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U.S. Department of Energy
 Los Alamos Area Office, MS A316
 Environmental Restoration Program
 Los Alamos, New Mexico 87544
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Date: August 13, 1999
 Refer to: E/ER:99-198



Hswa L.A. G/M/R 99

Mr. James Bearzi
 NMED-HRMB
 P.O. Box 26110
 Santa Fe, NM 87502

SUBJECT: QUARTERLY TECHNICAL REPORT FOR APRIL-JUNE 1999

Dear Mr. Bearzi:

Enclosed are two copies of the Environmental Restoration Project's Quarterly Technical Report, April-June 1999. The Quarterly Technical Report presents information from each focus area on the quarter's activities, including sampling, cleanups, and report writing. Also enclosed is a certification statement signed by the designee owner and operator for the Los Alamos National Laboratory.

If you have questions regarding this report, please contact Dave McInroy at (505) 667-0819 or Joe Mose at (505) 667-5808.

Sincerely,

Julie A. Canepa, Program Manager
 LANL/ER

Sincerely,

Theodore J. Taylor, Program Manager
 DOE/LAO

JC/TT/MB/ev

- Enclosures: (1) Quarterly Technical Report, April-June 1999
 (2) Certification



TK

Mr. James Bearzi
E/ER:99-198

-2-

August 13, 1999

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J. Brown, S-7, MS F674
M. Buksa, E/ET, MS M992
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A. Dorries, EES-13, MS M992
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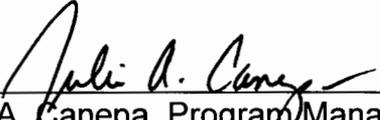
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CERTIFICATION

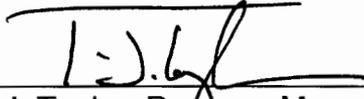
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Document Title: Quarterly Technical Report, April-June 1999

Name:  Date: 8/13/99
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Environmental Restoration Project
Los Alamos National Laboratory

or

Tom Baca, Program Director
Environmental Science & Waste Technology
Los Alamos National Laboratory

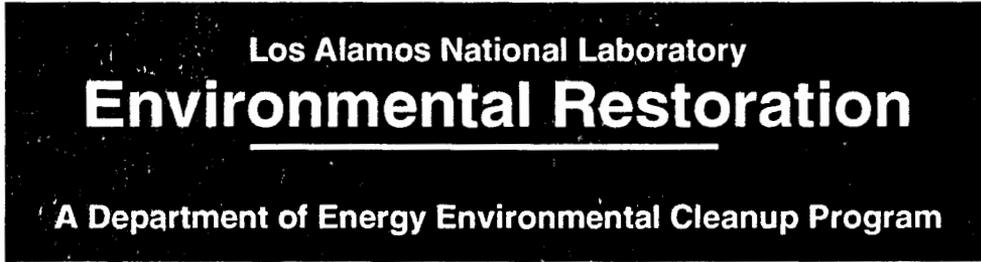
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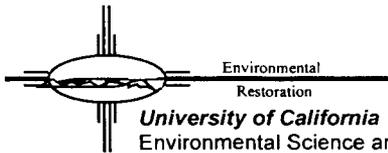
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QUARTERLY TECHNICAL REPORT
April-June 1999

August 13, 1999



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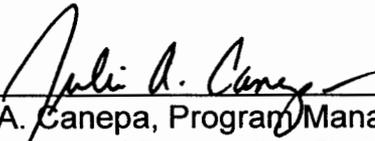
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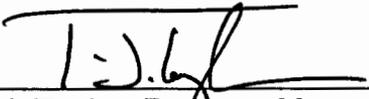
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CONTENTS

CONTENTS	I
LIST OF ACRONYMS AND ABBREVIATIONS	II
1.0 INTRODUCTION	1
2.0 FOCUS AREAS	1
2.1 Canyons — Focus Area Leader: Allyn Pratt	1
2.2 Material Disposal Areas — Focus Area Leader: Deba Daymon	3
2.3 Remedial Actions — Focus Area Leader: Warren Neff	4
2.4 Analysis and Assessment — Focus Area Leader: Alison Dorries	8
2.5 Regulatory Compliance — Focus Area Leader: Tori George	10
3.0 REFERENCES	17

LIST OF ACRONYMS AND ABBREVIATIONS

BMP	best management practice
CDM	Centralized Data Management
CMS	corrective measures study
COPC	chemical of potential concern
DOE	US Department of Energy
DOE-AL	US Department of Energy-Albuquerque Operations Office
DOE-HQ	US Department of Energy-Headquarters
DOE-LAAO	US Department of Energy-Los Alamos Area Office
EPA	US Environmental Protection Agency
ER	environmental restoration
ESH	Environment, Safety, and Health (Division)
ESH-18	Water Quality and Hydrology Group
ESH-19	Hazardous and Solid Waste Group
ESH-20	Ecology Group
FIMAD	Facility for Information Management, Analysis, and Display
FY	fiscal year
HE	high explosives
HRMB	Hazardous and Radioactive Materials Bureau
HSWA	Hazardous and Solid Waste Amendment
IS	Industrial Sites (Team)
LANL	Los Alamos National Laboratory
MDA	material disposal area
NFA	no further action
NRDA	Natural Resource Damage Assessment
NMED	New Mexico Environment Department
NTISV	nontraditional in situ vitrification
PCB	polychlorinated biphenyl
PP&C	Project Planning and Control
PRS	potential release site
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RLW	radioactive liquid waste
RSI	request for supplemental information
SAP	sampling and analysis plan
SOP	standard operating procedure
SWAT	Surface Water Assessment Team
TA	technical area
TSCA	Toxic Substances Control Act
VCA	voluntary corrective action
VCM	voluntary corrective measure

QUARTERLY TECHNICAL REPORT
APRIL—JUNE 1999
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 efforts performed this quarter in the ER Project.

