]	0/1
Plutonium-239	6	1640	07/20/01	F	1	0	—	[-0.002]	15[e]	0/1
Ruthenium-106	6	1640	07/20/01	F	1	0	—	[4]	—	—
Sodium-22	6	1640	07/20/01	F	1	0	—	[-0.6]	—	—
Strontium-90	6	1640	07/20/01	F	1	0	—	[1.03]	8	0/1
Tritium	6	1640	07/20/01	NF	1	0	—	[0.1]	20000	0/1
Uranium-234	6	1640	07/20/01	F	1	0	—	[0.031]	—	—
Uranium-235	6	1640	07/20/01	F	1	0	—	[0.008]	—	—
Uranium-238	6	1640	07/20/01	F	1	0	—	[0.039]	—	—

[a] The static water level for the regional aquifer at CdV-R-15-3, when the well was drilled, was 1246 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] F = Filtered.
[d] — = Not available or applicable.
[e] Based on an MCL of 15 pCi/L for gross alpha particle activity (including radium, but excluding radon and uranium).
[f] NF = Nonfiltered.

Table D-20

Regional Well R-22 Screen 1 Second Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	1	906	06/19/01	NF[e]	1	1	151000	—[f]	—	—	—	—
pH	1	906	06/19/01	NF	1	1	6.93	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	1	906	06/19/01	NF	1	1	495	—	—	0/1	—	0/1
Temperature (°C)	1	906	06/19/01	NF	1	1	23.0	—	—	0/1	—	0/1
Turbidity (NTU)[g]	1	906	06/19/01	NF	1	1	4.0	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	1	906	06/19/01	F[h]	1	1	250000	—	—	—	—	—
Aluminum	1	906	06/19/01	F	1	0	—	[7.6]	50	0/1	5000	0/1
Aluminum	1	906	06/19/01	NF	1	0	—	[7.6]	—	—	—	—
Ammonia (as N)	1	906	06/19/01	F	1	1	700	—	—	—	—	—
Antimony	1	906	06/19/01	F	1	0	—	[0.153]	6	0/1	—	—
Antimony	1	906	06/19/01	NF	1	0	—	[0.153]	—	—	—	—
Arsenic	1	906	06/19/01	F	1	0	—	[1.5]	50	0/1	100	0/1
Arsenic	1	906	06/19/01	NF	1	0	—	[1.5]	—	—	—	—
Barium	1	906	06/19/01	F	1	1	160	—	2000	0/1	1000	0/1
Barium	1	906	06/19/01	NF	1	1	180	—	—	—	—	—
Beryllium	1	906	06/19/01	F	1	0	—	[0.012]	4	0/1	—	—
Beryllium	1	906	06/19/01	NF	1	0	—	[0.012]	—	—	—	—
Boron	1	906	06/19/01	F	1	0	—	[33]	—	—	750	0/1
Boron	1	906	06/19/01	NF	1	0	—	[35]	—	—	—	—
Bromide	1	906	06/19/01	F	1	0	—	[200]	—	—	—	—
Cadmium	1	906	06/19/01	F	1	0	—	[0.066]	5	0/1	10	0/1
Cadmium	1	906	06/19/01	NF	1	0	—	[0.066]	—	—	—	—
Calcium	1	906	06/19/01	F	1	1	55000	—	—	—	—	—
Calcium	1	906	06/19/01	NF	1	1	55000	—	—	—	—	—
Chloride	1	906	06/19/01	F	1	1	3900	—	250000	0/1	250000	0/1

Table D-20 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Chromium (total)	1	906	06/19/01	F	1	0	—	[0.21]	100	0/1	50	0/1
Chromium (total)	1	906	06/19/01	NF	1	1	1.5	—	—	—	—	—
Cobalt	1	906	06/19/01	F	1	1	0.59	—	—	—	50	0/1
Cobalt	1	906	06/19/01	NF	1	0	—	[0.37]	—	—	—	—
Copper	1	906	06/19/01	F	1	0	—	[0.27]	1300	0/1	1000	0/1
Copper	1	906	06/19/01	NF	1	0	—	[0.27]	—	—	—	—
Cyanide (total)	1	906	06/19/01	NF	1	0	—	[10]	—	—	—	—
Fluoride	1	906	06/19/01	F	1	1	460	—	4000	0/1	1600	0/1
Iron	1	906	06/19/01	F	1	1	9100	—	300	1/1	1000	1/1
Iron	1	906	06/19/01	NF	1	1	16000	—	—	—	—	—
Kjeldahl Nitrogen	1	906	06/19/01	F	1	1	950	—	—	—	—	—
Lead	1	906	06/19/01	F	1	0	—	[1.1]	15	0/1	50	0/1
Lead	1	906	06/19/01	NF	1	0	—	[1.1]	—	—	—	—
Magnesium	1	906	06/19/01	F	1	1	14000	—	—	—	—	—
Magnesium	1	906	06/19/01	NF	1	1	14000	—	—	—	—	—
Manganese	1	906	06/19/01	F	1	1	3100	—	50	1/1	200	1/1
Manganese	1	906	06/19/01	NF	1	1	3100	—	—	—	—	—
Mercury	1	906	06/19/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	1	906	06/19/01	NF	1	0	—	[0.033]	—	—	2	0/1
Molybdenum	1	906	06/19/01	F	1	1	30	—	—	—	—	—
Molybdenum	1	906	06/19/01	NF	1	1	32	—	—	—	—	—
Nickel	1	906	06/19/01	F	1	1	1.3	—	100	0/1	200	0/1
Nickel	1	906	06/19/01	NF	1	1	3.1	—	—	—	—	—
Nitrate + Nitrite (as N)	1	906	06/19/01	F	1	0	—	[50]	10000	0/1	—	—
Perchlorate	1	906	06/19/01	F	1	0	—	[0.958]	—	—	—	—
Phosphorus (as P)	1	906	06/19/01	F	1	0	—	[50]	—	—	—	—
Potassium	1	906	06/19/01	F	1	1	4200	—	—	—	—	—
Potassium	1	906	06/19/01	NF	1	1	4200	—	—	—	—	—
Selenium	1	906	06/19/01	F	1	0	—	[1.9]	50	0/1	50	0/1
Selenium	1	906	06/19/01	NF	1	0	—	[1.9]	—	—	—	—

