



DEPARTMENT OF THE ARMY
CAMP STANLEY STORAGE ACTIVITY, MCAAP
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January 09, 2009

U-050-09

Mr. Greg J. Lyssy
U.S. EPA, Region 6
1445 Ross Avenue (6SF-LT)
Dallas, TX 75202-2733

Subject: Period 33 Progress Report
Camp Stanley Storage Activity, Boerne, Texas
EPA Identification Number: TXD2210020739
US EPA Docket Number: RCRA-VI 002(h)99-H FY99

Dear Mr. Lyssy:

In accordance with the RCRA §3008(h), Administrative Order on Consent, signed 5 May 1999, Camp Stanley Storage Activity (CSSA) is submitting its 33rd Progress Report, for the period from 1 July 2008 through 31 December 2008. Two hard copies of the progress report are included.

I certify that the information contained in and accompanying this submission is true, accurate, and complete to the best of my knowledge and information. As to those portions of this submission for which I cannot personally verify the truth and accuracy, I certify as the Facility Official having supervisory responsibility for the person(s) who, acting upon my direct instructions, made the verification, that this information is true, accurate, and complete.

If you have any questions or comments, please call Glaré Sanchez at (210) 698-5208 or Julie Burdey, Parsons at (512) 719-6062.

Sincerely,


Jason D. Shirley
Installation Manager

Enclosure

cc: Ms. Glaré Sanchez, CSSA Environmental Program Manager
Ms. Julie Burdey, Parsons
Ms. Kimberly Vaughn, Parsons

PROGRESS REPORT

July 1, 2008 – December 31, 2008

(33rd REPORT)



Camp Stanley Storage Activity

Boerne, Texas

USEPA ID No. TX2210020739

January 2009

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ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius
1,1-DCE	1,1-dichloroethene
AOC	area of concern
AL	Action level
APAR	affected property assessment report
APPL	Agriculture & Priority Pollutants Laboratories, Inc.
<i>cis</i> -1,2-DCE	<i>cis</i> -1,2-dichloroethene
CAH	Chlorinated aliphatic hydrocarbons
COC	Chemical of concern
CSSA	Camp Stanley Storage Activity
CY	Cubic yard
DQO	data quality objective
GAC	granular activated carbon
gpm	gallons per minute
H&A	Hankins and Anderson
HCSM	hydrogeologic conceptual site model
I/SM	interim/stabilization measures
LTMO	long-term monitoring optimization
MCL	Maximum contaminant level
µg/l	micrograms per liter
NFA	No Further Action
O&M	operations and maintenance
Order	§3008(h) Administrative Order on Consent
PCL	Protective Concentration Limits
PCE	Tetrachloroethene
QAPP	Quality Assurance Program Plan
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RIR	Release Investigation Report
SCL	Secondary Contaminant Levels
SVE	Soil vapor extraction
SVOC	Semi-volatile organic compounds
SWMU	solid waste management unit
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
TO	task order
TRRP	Texas Risk Reduction Program
UIC	underground injection control
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VC	Vinyl Chloride
VOC	volatile organic compound
WP	work plan

PROGRESS REPORT JULY 1, 2008 – DECEMBER 31, 2008 (33rd PERIOD)

INTRODUCTION

This 33rd Progress Report for Camp Stanley Storage Activity (CSSA), Boerne, Texas, U.S. Environmental Protection Agency (USEPA) Identification Number TX2210020739, is submitted in accordance with the Administrative Order on Consent (Order) issued to CSSA on May 5, 1999, pursuant to §3008(h) of the Safe Drinking Water Act, as amended by the Resource Conservation and Recovery Act (RCRA), and further amended by the Hazardous and Solid Waste Act of 1984, 42 United States Code §6928(h). This report addresses the project progress from July 1, 2008 through December 31, 2008. In June 2006, CSSA switched from quarterly to semi-annual progress reporting, as approved by USEPA. Subsequent progress reports will continue to be submitted on a semi-annual basis.

Summary of Activities this Period

Between July 1 and December 31, 2008, significant activities related to the Order included:

- Continuation of solid waste management unit (SWMU) B-3 bioreactor treatability studies;
- Continuation of Area of Concern (AOC)-65 Soil Vapor Extraction (SVE) operations and maintenance (O&M) of the SVE system treatability study;
- Continuation of the groundwater monitoring program under the regulator-approved data quality objectives (DQO);
- Continuation of investigations of SWMUs and AOCs including SWMU B-71 and AOC-64 (Weston) and SWMU B-2, SWMU B-8, SWMU B-20/21, SWMU B-24, AOC-67, AOC-68, and AOC-69 (Parsons);
- Closure of SWMU I-1 and AOC-55 (approved by Texas Commission on Environmental Quality [TCEQ]);
- Submittal of Release Investigation Report for TCEQ comment/approval for AOC-73 and a No Further Action (NFA) Affected Property Assessment Report (APAR) for TCEQ comment/approval for AOC-63;
- Continued maintenance of on-post and off-post granular activated carbon (GAC) systems and on-post permitted outfalls;
- Two status update meetings with USEPA and TCEQ; and
- Continuation of administrative record maintenance.