2.0 FOCUS AREAS

2.1 Canyons — Focus Area Leader: Allyn Pratt

2.1.1 Work Plans

The Sandia Canyon/Cañada del Buey Work Plan was drafted during the third quarter. A read-review of this work plan was completed in June.

2.1.2 Ongoing Reach Investigations

2.1.2.1 DP Canyon (part of Los Alamos Canyon system)

Revisions were made to the preliminary geomorphic maps for four DP Canyon reaches, DP-1 through DP-4, based on analytical results and data from a gross gamma radiation walkover survey of reach DP-2. Geomorphic characterization data, sediment and alluvial groundwater analytical data, statistical analyses, and the risk evaluation are being compiled for the DP Canyon reach report, scheduled for completion in August 1999.

2.1.2.2 Mortandad Canyon

Focused data validation activities were completed this quarter for samples collected in September 1998 in reaches E-1, M-1, and M-2 and in "Pratt Canyon" (a tributary of Ten-Site Canyon). Statistical analyses of these data and of prior ER data for Ten-Site Canyon, combined with comparisons to background, were used to identify chemicals of potential concern (COPCs); screening analyses were used to identify the primary risk drivers. These statistical and screening analyses were used to narrow the analytical suites for the initial phase of sediment samples in downstream reaches (M-3, M-4, TS-1, and TS-2).

Preliminary geomorphic maps were prepared for two new reaches in Mortandad Canyon (M-3 and M-4) and two in Ten-Site Canyon, a tributary to Mortandad Canyon (TS-1 and TS-2). Gross gamma radiation walkover surveys were completed in reaches M-3 and M-4 to provide surface maps of variations in radiological contamination. Fixed-point radiation measurements were made in vertical sections in all four new reaches. The geomorphic mapping and radiation surveys were used to select locations for 57 sediment samples. Samples were collected in the four new reaches in May and were submitted for a combination of limited-suite and key contaminant analyses. The limited suite included all analytes identified as COPCs in upstream reaches, and the key contaminants included those COPCs identified as the primary risk drivers (a combination of radionuclides and metals).

2.1.2.3 Cañada del Buey (White Rock Land Transfer Parcel)

A preliminary geomorphic map was prepared for a new reach in Cañada del Buey (CDB-4) as part of the surface characterization of the White Rock land transfer parcel. A gross-gamma radiation walkover survey was completed in CDB-4 and showed no evidence of radiological contamination. The geomorphic mapping and associated geomorphic characterization were used to select locations for 10 sediment samples. Samples were collected in May and were submitted for full-suite analyses. The results of this investigation will be provided as input for a land transfer report describing the environmental condition of the site. (Because of the short time frame requested for this investigation, this work began before completion of the Sandia Canyon-Cañada del Buey work plan, referenced in Section 2.1.1.)

2.1.2.4 Acid Canyon (part of Pueblo Canyon system)

Canyons Focus Area personnel participated in the collection of sediment samples in the potential release site (PRS) 0-030(g) tributary to Acid Canyon.

2.1.2.5 Upper Sandia Canyon

Third-quarter surface water base-flow sampling was conducted at six stations in accordance with the Upper Sandia Canyon Sampling and Analysis Plan (Environmental Restoration Project 1998, 62340) in support of the Remedial Actions Focus Area. Final validation of the data is pending.

2.1.2.6 Cañon de Valle

Canyons Focus Area personnel provided geomorphic mapping and characterization support for future sediment sampling activities in Cañon de Valle and S-Site Canyon at TA-16. This work is in support of the corrective measures study (CMS) plan for the PRS 16-021(c) 260 outfall (Martin Spring Canyon).

2.1.2.7 Chaquehui Canyon

Canyons Focus Area personnel participated in the selection of sediment sample sites in tributary drainages to Chaquehui Canyon at TA-33.

2.1.2.8 Groundwater Activities

Measurement of water level in alluvium wells continued in Los Alamos Canyon and Pueblo Canyon. The drilling rig was moved from R-25 to Mortandad Canyon, and Phase 2 of the installation of R-15 was begun. As of June 30, 1999, total depth of R-15 was 540 ft in dry Cerros del Rio basalt. Selected core samples from R-9, R-12, and R-25 were submitted for analysis of hydraulic properties.

2.2 Material Disposal Areas — Focus Area Leader: Deba Daymon

2.2.1 General Information for Material Disposal Areas Focus Area

Work continued on the Material Disposal Area (MDA) Core Document, which will describe the technical strategy for completing the RCRA corrective action process for MDAs. Four of seven sections of the MDA Core Document have been drafted to date. The MDA Core Document strategy is currently being applied at MDAs G, H, and L at Technical Area (TA)- 54. The results of that application are being drafted as part of the Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) report for MDAs at TA-54.

2.2.2 Technical Area Activities

2.2.2.1 TA-21

CETROM Consulting Engineering, Inc., at the direction of the US Department of Energy (DOE) - Headquarters (HQ), conducted an independent review of the TA-21 Project Plan during late June. Personnel from the ER Project and DOE-Albuquerque Operations Office (AL) and DOE-Los Alamos Area Office (LAAO) participated in the three-day audit.

PRS 21-005. Preparation for field activities at this nitric acid pit began in early May. The readiness review was conducted in late May, and field activities started on June 2, 1999. The pit was located using a backhoe. Five boreholes, located in the center and around the perimeter of the pit, were drilled and sampled to a depth of 20 ft. Preparation of the RFI report for this PRS was started in mid-June. Some analytical results were received in late June and the rest will be received in early July.

PRS 21-015, MDA B. Waste profiles were prepared and submitted to the Laboratory's Solid Waste Operations Group for drill cuttings, decontamination water, personal protective equipment, and plastic, but chemical waste disposal requests have not been completed. The nonradioactive and nonhazardous drill cuttings from two boreholes were returned to their point of origin. The nonradioactive and nonhazardous protective equipment and plastic sheeting were taken to the county landfill for disposal as sanitary waste.