Table D-20 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
SiO_2	1	906	06/19/01	F	1	1	34240	—	—	—	—	—
SiO_2	1	906	06/19/01	NF	1	1	34240	—	—	—	—	—
Silver	1	906	06/19/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Silver	1	906	06/19/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	1	906	06/19/01	F	1	1	22000	—	—	—	—	—
Sodium	1	906	06/19/01	NF	1	1	21000	—	—	—	—	—
Strontium	1	906	06/19/01	F	1	1	290	—	—	—	—	—
Strontium	1	906	06/19/01	NF	1	1	290	—	—	—	—	—
Sulfate	1	906	06/19/01	F	1	0	—	[1000]	250000	0/1	600000	0/1
Thallium	1	906	06/19/01	F	1	0	—	[0.077]	2	0/1	—	—
Thallium	1	906	06/19/01	NF	1	0	—	[0.077]	—	—	—	—
Uranium	1	906	06/19/01	F	1	1	0.037	—	—	—	—	—
Uranium	1	906	06/19/01	NF	1	1	0.02	—	—	—	—	—
Vanadium	1	906	06/19/01	F	1	1	0.51	—	—	—	—	—
Vanadium	1	906	06/19/01	NF	1	1	0.51	—	—	—	—	—
Zinc	1	906	06/19/01	F	1	0	—	[0.31]	5000	0/1	10000	0/1
Zinc	1	906	06/19/01	NF	1	1	3.9	—	—	—	—	—
Stable Isotope (‰)												
δD/H	1	906	06/19/01	NF	1	1	-76	—	—	—	—	—
$\delta O^{18}/O^{16}$	1	906	06/19/01	NF	1	1	-10.8	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-21
Regional Well R-22 Screen 2 Second Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	2	962	06/20/01	NF[e]	1	1	—[f]	—	—	—	—	—
pH	2	962	06/20/01	NF	1	1	7.68	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	2	962	06/20/01	NF	1	1	148	—	—	0/1	—	0/1
Temperature (°C)	2	962	06/20/01	NF	1	1	22.0	—	—	0/1	—	0/1
Turbidity (NTU)[g]	2	962	06/20/01	NF	1	1	0.6	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	2	962	06/20/01	F[h]	1	1	70000	—	—	—	—	—
Aluminum	2	962	06/20/01	F	1	0	—	[7.6]	50	0/1	5000	0/1
Aluminum	2	962	06/20/01	NF	1	1	11	—	—	—	—	—
Ammonia (as N)	2	962	06/20/01	F	1	0	—	[100]	—	—	—	—
Antimony	2	962	06/20/01	F	1	0	—	[0.288]	6	0/1	—	—
Antimony	2	962	06/20/01	NF	1	0	—	[0.686]	—	—	—	—
Arsenic	2	962	06/20/01	F	1	0	—	[1.5]	50	0/1	100	0/1
Arsenic	2	962	06/20/01	NF	1	0	—	[1.5]	—	—	—	—
Barium	2	962	06/20/01	F	1	1	13	—	2000	0/1	1000	0/1
Barium	2	962	06/20/01	NF	1	1	13	—	—	—	—	—
Beryllium	2	962	06/20/01	F	1	0	—	[0.012]	4	0/1	—	—
Beryllium	2	962	06/20/01	NF	1	0	—	[0.012]	—	—	—	—
Boron	2	962	06/20/01	F	1	0	—	[12]	—	—	750	0/1
Boron	2	962	06/20/01	NF	1	0	—	[14]	—	—	—	—
Bromide	2	962	06/20/01	F	1	0	—	[2000]	—	—	—	—
Cadmium	2	962	06/20/01	F	1	0	—	[0.066]	5	0/1	10	0/1
Cadmium	2	962	06/20/01	NF	1	0	—	[0.066]	—	—	—	—
Calcium	2	962	06/20/01	F	1	1	9600	—	—	—	—	—
Calcium	2	962	06/20/01	NF	1	1	9700	—	—	—	—	—
Chloride	2	962	06/20/01	F	1	1	2600	—	250000	0/1	250000	0/1

Table D-21 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Chromium (total)	2	962	06/20/01	F	1	1	1.3	—	100	0/1	50	0/1
Chromium (total)	2	962	06/20/01	NF	1	1	6.3	—	—	—	—	—
Cobalt	2	962	06/20/01	F	1	0	—	[0.37]	—	—	50	0/1
Cobalt	2	962	06/20/01	NF	1	0	—	[0.37]	—	—	—	—
Copper	2	962	06/20/01	F	1	0	—	[0.27]	1300	0/1	1000	0/1
Copper	2	962	06/20/01	NF	1	0	—	[0.27]	—	—	—	—
Cyanide (total)	2	962	06/20/01	NF	1	0	—	[10]	—	—	—	—
Fluoride	2	962	06/20/01	F	1	1	460	—	4000	0/1	1600	0/1
Iron	2	962	06/20/01	F	1	0	—	[14]	300	0/1	1000	0/1
Iron	2	962	06/20/01	NF	1	0	—	[63]	—	—	—	—
Kjeldahl Nitrogen	2	962	06/20/01	F	1	1	280	—	—	—	—	—
Lead	2	962	06/20/01	F	1	0	—	[1.1]	15	0/1	50	0/1
Lead	2	962	06/20/01	NF	1	0	—	[1.1]	—	—	—	—
Magnesium	2	962	06/20/01	F	1	1	4700	—	—	—	—	—
Magnesium	2	962	06/20/01	NF	1	1	4800	—	—	—	—	—
Manganese	2	962	06/20/01	F	1	1	4	—	50	0/1	200	0/1
Manganese	2	962	06/20/01	NF	1	1	11	—	—	—	—	—
Mercury	2	962	06/20/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	2	962	06/20/01	NF	1	0	—	[0.033]	—	—	2	0/1
Molybdenum	2	962	06/20/01	F	1	0	—	[3.8]	—	—	—	—
Molybdenum	2	962	06/20/01	NF	1	0	—	[3.8]	—	—	—	—
Nickel	2	962	06/20/01	F	1	0	—	[0.3]	100	0/1	200	0/1
Nickel	2	962	06/20/01	NF	1	1	0.98	—	—	—	—	—
Nitrate + Nitrite (as N)	2	962	06/20/01	F	1	1	610	—	10000	0/1	—	—
Perchlorate	2	962	06/20/01	F	1	0	—	[0.958]	—	—	—	—
Phosphorus (as P)	2	962	06/20/01	F	1	0	—	[50]	—	—	—	—
Potassium	2	962	06/20/01	F	1	1	3200	—	—	—	—	—
Potassium	2	962	06/20/01	NF	1	1	3200	—	—	—	—	—
Selenium	2	962	06/20/01	F	1	1	3.4	—	50	0/1	50	0/1
Selenium	2	962	06/20/01	NF	1	0	—	[1.9]	—	—	—	—