Details regarding these activities are summarized in this report.

Report Organization

This report details work completed on tasks associated with the four project phases outlined in the Order. Phase names and task names listed in **Table 1** are taken directly from the Order. Information for tasks active from July 1 through December 31, 2008 is provided in this report. No current information is provided for tasks that are not active; however, a summary of all tasks, subtasks, and their status has been presented in previous reports. Details of the evaluation of the percent complete by awarded projects are included in **Table 2**. An updated project team contact information chart with telephone numbers and addresses is included in **Table 3**.

Attachment 1 shows the locations of groundwater wells referenced in this report. A summary of the status of all identified SWMUs and AOCs at CSSA is provided in **Attachment 2**. **Attachment 3** is a summary of the physical percent complete of each order-related task being conducted at CSSA. **Attachment 4** is a summary of groundwater results for sampling events conducted this period.

Table 1 §3008(h) Administrative Order on Consent Project Phases

3008(h) Order Phase and Subtasks	Phase Purpose	Phase's % of Overall Order	Subtask's % of Phase	Physical % Complete of Subtask	Subtask portion of Phase % Complete	Physical % Complete of Phase	Active During P33
Interim Measures		30%				99%	
Interim Measures Work Plan	Mitigate a current or potential threat to human health and/or the environment.		7%	100%	7.0%		No
Interim Measures Implementation			70%	99%	69%		No
Reports			23%	100%	23%		No
RCRA Facility Investigation		30%				75%	
Preliminary Report	Characterize the environmental setting of CSSA; define the sources of contamination; define the degree and extent of contamination; identify actual or potential receptors; and assess whether any additional interim/stabilization measures may be warranted.		5%	100%	5%		No
RFI Work Plan			5%	100%	5%		Yes
Facility Investigation			40%	75%	30%		Yes
Risk Assessment			10%	89%	9%		No
Investigation Analysis			10%	84%	8%		No
Groundwater Investigation			15%	80%	12%		Yes
Treatability Studies			10%	46%	5%		Yes
Progress Reports			5%	27%	1%		Yes
Corrective Measures Study		10%				0%	
Identify and Develop Alternatives	Identification, screening, and development of alternatives for removal, containment, treatment, and/or other remediation of the contamination.		15%	0%	0%		No
Evaluate Alternatives			60%	0%	0%		No
Reports			25%	0%	0%		No
Corrective Measures		30%				0%	
Implementation Program Plan	Design, construct, operate, maintain, and monitor the performance of corrective measure(s) selected to protect human health and the environment.		5%	0%	0%		No
Corrective Measure Design			15%	0%	0%		No
Corrective Measure Construction			70%	0%	0%		No
Reports			10%	0%	0%		No
% of All Phases Complete						52%	

RCRA FACILITY INVESTIGATION

The RCRA Facility Investigation (RFI) is being conducted to characterize the environmental setting of CSSA, define the sources of contamination, define the degree and extent of contamination, identify actual or potential receptors, and assess whether any additional interim/stabilization measures (I/SM) may be warranted. The discussions below include only the tasks related to Facility Investigations and Treatability Studies. Discussion of other RFI subtasks will be included in future reports if changes or additions to previously reported activities occur. The majority of current ongoing environmental activities at CSSA are part of the RFI task. Work on each of these tasks is described in the following paragraphs. The main areas of work during this period included:

- Groundwater monitoring of on- and off-post wells;
- Groundwater monitoring of Westbay[®]-equipped wells;
- Verification and validation of analytical data;
- SVE system O&M at AOC-65;
- Continuation of bioreactor operation at SWMU B-3;
- Investigations of SWMU B-71 and AOC-64 (Weston) and SWMU B-2, SWMU B-8, SWMU B-20/21, SWMU B-24, AOC-67, AOC-68, and AOC-69 (Parsons);
- Submittal of Release Investigation Report for AOC-73 and NFA APAR for AOC-63; and
- TCEQ approval of closure of SWMU I-1 and AOC-55.