PRSs 21-017(a,b,c), MDA U. Waste profiles for all waste are in preparation.

PRS 21-018(a), MDA V NTISV Hot Demonstration. Preparation of the draft interim measures plan was initiated in April and was submitted for peer review in mid-June. Peer review comments have been incorporated.

PRS 21-024(f) and C-21-015. A voluntary corrective action (VCA) fact sheet was submitted to the New Mexico Environment Department (NMED) in May regarding PRS 21-024(f) (an inactive septic system) and PRS C-21-015 (former building 21-45). Preparation of a draft VCA plan was completed in June and submitted to a peer review committee in mid-June.

PRS 21-027(d), NTISV Cold Demonstration. In April, boreholes were drilled and sampled to define the extent of diesel contamination to the west and southeast of the cold-demonstration pit. The equipment for vitrification was put in place and all equipment was tested before start up of power for the nontraditional in situ vitrification (NTISV) cold demonstration in late April.

In late May and early June, the vitrified product was excavated, allowed to cool, and sampled. Boreholes were drilled and sampled southeast of the melt for the evaluation of diesel after completion of the melt. In addition, boreholes were drilled and sampled to define extent of diesel contamination south and southwest of the pit. Preparations were started to drill through the center of the vitrified product and collect samples.

Project personnel participated in a General Accounting Office audit of the NTISV cold demonstration, performed at the request of Senator Max Baucus of Montana.

2.2.2.2 TA-49

PRS 49-001(b,c,d,g), MDA AB, Areas 2, 2A, and 2B. Drafts of the stabilization plan for implementing interim measures and best management practices (BMPs), the BMP completion report, and the interim measure completion reports have undergone peer review. The projected completion date for these reports is the end of August 1999.

2.2.2.3 TA-54

An annotated outline for the TA-54 RFI report, due to NMED in September 1999, was presented and approved at the April monthly meeting of the ER Project and NMED/Hazardous and Radioactive Materials Bureau (HRMB). Sections one through five of the report were drafted and will undergo an internal peer review in July. These sections include the report objectives and multi-media data tabulation, validation, and screening analyses for MDAs G, H and L. In addition, initial runs of the Repository Integration Program model have been completed and human-health and ecological risk assessments have been initiated.

Personnel completed quarterly pore-gas sampling and completed the field report for that activity. Results indicated no unexpected concentrations or new contaminants. Initial 3-D visualization of the vapor phase plume has been completed.

2.3 Remedial Actions — Focus Area Leader: Warren Neff

2.3.1 Firing Sites Team

The sampling and analysis plans (SAPs) and other planning documents for the formally denied RFI reports for TA-15; for PRSs 36-001, 36-004(d), and 36-006; and for PRS 39-001(a,b) are on hold until the aggregates containing these sites are scheduled according to the new baseline. The new baseline will reflect the new PRS consolidation and aggregation strategy.

2.3.1.1 TA-15

PRS 15-009(c). Work on this septic tank was suspended until the aggregate containing the entire R-44 Firing Site is scheduled for completion according to the new baseline.

2.3.1.2 TA-33

Significant progress was made on the TA-33 segmented gate system (SGS) VCA. The SGS equipment was delivered in late April, and the soil-separation phase of the project was completed in the month of May. Preliminary results from that phase indicate that the waste volume was significantly reduced, upwards of 80 percent. Current activities include sample collection and analysis, waste characterization and management, screening of oversized material, and VCA completion report preparation.

PRS 33-008(c). Preparations continued for the installation of BMPs at PRS 33-008(c) and main site. These BMPs will be installed in the fourth quarter of FY1999.

2.3.2 High Explosives Production Sites Team

The High Explosives Production Sites Team spent most of the last quarter in fieldwork and report-writing activities. The V-Site voluntary corrective measures (VCM) report was completed, peer reviewed, and submitted to the DOE for their formal review. Hydrogeology studies, including stream profiles, quarterly sampling, and geomorphic mapping were completed.

2.3.2.1 TA-16

Hydrogeology. The field team continued to monitor water levels in the Cañon de Valle alluvial wells and in the intermediate depth wells. Transient saturation was observed in the Martin Spring borehole. The High Explosives Production Team continued to provide field analytical results for the regional well R-25 drilling effort. In June, quarterly samples were collected from Cañon de Valle springs and surface water. Stable isotope samples were collected for precipitation events and during quarterly sampling. In addition, every-other-day water samples (bromide tracer) were collected from the TA-16 springs. No bromide tracer breakthrough was observed. All third-quarter results are pending. Geomorphologic mapping in Cañon de Valle was initiated. Data quality objectives were developed for deep drilling at TA-16 in support of determination of the nature and extent of contamination of deep groundwater.

TA-16-260. The Laboratory presented a briefing on the TA-16-260 investigations at a public meeting at Fuller Lodge in early June. Santa Clara Pueblo members, members of the citizens advisory board, and numerous Laboratory and DOE representatives were also briefed on these activities during this quarter. The Laboratory responded to a request for supplemental information (RSI) from the NMED on the RFI report and CMS plan for the TA-16-260 outfall during April 1999. A conceptual engineering design for a BMP in Cañon de Valle was completed. This BMP will be based on passive barrier technology from Stormwater Management, Inc. Planning for on-site studies of zero-valent iron treatment of high explosives-contaminated soils was continued. Planning began for the source removal interim measure at the site.

TA-16 Burning Ground VCA. The VCA plan for PRS 16-016(c) at the burning ground was completed; this plan is an Appendix to the MDA P Phase II SAP. The draft document was completed and peer reviewed. A draft closure plan for the TA-16-387 burn pad [PRS 16-010(b)] was completed.

Surface Water. BMPs were inspected and maintained.

2.3.3 Industrial Sites Team

Industrial Sites (IS) Team personnel participated in Surface Water Assessment Team (SWAT) meetings. IS Team personnel provided updated analytical data packages to the SWAT for PRSs 4-003(a,b), 4-004, 5-004, 20-003(c), 35-016(b), 35-016(o), 48-003, and 48-007(c).