Table D-21 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
SiO_2	2	962	06/20/01	F	1	1	64200	—	—	—	—	—
SiO_2	2	962	06/20/01	NF	1	1	64200	—	—	—	—	—
Silver	2	962	06/20/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Silver	2	962	06/20/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	2	962	06/20/01	F	1	1	11000	—	—	—	—	—
Sodium	2	962	06/20/01	NF	1	1	11000	—	—	—	—	—
Strontium	2	962	06/20/01	F	1	1	43	—	—	—	—	—
Strontium	2	962	06/20/01	NF	1	1	44	—	—	—	—	—
Sulfate	2	962	06/20/01	F	1	1	3500	—	250000	0/1	600000	0/1
Thallium	2	962	06/20/01	F	1	0	—	[0.077]	2	0/1	—	—
Thallium	2	962	06/20/01	NF	1	1	0.113	—	—	—	—	—
Uranium	2	962	06/20/01	F	1	1	0.419	—	—	—	—	—
Uranium	2	962	06/20/01	NF	1	1	0.402	—	—	—	—	—
Vanadium	2	962	06/20/01	F	1	1	5	—	—	—	—	—
Vanadium	2	962	06/20/01	NF	1	1	5.3	—	—	—	—	—
Zinc	2	962	06/20/01	F	1	0	—	[0.31]	5000	0/1	10000	0/1
Zinc	2	962	06/20/01	NF	1	1	8.9	—	—	—	—	—
Stable Isotope (‰)												
δD/H	2	962	06/20/01	NF	1	1	-75	—	—	—	—	—
$\delta O^{18}/O^{16}$	2	962	06/20/01	NF	1	1	-11.1	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-22
Regional Well R-22 Screen 3 Second Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	3	1273	06/21/01	NF[e]	1	1	63000	—	—	—	—	—
pH	3	1273	06/21/01	NF	1	1	8.73	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	3	1273	06/21/01	NF	1	1	316	—	—	0/1	—	0/1
Temperature (°C)	3	1273	06/21/01	NF	1	1	24.2	—	—	0/1	—	0/1
Turbidity (NTU)	3	1273	06/21/01	NF	1	1	1.7	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	3	1273	06/21/01	F	1	1	140000	—	—	—	—	—
Aluminum	3	1273	06/21/01	F	1	0	—	[5.7]	50	0/1	5000	0/1
Aluminum	3	1273	06/21/01	NF	1	1	25	—	—	—	—	—
Ammonia (as N)	3	1273	06/21/01	F	1	0	—	[100]	—	—	—	—
Antimony	3	1273	06/21/01	F	1	0	—	[1.29]	6	0/1	—	—
Antimony	3	1273	06/21/01	NF	1	0	—	[0.752]	—	—	—	—
Arsenic	3	1273	06/21/01	F	1	1	3.7	—	50	0/1	100	0/1
Arsenic	3	1273	06/21/01	NF	1	1	4.1	—	—	—	—	—
Barium	3	1273	06/21/01	F	1	1	48	—	2000	0/1	1000	0/1
Barium	3	1273	06/21/01	NF	1	1	56	—	—	—	—	—
Beryllium	3	1273	06/21/01	F	1	1	1.63	—	4	0/1	—	—
Beryllium	3	1273	06/21/01	NF	1	1	0.022	—	—	—	—	—
Boron	3	1273	06/21/01	F	1	1	46	—	—	—	750	0/1
Boron	3	1273	06/21/01	NF	1	1	77	—	—	—	—	—
Bromide	3	1273	06/21/01	F	1	0	—	[200]	—	—	—	—
Cadmium	3	1273	06/21/01	F	1	1	1.18	—	5	0/1	10	0/1
Cadmium	3	1273	06/21/01	NF	1	0	—	[0.066]	—	—	—	—
Calcium	3	1273	06/21/01	F	1	1	10000	—	—	—	—	—
Calcium	3	1273	06/21/01	NF	1	1	13000	—	—	—	—	—
Chloride	3	1273	06/21/01	F	1	1	4000	—	250000	0/1	250000	0/1

Table D-22 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Chromium (total)	3	1273	06/21/01	F	1	1	0.62	—	100	0/1	50	0/1
Chromium (total)	3	1273	06/21/01	NF	1	1	47	—	—	—	—	—
Cobalt	3	1273	06/21/01	F	1	0	—	[0.29]	—	—	50	0/1
Cobalt	3	1273	06/21/01	NF	1	0	—	[0.37]	—	—	—	—
Copper	3	1273	06/21/01	F	1	1	1.2	—	1300	0/1	1000	0/1
Copper	3	1273	06/21/01	NF	1	1	1.1	—	—	—	—	—
Cyanide (total)	3	1273	06/21/01	NF	1	0	—	[10]	—	—	—	—
Fluoride	3	1273	06/21/01	F	1	1	660	—	4000	0/1	1600	0/1
Iron	3	1273	06/21/01	F	1	0	—	[86]	300	0/1	1000	0/1
Iron	3	1273	06/21/01	NF	1	1	320	—	—	—	—	—
Kjeldahl Nitrogen	3	1273	06/21/01	F	1	1	1000	—	—	—	—	—
Lead	3	1273	06/21/01	F	1	1	19.7	—	15	1/1	50	0/1
Lead	3	1273	06/21/01	NF	1	1	0.11	—	—	—	—	—
Magnesium	3	1273	06/21/01	F	1	1	4500	—	—	—	—	—
Magnesium	3	1273	06/21/01	NF	1	1	4600	—	—	—	—	—
Manganese	3	1273	06/21/01	F	1	1	18	—	50	0/1	200	0/1
Manganese	3	1273	06/21/01	NF	1	1	34	—	—	—	—	—
Mercury	3	1273	06/21/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	3	1273	06/21/01	NF	1	0	—	[0.033]	—	—	2	0/1
Molybdenum	3	1273	06/21/01	F	1	1	16	—	—	—	—	—
Molybdenum	3	1273	06/21/01	NF	1	1	22	—	—	—	—	—
Nickel	3	1273	06/21/01	F	1	1	1.3	—	100	0/1	200	0/1
Nickel	3	1273	06/21/01	NF	1	1	27	—	—	—	—	—
Nitrate + Nitrite (as N)	3	1273	06/21/01	F	1	1	230	—	10000	0/1	—	—
Oxalate	3	1273	06/21/01	F	1	0	—	[190]	—	—	—	—
Perchlorate	3	1273	06/21/01	F	1	0	—	[0.958]	—	—	—	—
Phosphorus (as P)	3	1273	06/21/01	F	1	0	—	[50]	—	—	—	—
Potassium	3	1273	06/21/01	F	1	1	7500	—	—	—	—	—
Potassium	3	1273	06/21/01	NF	1	1	7300	—	—	—	—	—
Selenium	3	1273	06/21/01	F	1	0	—	[2.1]	50	0/1	50	0/1

Table D-22 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Selenium	3	1273	06/21/01	NF	1	0	—	[1.9]	—	—	—	—
SiO_2	3	1273	06/21/01	F	1	1	34240	—	—	—	—	—
SiO_2	3	1273	06/21/01	NF	1	1	36380	—	—	—	—	—
Silver	3	1273	06/21/01	F	1	0	—	[0.41]	100	0/1	50	0/1
Silver	3	1273	06/21/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	3	1273	06/21/01	F	1	1	41000	—	—	—	—	—
Sodium	3	1273	06/21/01	NF	1	1	39000	—	—	—	—	—
Strontium	3	1273	06/21/01	F	1	1	440	—	—	—	—	—
Strontium	3	1273	06/21/01	NF	1	1	510	—	—	—	—	—
Sulfate	3	1273	06/21/01	F	1	1	27000	—	250000	0/1	600000	0/1
Thallium	3	1273	06/21/01	F	1	1	0.43	—	2	0/1	—	—
Thallium	3	1273	06/21/01	NF	1	1	0.506	—	—	—	—	—
Uranium	3	1273	06/21/01	F	1	1	8.44	—	—	—	—	—
Uranium	3	1273	06/21/01	NF	1	1	2.45	—	—	—	—	—
Vanadium	3	1273	06/21/01	F	1	1	3.5	—	—	—	—	—
Vanadium	3	1273	06/21/01	NF	1	1	4.7	—	—	—	—	—
Zinc	3	1273	06/21/01	F	1	1	51	—	5000	0/1	10000	0/1
Zinc	3	1273	06/21/01	NF	1	1	4.5	—	—	—	—	—
Stable Isotope (‰)												
δD/H	3	1273	06/21/01	NF	1	1	-73	—	—	—	—	—
$\delta O^{18}/O^{16}$	3	1273	06/21/01	NF	1	1	-11	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-23
Regional Well R-22 Screen 4 Second Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	4	1379	06/25/01	NF[e]	1	1	119000	—[f]	—	—	—	—
pH	4	1379	06/25/01	NF	1	1	7.03	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	4	1379	06/25/01	NF	1	1	523	—	—	0/1	—	0/1
Temperature (°C)	4	1379	06/25/01	NF	1	1	23.7	—	—	0/1	—	0/1
Turbidity (NTU)[g]	4	1379	06/25/01	NF	1	1	4.0	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	4	1379	06/25/01	F[h]	1	1	270000	—	—	—	—	—
Aluminum	4	1379	06/25/01	F	1	0	—	[7.6]	50	0/1	5000	0/1
Aluminum	4	1379	06/25/01	NF	1	0	—	[7.6]	—	—	—	—
Ammonia (as N)	4	1379	06/25/01	F	1	1	1000	—	—	—	—	—
Antimony	4	1379	06/25/01	F	1	0	—	[0.224]	6	0/1	—	—
Antimony	4	1379	06/25/01	NF	1	0	—	[0.282]	—	—	—	—
Arsenic	4	1379	06/25/01	F	1	1	3.6	—	50	0/1	100	0/1
Arsenic	4	1379	06/25/01	NF	1	1	4.4	—	—	—	—	—
Barium	4	1379	06/25/01	F	1	1	320	—	2000	0/1	1000	0/1
Barium	4	1379	06/25/01	NF	1	1	360	—	—	—	—	—
Beryllium	4	1379	06/25/01	F	1	0	—	[0.012]	4	0/1	—	—
Beryllium	4	1379	06/25/01	NF	1	1	0.017	—	—	—	—	—
Boron	4	1379	06/25/01	F	1	1	100	—	—	—	750	0/1
Boron	4	1379	06/25/01	NF	1	1	110	—	—	—	—	—
Bromide	4	1379	06/25/01	F	1	0	—	[200]	—	—	—	—
Cadmium	4	1379	06/25/01	F	1	0	—	[0.066]	5	0/1	10	0/1
Cadmium	4	1379	06/25/01	NF	1	0	—	[0.066]	—	—	—	—
Calcium	4	1379	06/25/01	F	1	1	54000	—	—	—	—	—
Calcium	4	1379	06/25/01	NF	1	1	55000	—	—	—	—	—
Chloride	4	1379	06/25/01	F	1	1	8300	—	250000	0/1	250000	0/1