2.3.3.1 TA-3

Upper Sandia Canyon. The IS Team collected third-quarter water samples, and validation was completed for the first and second quarter of base-flow water data. Discussions continued with NMED about the analytical results. Preparations began for the fourth-quarter water sampling.

PRS 3-010(a). During an HRMB/ER Project meeting last quarter, HRMB personnel agreed to review all information regarding this disposal site and to make a final decision about the regulatory status of this PRS (i.e., whether the recommendation for no further action [NFA] will be accepted); the IS Team is awaiting that decision.

PRS 3-056(c). Following the submittal of a fact sheet to NMED last quarter regarding PRS 3-056(c), a transformer storage area located on a steep slope leading to a Sandia Canyon tributary and used by the Laboratory's electrical power line maintenance contractor, NMED made the decision to proceed with a VCA (rather than a VCM) at the site. A schedule for the cleanup was completed, and work began on the VCA plan. As part of the VCA plan development, efforts were initiated to determine the applicability of the PCB disposal and notification requirements of 40 CFR 761.61.

Best Management Practices. IS Team personnel began field preparation for the BMP activities at PRSs 3-010(a) (an asphalt curb to divert run-on from a roadway to an existing drainage channel) and PRS 3-056(c) (a berm to divert stormwater run-on). Utility markouts were completed, the silt fence was removed and the rebar caps were put on the rebar at PRS 3-056(c), and the sandbags at PRS 3-010(a) were removed and hauled to the landfill.

2.3.3.2 TA-35

PRS 35-003(a,b,c,n). On May 28, 1999, the IS Team received an RSI for the September 1998 RFI report for PRSs 35-003(a,b,c,n) a phase separator pit and holding tanks. The team prepared the RSI response and delivered it to NMED on June 24, 1999.

TA-35 Integrated SAP. The TA-35 integrated SAP is being developed as the pilot for the integrated strategy document. This SAP integrates the data needs for evaluation of human-health and ecological risk as well as gathers information that will be needed in conducting watershed assessments and cumulative risk evaluations. The SAP includes more than 52 PRSs in TA-35. All previously collected data will undergo the formal data analysis and assessment process in order to identify data gaps for the additional assessments.

The draft integrated SAP went through decision peer review on April 12, 1999. Major portions of Sections 2 through 9, and Appendixes A, B, and D were drafted.

Discussions were held with the DOE Oversight Bureau regarding the RFI report for PRSs 35-003(a,b,c,n) and the technical approach for the TA-35 integrated SAP.

2.3.3.3 TA-53

PRSs 53-006(a,b,c,d,e). Personnel continue to coordinate with facility management at TA-53 to collect samples as the radioactive liquid waste (RLW) system is upgraded. Samples were collected below the location of the RLW pipeline tie-ins at two locations near building TA-53-3M and near the vicinity of PRSs 53-006(a,b,c).

PRSs 53-002(a,b). IS Team personnel completed fieldwork preparation activities for the lagoons, including preparing the site-specific health and safety plan and completing the Environment, Safety, and Health (ESH)-ID questionnaire process, obtaining facility tenant agreements, performing TA-53 site-specific training for all personnel involved, and completing all health and safety activities. The readiness review was held April 29, 1999.

In preparation for sampling activities, team members fabricated a sampling platform and marked all sample locations in and around the lagoons, prepared field paperwork and sample kits, and began surveying for radioactive contamination west of lagoons. The team received sample tables, logs, and labels from the (CDM) Management section of the ER Field Support Facility, submitted to NMED the 10-day notification letter for sampling, and coordinated sampling events with Sample Management Office and CDM. Personnel from Johnson Controls Northern New Mexico utilities department performed utility markouts and authorized an excavation permit for surface impoundment sampling.

BMP fieldwork in the north lagoons, PRS 53-002(a), included collecting a sample of the deteriorated geotextile material and submitting it for tritium and gamma spectroscopy analysis for waste characterization. The team also completed removal of the deteriorated geotextile at the northwestern and northeastern lagoons and coordinated with waste management personnel regarding the use of B-25 boxes for the geotextile waste. The field team completed sampling in the northwest lagoon and started sampling in the northeast lagoon. Field blanks (sand) for volatile organic compounds were ordered and received. A survey of the Area C outfall and drainage to Los Alamos Canyon was performed using radiation-measuring instruments to determine the characteristics of the site and to aid in choosing the most appropriate sampling locations.

BMP activities for the southern lagoon, PRS 53-002(b), included procuring jute matting and placing the material around the outer edges of the lagoon where the liquid has evaporated and working toward the center as the liquid continued to evaporate. This was done to minimize potential airborne contamination.

2.3.4 Townsites Team

The team completed the asbestos removal at the Housing Solutions property near the Trinity-Oppenheimer intersection. An asbestos abatement report was then completed and submitted to DOE to document the work.

2.3.4.1 TA-0

PRS 0-017. The RFI Report for PRS 0-017 (hospital waste lines) has been drafted and peer reviewed, and comments are being incorporated in preparation for submittal to the NMED.

PRS 0-030(g). The Townsite Team received an RSI from the NMED-HRMB regarding the sampling and analysis plan for the PRS 0-030(g) (old Catholic church septic tank) outfall, the revised status report for the mesa top area, and the 1995 RFI report. A response was prepared and submitted to address these comments and to further clarify the documents and modify the sampling suites, locations, and scope. A

letter summarizing the ER Project's position regarding this PRS was prepared and submitted to the NMED-HRMB (at their request) to assist the property owner in selling the property for development.

PRS 0-019. The VCA Plan for PRS 0-019 (Central Waste Water Treatment Plant) has been completed and submitted to the NMED for review. Fieldwork was begun and the removal of the pump house and underground waste lines was accomplished; however, during the course of the demolition and remediation, it was discovered that none of the other treatment plant structures had been removed; instead, they were simply buried. This discovery has resulted in the suspension of work pending an evaluation and re-estimation of the work to complete the removal of the remaining structures.