Table D-23 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Chromium (total)	4	1379	06/25/01	F	1	0	—	[0.21]	100	0/1	50	0/1
Chromium (total)	4	1379	06/25/01	NF	1	0	—	[0.21]	—	—	—	—
Cobalt	4	1379	06/25/01	F	1	1	3	—	—	—	50	0/1
Cobalt	4	1379	06/25/01	NF	1	1	2	—	—	—	—	—
Copper	4	1379	06/25/01	F	1	0	—	[0.27]	1300	0/1	1000	0/1
Copper	4	1379	06/25/01	NF	1	0	—	[0.27]	—	—	—	—
Cyanide (total)	4	1379	06/25/01	NF	1	0	—	[10]	—	—	—	—
Fluoride	4	1379	06/25/01	F	1	1	510	—	4000	0/1	1600	0/1
Iron	4	1379	06/25/01	F	1	1	5700	—	300	1/1	1000	1/1
Iron	4	1379	06/25/01	NF	1	1	8300	—	—	—	—	—
Kjeldahl Nitrogen	4	1379	06/25/01	F	1	1	1500	—	—	—	—	—
Lead	4	1379	06/25/01	F	1	0	—	[0.037]	15	0/1	50	0/1
Lead	4	1379	06/25/01	NF	1	0	—	[0.037]	—	—	—	—
Magnesium	4	1379	06/25/01	F	1	1	14000	—	—	—	—	—
Magnesium	4	1379	06/25/01	NF	1	1	14000	—	—	—	—	—
Manganese	4	1379	06/25/01	F	1	1	1600	—	50	1/1	200	1/1
Manganese	4	1379	06/25/01	NF	1	1	1600	—	—	—	—	—
Mercury	4	1379	06/25/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	4	1379	06/25/01	NF	1	0	—	[0.033]	—	—	2	0/1
Molybdenum	4	1379	06/25/01	F	1	1	24	—	—	—	—	—
Molybdenum	4	1379	06/25/01	NF	1	1	23	—	—	—	—	—
Nickel	4	1379	06/25/01	F	1	1	5.1	—	100	0/1	200	0/1
Nickel	4	1379	06/25/01	NF	1	1	4.6	—	—	—	—	—
Nitrate + Nitrite (as N)	4	1379	06/25/01	F	1	0	—	[50]	10000	0/1	—	—
Oxalate	4	1379	06/25/01	F	1	0	—	[190]	—	—	—	—
Perchlorate	4	1379	06/25/01	F	1	0	—	[0.958]	—	—	—	—
Phosphorus (as P)	4	1379	06/25/01	F	1	0	—	[50]	—	—	—	—
Potassium	4	1379	06/25/01	F	1	1	5600	—	—	—	—	—
Potassium	4	1379	06/25/01	NF	1	1	5700	—	—	—	—	—
Selenium	4	1379	06/25/01	F	1	0	—	[1.9]	50	0/1	50	0/1

Table D-23 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Selenium	4	1379	06/25/01	NF	1	0	—	[1.9]	—	—	—	—
SiO_2	4	1379	06/25/01	F	1	1	44940	—	—	—	—	—
SiO_2	4	1379	06/25/01	NF	1	1	47080	—	—	—	—	—
Silver	4	1379	06/25/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Silver	4	1379	06/25/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	4	1379	06/25/01	F	1	1	30000	—	—	—	—	—
Sodium	4	1379	06/25/01	NF	1	1	31000	—	—	—	—	—
Strontium	4	1379	06/25/01	F	1	1	1000	—	—	—	—	—
Strontium	4	1379	06/25/01	NF	1	1	1100	—	—	—	—	—
Sulfate	4	1379	06/25/01	F	1	0	—	[1000]	250000	0/1	600000	0/1
Thallium	4	1379	06/25/01	F	1	1	0.078	—	2	0/1	—	—
Thallium	4	1379	06/25/01	NF	1	1	0.019	—	—	—	—	—
Uranium	4	1379	06/25/01	F	1	1	0.079	—	—	—	—	—
Uranium	4	1379	06/25/01	NF	1	1	0.09	—	—	—	—	—
Vanadium	4	1379	06/25/01	F	1	1	0.73	—	—	—	—	—
Vanadium	4	1379	06/25/01	NF	1	0	—	[0.38]	—	—	—	—
Zinc	4	1379	06/25/01	F	1	1	1.7	—	5000	0/1	10000	0/1
Zinc	4	1379	06/25/01	NF	1	1	2.2	—	—	—	—	—
Stable Isotope (‰)												
δD/H	4	1379	06/25/01	NF	1	1	-78	—	—	—	—	—
$\delta O^{18}/O^{16}$	4	1379	06/25/01	NF	1	1	-10.8	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-24
Regional Well R-22 Screen 5 Second Round Sample Results: Data Summary for Inorganic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Field Parameter												
Field Alkalinity (total as $CaCO_3$)	5	1449	06/26/01	NF[e]	1	1	150000	—[f]	—	—	—	—
pH	5	1449	06/26/01	NF	1	1	6.95	—	>6 & <9	0/1	>6 & <9	0/1
Specific Conductance (µS/cm)	5	1449	06/26/01	NF	1	1	331	—	—	0/1	—	0/1
Temperature (°C)	5	1449	06/26/01	NF	1	1	22.9	—	—	0/1	—	0/1
Turbidity (NTU)[g]	5	1449	06/26/01	NF	1	1	4.2	—	—	0/1	—	0/1
Analyte												
Lab Alkalinity (total as $CaCO_3$)	5	1449	06/26/01	F[h]	1	1	160000	—	—	—	—	—
Aluminum	5	1449	06/26/01	F	1	0	—	[7.6]	50	0/1	5000	0/1
Aluminum	5	1449	06/26/01	NF	1	0	—	[7.6]	—	—	—	—
Ammonia (as N)	5	1449	06/26/01	F	1	1	660	—	—	—	—	—
Antimony	5	1449	06/26/01	F	1	0	—	[0.481]	6	0/1	—	—
Antimony	5	1449	06/26/01	NF	1	0	—	[1.51]	—	—	—	—
Arsenic	5	1449	06/26/01	F	1	0	—	[1.5]	50	0/1	100	0/1
Arsenic	5	1449	06/26/01	NF	1	1	2.5	—	—	—	—	—
Barium	5	1449	06/26/01	F	1	1	130	—	2000	0/1	1000	0/1
Barium	5	1449	06/26/01	NF	1	1	140	—	—	—	—	—
Beryllium	5	1449	06/26/01	F	1	1	0.015	—	4	0/1	—	—
Beryllium	5	1449	06/26/01	NF	1	0	—	[0.012]	—	—	—	—
Boron	5	1449	06/26/01	F	1	1	29	—	—	—	750	0/1
Boron	5	1449	06/26/01	NF	1	1	36	—	—	—	—	—
Bromide	5	1449	06/26/01	F	1	0	—	[200]	—	—	—	—
Cadmium	5	1449	06/26/01	F	1	1	0.07	—	5	0/1	10	0/1
Cadmium	5	1449	06/26/01	NF	1	0	—	[0.066]	—	—	—	—
Calcium	5	1449	06/26/01	F	1	1	37000	—	—	—	—	—
Calcium	5	1449	06/26/01	NF	1	1	39000	—	—	—	—	—
Chloride	5	1449	06/26/01	F	1	1	2500	—	250000	0/1	250000	0/1