2.3.4.2 TA-73

Aggregate 73-2. Fieldwork was completed at PRS Aggregate 73-2 to execute the SAP prepared and submitted in November 1998. During the course of the investigation two localized areas of elevated metals were discovered and remediated as part of this mobilization.

PRS 73-002. The "Authorized Limits" effort to dispose of waste to be generated at PRS 73-002 (airport incinerator ash) is ongoing, DOE-AL has approved the request, and all necessary documentation has been provided to the Colorado Department of Public Health for their consideration for concurrence to allow disposal at a landfill in Adams County, Colorado.

2.3.5 MDA P Closure

Excavation and segregation of soil and debris from the MDA P West Lobe continued. Approximately 9000 yd³ of soil and debris were excavated this quarter. To date, 5980 yd³ of material has been shipped for disposal. Scrap metal and concrete have been recycled, and the balance of the material has been disposed as industrial waste. Excavated soil that may exceed the maximum concentration of contaminants for the toxicity characteristic (through screening) is staged within the area of contamination at MDA P pending analytical results and off-site disposal.

2.4 Analysis and Assessment — Focus Area Leader: Alison Dorries

2.4.1 General Information for Analysis and Assessment Focus Area

The Integrated Technical Strategy, an interim document describing the ER Project's strategic plan, was completed this quarter and submitted to DOE on July 2, 1999.

2.4.2 Team Activities

2.4.2.1 Data Analysis and Assessment Team

The team leader continued participation as a core member of the Integrated Information Management System Team, directing work to correct problems with ER Project legacy electronic data, with the data set for the DOE-LAAO land transfer parcel used as a pilot. The team leader also directed work on data sets for the draft ER Project land transfer report. Data for the White Rock Y, TA-74, and Rendija Canyon parcels were screened implementing resource-user preliminary remediation goals.

The ER Project approach to data quality evaluation for gamma spectroscopy data was presented at the HRMB June monthly meeting.

Data Quality and Adequacy Task. Team members drafted a technical paper providing guidance to field teams implementing the new SW-846 Method 5035 for collection and analysis of volatile organic compound samples. Progress was made on the draft technical papers entitled "Data Quality Evaluation of Radiochemical Data," and "Focused Validation of Gamma Spectroscopy Data." The latter document is under review. Team members continued work on several background comparison standard operating procedures (SOPs) under revision. A draft technical guidance paper, "Technical Framework for Data Quality Assessment," was also produced.

Modeling Support Task. Team members provided draft text for the Integrated Technical Strategy Plan and participated in the peer review and comment incorporation process. A preliminary draft of a white paper addressing contaminant profile calculations at aggregate and watershed scales was prepared, as well as a draft annotated outline for the technical paper entitled "Integrated Data Sets for Modeling."

2.4.2.2 Risk Analysis and Review Team

Peer Review and Consistency Team. Fifteen peer reviews were conducted in this quarter: five read reviews, as well as peer reviews for two VCAs, two VCMs, two desk instructions, an integrated sampling and analysis plan, a quality procedure, an RFI report and a technical feasibility demonstration pilot project plan.

Ecological Risk Team. Team members finalized "General Assessment Endpoints for Ecological Risk Assessment at Los Alamos National Laboratory," which the Laboratory developed in cooperation with NMED and the Fish and Wildlife Service.

In other team activity, DOE review comments received on "Screening Level Ecological Risk Assessment Methods" are being incorporated into the document; work was finalized on the radiological screening level interface in the Eco-risk database; and evaluations of primary toxicity studies were completed.

Human Health Risk Team. In the third quarter, the team finalized a summary of standard human-health risk exposure scenarios, including standard input parameters and methodology for determining cleanup levels.

2.4.2.3 Strategic Decision Analysis Team

The major activity and accomplishment of the Strategic Decision Analysis Team was the completion of the Integrated Technical Strategy document.

Surface Water Strategy Task. Members of the Surface Water Strategy Team helped plan the completion of a modeling project supported by Laboratory general and administration (G&A) funds.

Groundwater Strategy Task. The Groundwater Strategy Team was engaged in continued development of a source term for the Los Alamos Canyon model, compiling and validating 35 years of tritium data from alluvial wells upstream and downstream of the major contaminant source (Omega West Reactor). Team members also provided comments to personnel from Sandia National Laboratories/New Mexico on the strategy for Sandia's groundwater investigations and decisions.

Cumulative Risk Task. The Strategic Decision Analysis Team reviewed draft EPA guidance on cumulative risk assessment and incorporated elements of this guidance into the Integrated Technical Strategy document.

MDA Consistency Task. The Strategic Decision Analysis Team worked with the MDA Focus Area to draft the first four of seven sections of the MDA Core Document. Fact sheets describing the status of each of the 26 MDAs under the purview of the MDA Focus Area were also drafted under this task; DOE requested the fact sheets as an appendix to the MDA Core Document.

2.5 Regulatory Compliance — Focus Area Leader: Tori George

2.5.1 Team Activities

2.5.1.1 Communication and Outreach Team

Outreach Activities. Members of the team participated in many outreach activities for the ER Project this quarter. The team developed and implemented a public involvement plan for the ER Project's NTISV cold demonstration project. The purpose of the plan was to introduce this technology to the public, the Northern New Mexico Citizens Advisory Board, the Pueblos, Los Alamos County, the media, and other personnel through briefings, tours, and multimedia presentation materials. The team provided a tour of the site to officials from NMED and EPA Region 6 on April 19, 1999, and April 22, 1999, and to the Northern New Mexico Citizens Advisory Board on April 30, 1999. The team provided several other public tours of the site throughout the quarter. The team photographed the progress of the NTISV project and provided current photos in presentation format to U.S. Senator Domenici's office in May.

The team coordinated the following other tours this quarter:

- A tour for the Interstate Technical and Regulatory Cooperation Working Group and their Radionuclide Working Committee on May 11, 1999. The tour included the NTISV Cold Demonstration Project at TA-21 and at TA-33 where the segmented gate system (SGS) technology is being used for a VCA at three PRSs.
- A tour for the Natural Resource Trustee Council for the Laboratory on June 2, 1999. Participants viewed a septic tank and outfall at TA-21, former septic systems and a former surface disposal site at Hillside 138 and 140, a former liquid waste and landfill disposal site at Bayo Canyon, a former transformer storage area for PCBs [PRS 3-056(c)], and a former wastewater treatment plant at TA-35.
- Two tours and sampling demonstrations for students from Northern New Mexico Community College.
- A tour of TA-16 sites (V Site, R-25 Monitoring Well, and MDA-P closure site) for the Citizens Advisory Board. A presentation on the 260 outfall was also discussed.

The team planned and participated in numerous other outreach events throughout the quarter. Team members coordinated a public meeting on the subject of environmental monitoring. The meeting was held on Thursday, April 29, 1999, at Northern New Mexico Community College and was sponsored jointly by the Laboratory, NMED, the San Ildefonso Pueblo, the Jemez Pueblo, and the Northern New Mexico Citizens Advisory Board. The team also coordinated and attended the Laboratory's ninth community environmental meeting held on June 8, 1999, at Fuller Lodge. The topic of discussion was "Is our water safe? Recent test well findings."

The team developed an ER Project exhibit and several handouts for the Los Alamos County Earth Day event held on April 24, 1999.

Land Transfer Activities. Land transfer activities continued this quarter. Revisions to the ER Land Transfer Report were prepared and submitted to DOE-LAAO on May 14, 1999. These revisions were made in response to comments received from the Citizens Advisory Board, the legal counsel for San Ildefonso Pueblo, and other stakeholders. Members of the team provided an ER Project tour of land transfer parcels for staff from the Los Alamos County Council and the San Ildefonso Pueblo Tribal Council on May 2, 1999.

Members of the team received a specific recommendation from San Ildefonso Pueblo regarding which of the ER Project's risk assessment scenarios would be appropriate to use for parcels proposed for cultural preservation. San Ildefonso Pueblo staff recommended that the ER Project use its "resource user" scenario, which was developed specifically to assess Native American risk. This is the first input the pueblos have provided and the first time representatives from a pueblo have substantively endorsed the ER Project's approach to assessing Native American risk.

Members of the team provided support to the Los Alamos County for their land transfer public meetings that were held in Los Alamos and White Rock on June 23 and 24, 1999.

Also in support of the land transfer activities, the team completed a compact disk video of land transfer parcels. Copies of the video were distributed to DOE-AL and DOE-HQ staff on May 29, 1999, and the video was placed on the ER Project Web site.

Other Activities. Several meetings were held with environmental staff from the San Ildefonso Pueblo and the Santa Clara Pueblo to discuss land transfer issues, risk assessment, aggregation, and other relevant environmental restoration issues. The meetings will be ongoing.

In May, members of the team met with environmental staff from the Santa Clara Pueblo to discuss their concerns regarding possible damage to monitoring screens one through nine of the R-25 monitoring well. After the meeting, the ER Project staff and the staff from Santa Clara Pueblo visited the monitoring well. Communications and Outreach Team video staff placed a video camera two thousand feet down the R-25 borehole to determine and verify that there was no damage to those monitoring screens. Members of the team produced a digitized movie of the R-25 borehole and screens one through nine and provided a copy to the Santa Clara Pueblo for their review.

Team members also provided general tours of ER sites for DOE-AL officials in April and for two representatives from the Texas Natural Resource Conservation Commission in June.

Ongoing Activities. The team participated in the Northern New Mexico Citizens Advisory Board monthly meetings in Las Vegas, New Mexico (April 28, 1999); in Los Alamos, New Mexico (May 26, 1999); and at the Jemez Pueblo Senior Citizens Center (June 30, 1999).

Members of the team launched the new ER Project public Web site. This Web site contains background information on the ER Project, current Project information, procedures, and other relevant information.

Members of the team continued photographic documentation efforts this quarter.

2.5.1.2 Deliverables Tracking and Consistency Team

Team members continued data entry into the PRS database and tracking of regulatory deliverables. Personnel generated various reports on PRS regulatory history. Members updated NMED priority document review and worked to resolve PRS discrepancies in the Facility for Information Management, Analysis, and Display (FIMAD) database. Team members addressed impacts to watershed aggregates by

the PRS consolidation effort and continued to work with FIMAD on these issues. Members conducted a quality check of the new PRS core database in Access and coordinated the integration of the ER Catalog system and photo database with the PRS core database. Preliminary web-interface views were developed to demonstrate this new database.

Future Deliverables. Members of the team continued the ongoing effort to determine all regulatory obligations and to work with NMED to categorize and proceed on those obligations. Responses for notices of deficiency and RSIs with embedded deliverables were continually reviewed. To assess and define needs for future information management, members continued to investigate current information tracking systems in use within the ER Project. A staff member continued to work with ER operational personnel to track EM/ER progress on FY 1999 deliverables. The member also worked with Project Planning and Control (PP&C) to ensure PP&C's database included all action items written in the Work Schedule, Performance Measures, and Work Narrative. Discrepancies in start and end dates for these action items were found, and work was started to resolve them.

Team members met with NMED and negotiated changes to the Work Narrative and Work Schedule for this fiscal year. A new Work Narrative was finalized and submitted to NMED on April 27, 1999. Members of the team negotiated with HRMB to reprioritize a number of previously agreed-on deliverables into the new watershed/consolidation scheme, thus reducing the number of ER future deliverables dates. A Class I Request for Permit Modification was submitted to remove three reports from the Work Schedule. Members researched existing deliverables and met with HRMB to reevaluate identified open action items. Because of the new aggregation and consolidation efforts, some of the action items were no longer applicable. The ER Project and the HRMB agreed to return some of the pending items into the broad category of remaining ER Project work.