Table D-24 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Chromium (total)	5	1449	06/26/01	F	1	1	0.35	—	100	0/1	50	0/1
Chromium (total)	5	1449	06/26/01	NF	1	1	1.6	—	—	—	—	—
Cobalt	5	1449	06/26/01	F	1	1	0.83	—	—	—	50	0/1
Cobalt	5	1449	06/26/01	NF	1	1	1.5	—	—	—	—	—
Copper	5	1449	06/26/01	F	1	0	—	[0.27]	1300	0/1	1000	0/1
Copper	5	1449	06/26/01	NF	1	0	—	[0.27]	—	—	—	—
Cyanide (total)	5	1449	06/26/01	NF	1	0	—	[10]	—	—	—	—
Fluoride	5	1449	06/26/01	F	1	1	410	—	4000	0/1	1600	0/1
Iron	5	1449	06/26/01	F	1	1	2100	—	300	1/1	1000	1/1
Iron	5	1449	06/26/01	NF	1	1	5200	—	—	—	—	—
Kjeldahl Nitrogen	5	1449	06/26/01	F	1	1	1200	—	—	—	—	—
Lead	5	1449	06/26/01	F	1	0	—	[0.037]	15	0/1	50	0/1
Lead	5	1449	06/26/01	NF	1	1	0.223	—	—	—	—	—
Magnesium	5	1449	06/26/01	F	1	1	6100	—	—	—	—	—
Magnesium	5	1449	06/26/01	NF	1	1	6000	—	—	—	—	—
Manganese	5	1449	06/26/01	F	1	1	630	—	50	1/1	200	1/1
Manganese	5	1449	06/26/01	NF	1	1	650	—	—	—	—	—
Mercury	5	1449	06/26/01	F	1	0	—	[0.033]	2	0/1	—	—
Mercury	5	1449	06/26/01	NF	1	0	—	[0.033]	—	—	2	0/1
Molybdenum	5	1449	06/26/01	F	1	1	23	—	—	—	—	—
Molybdenum	5	1449	06/26/01	NF	1	1	24	—	—	—	—	—
Nickel	5	1449	06/26/01	F	1	1	0.89	—	100	0/1	200	0/1
Nickel	5	1449	06/26/01	NF	1	1	1.5	—	—	—	—	—
Nitrate + Nitrite (as N)	5	1449	06/26/01	F	1	0	—	[50]	10000	0/1	—	—
Oxalate	5	1449	06/26/01	F	1	0	—	[190]	—	—	—	—
Perchlorate	5	1449	06/26/01	F	1	0	—	[0.958]	—	—	—	—
Phosphorus (as P)	5	1449	06/26/01	F	1	0	—	[50]	—	—	—	—
Potassium	5	1449	06/26/01	F	1	1	4000	—	—	—	—	—
Potassium	5	1449	06/26/01	NF	1	1	4100	—	—	—	—	—
Selenium	5	1449	06/26/01	F	1	0	—	[1.9]	50	0/1	50	0/1

Table D-24 (continued)