A comprehensive spreadsheet containing all EM/ER future deliverables was placed on the ER internal Web site. Team members began designing a new, interactive, Web-based database, which will be compatible with the future PRS database, to track EM/ER's future deliverables. The database for pending obligations, formerly in Excel, was converted into Access in support of this project.

Closeout for PRSs. A draft desk instruction for closeout of Laboratory PRSs was completed. Members of the team began organizing files for documents associated with PRSs, in support of the closeout effort.

2.5.1.3 ER Policy and Guidance Team

The team continued work on the renewal of the HSWA Module of the Hazardous Waste Facility Permit. The team completed the first draft of the permit renewal package and distributed it on March 18, 1999, to DOE-LAAO, ESH Division, and the ER Project for review and comment. Comments were accepted and incorporated into the final draft, which was completed in June. Team members briefed personnel from Sandia National Laboratories/New Mexico on the permitting approach.

Work continued on the ER Project's response to, and follow-up on, Compliance Order 98-01. The final proposed schedule for corrective action was transmitted to NMED/HRMB as a condition of the Final Stipulated Order to CO 98-01, and payment of the processing fee was documented for the work plan for DP Tank Farm.

Aggregation efforts continued this quarter. Personnel continued to refine the designation of aggregates and developed a crosswalk of all PRSs with proposed consolidated PRS numbers, operable units, watersheds, and aggregates. Members of the team continued integrating the ER Project's aggregation strategy with other Laboratory institutional activities. The team is also working with other focus areas to

develop the integrated technical strategy, which will implement the aggregation strategy in an integrated fashion.

Members of the team reviewed EPA Region 6 Draft Risk Management Strategy and subsequently met with personnel from DOE-AL, DOE-LAAO, and Sandia National Laboratories/New Mexico to discuss possible adoption of the strategy and submittal of joint comments to EPA. Ultimately, those comments were submitted through DOE-AL to EPA in April and, in general, support the adoption of the strategy. Team members also reviewed the following NMED draft policies: Determination of Extent of Contamination; Application of Inorganic Background Values in the Risk Assessment Process; Use of Tolerance Intervals for Determining Inorganic Background Concentrations; Use of Monitored Natural Attenuation; and, the Risk-Based Decision Process Strategy, which documents the HRMB's intent to adopt the Region 6 risk management strategy discussed above.

Work continued with the Deputy Director for Operations' Environmental Working Group and the Policy Subteam. The Policy Team's charter is to assess the Laboratory's process for developing environmental protection programs and guidance and to develop environmental milestones for the Laboratory's Integrated Safety Management Program.

The team coordinated a three-day RCRA training session for ER Project and other Laboratory personnel. Personnel from NMED-HRMB, DOE-LAAO, and the Pueblos also attended the training. Other significant activities included supporting the NTISV Project at TA-21 during the cold demonstration and working with NMED and ER staff to develop an interim measures plan for the "hot" demonstration. Additionally, team members provided regulatory support and direction on TA-53 activities, and worked with personnel from Decommissioning and Decontamination, the Water Quality and Hydrology Group (ESH-18), and the Hazardous and Solid Waste Group (ESH-19) on proposed sediment retention ponds at TA-21.

2.5.2.4 Regulatory Integration and Operations Team

Regularly scheduled monthly meetings were held with NMED-HRMB and the DOE Oversight Bureau on April 16, May 19, and June 16. The following topics were discussed:

- MDA P,
- TA-35 lagoons and tanks,
- active vs. inactive sites and facility hand-off,
- future NFA permit modification candidates,
- feedback from a roadmapping presentation,
- funding,
- invoicing the Laboratory for document review fees,
- EPA's draft position paper on risk strategy,
- closure of bum pad TA-16-387, and
- scheduled changes in both "annual work schedule" and "Planned Work."

Members of the team worked together to begin the preparation of a Class III Request for Permit Modification and negotiated a revised, less detailed permit modification outline with NMED-HRMB that more adequately addresses NFA Criteria 1, 2, 3, and 4 PRSs.

Meetings were held with NMED-HRMB to address NFA proposals in previous permit modification requests that NMED believes require additional documentation and/or sampling. Meetings were scheduled with NMED with the goal of submitting by the end of the fiscal year a subset of these NFAs for public notice and removal from the permit. Each site requires additional research and in many instances a site visit to clarify outstanding issues.

Other general activities completed by team members this quarter include the following:

- Represented the ER Project at the Interagency Wildfire Management Team meetings;
- Represented ER on the focus team for development of the Laboratory Implementation Requirement (LIR) 404-30-02.0 and the Laboratory Implementation Guideline addressing National Environmental Policy Act and biological and cultural resources;
- Prepared and submitted numerous 10-day sampling notification letters to NMED;
- Worked with DOE-LAAO to finalize the VCA/VCM plan outline;
- Participated in decision, document, and read peer reviews of documents, including work plans, RFI reports, SAPs, VCA plans and reports, interim measures plans and reports, a BMP completion report, and an SOP;
- Provided regulatory reviews of documents, including an RFI report, SAPs, responses to RSIs, procedures, interim measures reports, technical papers, waste characterization strategy forms, VCA plans, and other ER Project documents; and
- Submitted to NMED-HRMB an amendment to the approved Closure Plan for MDA P and subsequent clarification regarding waste containerization and tracking associated with closure activities.

Clean Water Compliance. A member of the Regulatory Integration and Operations Team attended readiness reviews for the TA-33 segmented gate system project, the BMP Implementation Contract, and the PRS 0-017 RFI report.

Work continued on the Draft Watershed Management Plan (LANL 1999, 62920). In addition to assisting with a presentation to the ER Project Management Team regarding the pros and cons of the plan and how it might impact the ER Project, a team member coordinated ER Project review of comments from several ER staff members on the plan. The team member met with the Watershed Management Team regarding comments received on the draft plan and began efforts to revise Chapter 4 regarding sampling procedures, analytical methods, and information management.