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Selenium	5	1449	06/26/01	NF	1	0	—	[1.9]	—	—	—	—
SiO_2	5	1449	06/26/01	F	1	1	49220	—	—	—	—	—
SiO_2	5	1449	06/26/01	NF	1	1	53500	—	—	—	—	—
Silver	5	1449	06/26/01	F	1	0	—	[0.57]	100	0/1	50	0/1
Silver	5	1449	06/26/01	NF	1	0	—	[0.57]	—	—	—	—
Sodium	5	1449	06/26/01	F	1	1	14000	—	—	—	—	—
Sodium	5	1449	06/26/01	NF	1	1	14000	—	—	—	—	—
Strontium	5	1449	06/26/01	F	1	1	310	—	—	—	—	—
Strontium	5	1449	06/26/01	NF	1	1	330	—	—	—	—	—
Sulfate	5	1449	06/26/01	F	1	0	—	[1000]	250000	0/1	600000	0/1
Thallium	5	1449	06/26/01	F	1	0	—	[0.077]	2	0/1	—	—
Thallium	5	1449	06/26/01	NF	1	0	—	[0.077]	—	—	—	—
Uranium	5	1449	06/26/01	F	1	1	0.061	—	—	—	—	—
Uranium	5	1449	06/26/01	NF	1	1	0.076	—	—	—	—	—
Vanadium	5	1449	06/26/01	F	1	0	—	[0.38]	—	—	—	—
Vanadium	5	1449	06/26/01	NF	1	0	—	[0.38]	—	—	—	—
Zinc	5	1449	06/26/01	F	1	1	1.3	—	5000	0/1	10000	0/1
Zinc	5	1449	06/26/01	NF	1	1	5.4	—	—	—	—	—
Stable Isotope (‰)												
δD/H	5	1449	06/26/01	NF	1	1	-80	—	—	—	—	—
$\delta O^{18}/O^{16}$	5	1449	06/26/01	NF	1	1	-11.2	—	—	—	—	—

Note: Units are µg/L except as otherwise noted in first column.

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NMED = New Mexico Environment Department.

[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.

[e] NF = Nonfiltered.

[f] — = Not available or applicable.

[g] NTU = Nephelometric turbidity unit.

[h] F = Filtered.

Table D-25
Regional Well R-22 Screen 1 Second Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Total Organic Carbon	1	906	06/19/01	NF[e]	1	1	8300	—[f]	—	—	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] NF = Nonfiltered.
[f] — = Not available or applicable.

Table D-26
Regional Well R-22 Screen 2 Second Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
No organic detects	2	962	06/20/01	—[e]	—	—	—	—	—	—	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] — = Not available or applicable.

Table D-27
Regional Well R-22 Screen 3 Second Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Total Organic Carbon	3	1273	06/21/01	NF[e]	1	1	4.9	—[f]	—	—	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] NF = Nonfiltered.
[f] — = Not available or applicable.

Table D-28
Regional Well R-22 Screen 4 Second Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acetone	4	1379	06/25/01	NF[e]	1	1	12	—[f]	—	—	—	—
Total Organic Carbon	4	1379	06/25/01	NF	1	1	23000	—	—	—	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] NF = Nonfiltered.
[f] — = Not available or applicable.

Table D-29
Regional Well R-22 Screen 5 Second Round Sample Results: Data Summary for Detected Organic Chemicals

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (µg/L)	Non-detected Value (µg/L)	Drinking Water MCL[b] (µg/L)	Frequency of Detects > Drinking Water MCL	NMED[c] Groundwater Standard[d] (µg/L)	Frequency of Detects > NMED Groundwater Standard
Acetone	5	1449	06/26/01	NF[e]	1	1	16	—[f]	—	—	—	—
Butanone[2-]	5	1449	06/26/01	NF	1	1	8.1	—	—	—	—	—
Toluene	5	1449	06/26/01	NF	1	1	0.71		1000	0/1	750	0/1
Total Organic Carbon	5	1449	06/26/01	NF	1	1	6100	—	—	—	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NMED = New Mexico Environment Department.
[d] State of New Mexico groundwater standards are from New Mexico Quality Control Commission Regulations, Ground and Surface Water Protection, 20 NMAC 6.2.
[e] NF = Nonfiltered.
[f] — = Not available or applicable.

Table D-30
Regional Well R-22 Screen 1 Second Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	1	906	06/19/01	NF[c]	1	0	—[d]	[-0.008]	—	—
Cesium-134	1	906	06/19/01	NF	1	0	—	[2.3]	—	—
Cesium-137	1	906	06/19/01	NF	1	0	—	[-1.5]	—	—
Cobalt-60	1	906	06/19/01	NF	1	0	—	[-3.4]	—	—
Europium-152	1	906	06/19/01	NF	1	0	—	[-39]	—	—
Iodine-129	1	906	06/19/01	NF	1	0	—	[1.1]	—	—
Plutonium-238	1	906	06/19/01	NF	1	0	—	[0.004]	—	—
Plutonium-239	1	906	06/19/01	NF	1	0	—	[-0.004]	—	—
Ruthenium-106	1	906	06/19/01	NF	1	0	—	[28]	—	—
Sodium-22	1	906	06/19/01	NF	1	0	—	[0.8]	—	—
Strontium-90	1	906	06/19/01	NF	1	0	—	[0]	—	—
Technetium-99	1	906	06/19/01	NF	1	0	—	[1.9]	—	—
Tritium	1	906	06/19/01	NF	1	1	2.87	—	20000	0/1
Uranium-234	1	906	06/19/01	NF	1	0	—	[0.072]	—	—
Uranium-235	1	906	06/19/01	NF	1	0	—	[0.008]	—	—
Uranium-238	1	906	06/19/01	NF	1	0	—	[0.062]	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NF = Nonfiltered.

[d] — = Not available or applicable.

Table D-31
Regional Well R-22 Screen 2 Second Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	2	962	06/20/01	NF[c]	1	0	—[d]	[0.004]	—	—
Cesium-134	2	962	06/20/01	NF	1	0	—	[0.9]	—	—
Cesium-137	2	962	06/20/01	NF	1	0	—	[0.4]	—	—
Cobalt-60	2	962	06/20/01	NF	1	0	—	[2.5]	—	—
Europium-152	2	962	06/20/01	NF	1	0	—	[20]	—	—
Iodine-129	2	962	06/20/01	NF	1	0	—	[1.3]	—	—
Plutonium-238	2	962	06/20/01	NF	1	0	—	[0.003]	—	—
Plutonium-239	2	962	06/20/01	NF	1	0	—	[-0.004]	—	—
Ruthenium-106	2	962	06/20/01	NF	1	0	—	[-28]	—	—
Sodium-22	2	962	06/20/01	NF	1	0	—	[0.8]	—	—
Strontium-90	2	962	06/20/01	NF	1	0	—	[1.1]	—	—
Technetium-99	2	962	06/20/01	NF	1	0	—	[-0.04]	—	—
Tritium	2	962	06/20/01	NF	1	0	—	[-0.1]	20000	0/1
Uranium-234	2	962	06/20/01	NF	1	1	0.34	—	—	—
Uranium-235	2	962	06/20/01	NF	1	0	—	[0.02]	—	—
Uranium-238	2	962	06/20/01	NF	1	1	0.127	—	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NF = Nonfiltered.
[d] — = Not available or applicable.

Table D-32
Regional Well R-22 Screen 3 Second Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	3	1273	06/21/01	NF[c]	1	0	—[d]	[0.009]	—	—
Cesium-134	3	1273	06/21/01	NF	1	0	—	[-1.6]	—	—
Cesium-137	3	1273	06/21/01	NF	1	0	—	[-1.3]	—	—
Cobalt-60	3	1273	06/21/01	NF	1	0	—	[5]	—	—
Europium-152	3	1273	06/21/01	NF	1	0	—	[4]	—	—
Iodine-129	3	1273	06/21/01	NF	1	0	—	[-3.57]	—	—
Plutonium-238	3	1273	06/21/01	NF	1	0	—	[-0.013]	—	—
Plutonium-239	3	1273	06/21/01	NF	1	0	—	[0]	—	—
Ruthenium-106	3	1273	06/21/01	NF	1	0	—	[-22]	—	—
Sodium-22	3	1273	06/21/01	NF	1	0	—	[1.1]	—	—
Strontium-90	3	1273	06/21/01	NF	1	0	—	[0.7]	—	—
Technetium-99	3	1273	06/21/01	NF	2	0	—	[2]	—	—
Tritium	3	1273	06/21/01	NF	1	1	0.89	—	20000	0/1
Uranium-234	3	1273	06/21/01	NF	1	1	1.68	—	—	—
Uranium-235	3	1273	06/21/01	NF	1	0	—	[0.065]	—	—
Uranium-238	3	1273	06/21/01	NF	1	1	0.89	—	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NF = Nonfiltered.

[d] — = Not available or applicable.

Table D-33
Regional Well R-22 Screen 4 Second Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	4	1379	06/25/01	NF[c]	1	0	—[d]	[0.004]	—	—
Cesium-134	4	1379	06/25/01	NF	1	0	—	[-1.6]	—	—
Cesium-137	4	1379	06/25/01	NF	1	0	—	[2.5]	—	—
Cobalt-60	4	1379	06/25/01	NF	1	0	—	[-0.7]	—	—
Europium-152	4	1379	06/25/01	NF	1	0	—	[38]	—	—
Iodine-129	4	1379	06/25/01	NF	1	0	—	[0.12]	—	—
Plutonium-238	4	1379	06/25/01	NF	1	0	—	[-0.003]	—	—
Plutonium-239	4	1379	06/25/01	NF	1	0	—	[0]	—	—
Ruthenium-106	4	1379	06/25/01	NF	1	0	—	[-25]	—	—
Sodium-22	4	1379	06/25/01	NF	1	0	—	[0.9]	—	—
Strontium-90	4	1379	06/25/01	NF	1	0	—	[0]	—	—
Technetium-99	4	1379	06/25/01	NF	1	0	—	[1.1]	—	—
Tritium	4	1379	06/25/01	NF	1	0	—	[-0.13]	20000	0/1
Uranium-234	4	1379	06/25/01	NF	1	0	—	[0.068]	—	—
Uranium-235	4	1379	06/25/01	NF	1	0	—	[-0.008]	—	—
Uranium-238	4	1379	06/25/01	NF	1	0	—	[0.093]	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.
[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.
[c] NF = Nonfiltered.
[d] — = Not available or applicable.

Table D-34
Regional Well R-22 Screen 5 Second Round Sample Results: Data Summary for Radionuclides

Parameter and Analyte	Screen	Depth (ft)[a]	Collection Date	Field Preparation	Number of Analyses	Number of Detects	Detected Value (pCi/L)	Nondetected Value (pCi/L)	Drinking Water MCL[b] (pCi/L)	Frequency of Detects > Drinking Water MCL
Americium-241	5	1449	06/26/01	NF[c]	1	0	—[d]	[0.004]	—	—
Cesium-134	5	1449	06/26/01	NF	1	0	—	[-7.9]	—	—
Cesium-137	5	1449	06/26/01	NF	1	0	—	[-3.2]	—	—
Cobalt-60	5	1449	06/26/01	NF	1	0	—	[6.1]	—	—
Europium-152	5	1449	06/26/01	NF	1	0	—	[40]	—	—
Iodine-129	5	1449	06/26/01	NF	1	0	—	[-0.86]	—	—
Plutonium-238	5	1449	06/26/01	NF	1	0	—	[0.021]	—	—
Plutonium-239	5	1449	06/26/01	NF	1	0	—	[0.004]	—	—
Ruthenium-106	5	1449	06/26/01	NF	1	0	—	[27]	—	—
Sodium-22	5	1449	06/26/01	NF	1	0	—	[0]	—	—
Strontium-90	5	1449	06/26/01	NF	1	0	—	[0.3]	—	—
Technetium-99	5	1449	06/26/01	NF	1	0	—	[0.85]	—	—
Tritium	5	1449	06/26/01	NF	1	1	14.24	—	20000	0/1
Uranium-234	5	1449	06/26/01	NF	1	1	0.148	—	—	—
Uranium-235	5	1449	06/26/01	NF	1	0	—	[0.031]	—	—
Uranium-238	5	1449	06/26/01	NF	1	0	—	[0.041]	—	—

[a] The static water level for the regional aquifer at R-22, when the well was drilled, was 883 ft.

[b] MCL = Maximum contaminant level. US Environmental Protection Agency (EPA) MCLs are from the National Primary Water Regulations, 40 CFR Part 141. US EPA secondary MCLs are from National Secondary Drinking Water Regulations, 20 NMAC 7.1.

[c] NF = Nonfiltered.

[d] — = Not available or applicable.