In other activities regarding watershed management, a team member attended a meeting with the Integrated Technical Strategy Team to discuss issues associated with watershed aggregation, consolidation, Ecorisk, proposed surface-water monitoring, and the baseline schedule for Water Canyon.

SWAT meetings were held this quarter to discuss clustering/subaggregation, future SWAT roles, and BMP inspection reporting and to provide an update on the status of TA-35 PRSs. Team members

discussed the status of previous BMP recommendations to determine a schedule for their completion and reviewed pending data provided for sites at TAs-4, -5, -20, -35 and -48.

Other clean water compliance activities included the following:

- Conducted a tour of BMPs at the ER Project with members of the Natural Resource Trustee Council. Approximately 20 participants from the NMED, DOE Oversight Bureau, Cochiti Pueblo, Santa Clara Pueblo, San Ildefonso Pueblo, New Mexico Attorney General's Office, Santa Fe National Forest Service and the US Geological Survey visited nearly a dozen sites within TAs-0, -3, -10 and -35 to assess BMP effectiveness.
- Continued field visits to complete surface water site assessments and Ecorisk assessments for work-off sites.
- Participated with DOE-LAAO and DOE-AL in a field audit of MDA P and TA-16 burning grounds and the associated stormwater pollution prevention plans and BMPs.
- Completed final inspection of the C-0-041 Tar Site with representatives from the NMED Surface Water Quality Bureau, Santa Fe National Forest Service, and the Laboratory's ER Remedial Actions Focus Area. A majority of the tar has been removed from the site and a letter is anticipated from the NMED that states that the ER Project has completed its obligations at the site.

Waste Management Activities. Team members provided regulatory reviews and comments on seven waste characterization strategy forms. More than 500yd³ of steel were shipped from MDA P for recycling, and twelve waste streams from various ER sites were shipped to TA-54. Team members also participated in MDA P meetings to provide regulatory assistance and coordinated and performed monthly compliance inspections. Those inspections resulted in no noted deficiencies.

Natural Resource Damage Assessment (NRDA) Activities. A representative of the Regulatory Integration and Operations Team participated in an NRDA Natural Resource Trustee Council tour to visit examples of BMPs employed at various PRSs at the Laboratory. The representative also met with the lead member of the ecology group's (ESH-20's) restoration team and several trustee council members to discuss proposed activity and the FY1999 scope of work. At the meeting, a draft document outlining restoration procedures was discussed.

Support of Focus Areas. Personnel from the Regulatory Integration and Operations Team are deployed to the operational focus areas to provide support on regulatory issues. In addition to providing general regulatory compliance assistance this quarter, such as reviewing documents, attending operational focus area meetings and peer reviews, and preparing 10-day sampling notifications for the focus areas, the deployed members of the team assisted with the following tasks in the operational focus areas:

Canyons Activities. The team member deployed to the Canyons Focus Area provided support to the Land Application Team at R-25, which subsequently received a pollution prevention award for land application of purge water at the R-25 drill site. The team member continued support for discharges of well purge water at R-15 and R-31 and prepared field notifications for Mortandad and Cañada del Buey sediment sampling and for R-15 and R-31 drilling activities.

MDA Activities. The team member deployed to the MDA Focus Area worked on the TA-54 RFI report this quarter. The member drafted the regulatory history section of the report, which included the regulatory history and status of all PRSs at TA-54. Meetings were held with representatives from TA-54, Laboratory Legal Counsel, DOE-AL, and DOE-LAAO regarding the risk assessment approach and subsequent

discussion of various waste streams disposed at TA-54. The team member also met with TA-54 personnel to determine PRS responsibility and regulatory status for each unit.

Work continued this quarter at TA-21. The deployed person attended numerous site visits and meetings with NMED regarding confirmatory sampling and cleanup levels at PRS 21-027(d)-99, the NTISV cold demonstration site; other meetings were held regarding the interim measures plan for the hot demonstration site. The focus area received approval from NMED for the VCA at PRS 21-024(f). The deployed person participated in readiness review for the VCAs at PRSs C-21-005 and 21-024(f).

Remedial Actions Activities. The deployed member of the team participated in site tours to observe the VCA activities involving segmented gate system technology at three TA-33 sites as well as activities at the following sites: MDA M; the PRS 3-010(a) mercury site; the PRS 3-056c transformer storage area; the PRS 0-030(g) old Catholic Church septic tank; and the PRS 73-002 airport ash pile. The member also assisted with responses to four RSIs associated with the SAP for the PRS 0-030(g) outfall; the RFI report and the CMS plan for PRS 16-021(c), the 260 outfall; the RFI Report for PRSs 09-002 and 09-011(b); and the RFI report for PRSs 35-003(a,b,c, and n). The team member also participated in meetings this quarter that included discussions regarding the TA-1 strategy for additional work, the schedule, and possible deliverable(s) and regarding MDA P Phase II SAP content, strategy, schedule, and coordination with the Closure Plan for the TA-16-387 Flash Pad. Peer and document reviews were conducted for an RFI report, a SAP, a VCM report, and for VCA, interim action, and technology feasibility demonstration plans.

The following additional activities and/or tasks were performed in support of the Remedial Actions Focus Area:

- Submitted two letters to NMED; one identified the area of contamination for VCA activities at PRSs 33-007(b), 33-010(c), and C-33-003; the other letter outlined the technology feasibility demonstration activities at PRS 15-004(f).
- Researched waste management history and chronology of PRSs 53-006(f) and 53-007(a), a tank and sump located in the basement of MPF-1.
- Completed a draft of the Closure Plan for TA-16-387 Flash Pad.

3.0 REFERENCES

Environmental Restoration Project, March 27, 1998. "Sampling and Analysis Plan for Upper Sandia Canyon," Los Alamos National Laboratory Report LA-UR-98-4892, Los Alamos, New Mexico. (LANL 1998, ER ID 62340)

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