RFI Work Plan

The Order requires the RFI WP task to include a Project Management Plan, Data Collection Quality Assurance Plan, Health and Safety Plan, and a Community Relations Plan. As previously agreed by USEPA, because the CSSA Environmental Encyclopedia includes all information required by the Order, it is used to fulfill this requirement. The RFI WP task makes up approximately 5 percent of the RFI phase. Estimation of percent complete is difficult due to the continuing need for plan addenda as new projects are identified and awarded. As of the end of Period 33, WPs currently under scope are 100 percent complete. The CSSA Environmental Encyclopedia will continue to be updated as WPs for any new projects are finalized. During Period 33, work plans for work at SWMU B-71, AOC-64, AOC-67/68, AOC-69, and SWMU B-8 were prepared.

Environmental Encyclopedia Updates

The CSSA website (www.stanley.army.mil) was updated with documents added to the Environmental Encyclopedia through the end of December 2008. The website includes CSSA's Administrative Record as required under the Order. The electronic encyclopedia and hard copy encyclopedia were updated with all final reports through December 2008. Updates made in Period 33 included the following:

- Period 32 USEPA Progress Report;

- SWMU B-3 Bioreactor Status Reports;
- SWMU B-3 Bioreactor Operations and Maintenance Assessment Report;
- SWMU B-3 Bioreactor Underground Injection Control (UIC) Permit Semi-Annual Report;
- AOC-65 SVE Operations and Monitoring Plan Update;
- Final June 2008 On-post Groundwater Monitoring Report;
- Final June 2008 Off-post Groundwater Monitoring Report;
- Final March 2008 On-post Groundwater Monitoring Report;
- Final March 2008 Off-post Groundwater Monitoring Report;
- Work Plan Addendum for AOC-68, AOC-69, and SWMU B-8;
- Work Plan for SWMU B-71 and AOC-64;
- Various correspondence to and from CSSA;
- Various meeting minutes; and
- Various tables of contents, site chronologies, and indices.

In an effort to improve the usability of the Environmental Encyclopedia, CSSA developed the online, interactive CSSA Environmental Summary (Site Management Plan). This summary operates along side the encyclopedia and gives a brief overview of past efforts, current status and planned actions. This summary includes active links to the encyclopedia and other appropriate web sources and will be periodically updated as work progresses. The CSSA Environmental Summary is available through password-protected access on the Environmental Encyclopedia home web page (www.stanley.army.mil).

Facility Investigations

An investigation of the facility is being conducted to:

- Characterize the environmental setting of the facility;
- Define the source(s) of contamination;
- Define the nature and extent of contamination; and
- Identify actual or potential receptors.

In some cases, multiple investigational phases may be necessary. Investigation results will be used to develop and evaluate alternatives during the Corrective Measures Study. All investigation activities are being conducted in accordance with the RFI WP discussed above.

Completion of the facility investigations for the planned RFI tasks is partially funded. **Attachment 2** indicates the sites for which investigations have been initiated with site status as well as sites that have been identified, but not yet investigated. The Facility Investigations

subtask makes up approximately 40 percent of the RFI phase. As of the end of Period 33, this task is approximately 75 percent complete.

A total of 84 SWMUs, AOCs, and Range Management Units have been identified at CSSA, and investigations have been conducted at 69 of those sites. A summary of the status of each site, including whether the site is recommended for closure or if closure is approved, is provided in **Attachment 2**. To date, Risk Reduction Standard 1 closure of 39 CSSA sites has been approved by Texas Commission on Environmental Quality (TCEQ), and ten sites were either delisted or granted No Further Action status.

SWMU and AOC Investigations

The Facility Investigation subtask makes up approximately 40 percent of the RFI phase. As of the end of Period 33, this task is approximately 75 percent complete.

SWMU B-71, AOC-63, and AOC-64

Site investigations at SWMU B-71, AOC-63, and AOC-64 are funded under United States Army Corps of Engineers (USACE) Contract No. DACA56-04-D-2006, task order (TO) No. DY01-Weston.

Soil sampling/analyses at AOC-63 identified low levels of benzene. An Affected Property Assessment Report (APAR) for AOC-63 has been prepared and was submitted to TCEQ in October 2008. The APAR documents chemical of concern (COC) delineation activities and site-specific protective concentration level (PCL) development. Based on the assessment, no threat to human health or the environment is presented by COC concentrations at AOC-63 and no further investigation or corrective action is recommended for the site.

Interim removal actions are currently being conducted at AOC-64 and SWMU B-71 to address munitions debris and affected soil. Through December 31, approximately 6,000 cubic yards (CY) of soil, rock, spent munitions, and miscellaneous metal debris have been excavated, screened, and stockpiled at these sites. Results of the stockpile characterization and cleanup confirmation sampling are pending. It is anticipated that the majority of excavated soil will be taken to the East Pasture Range and incorporated into the firing berm area. The remaining material will be taken to an authorized landfill or recycling facility, as agreed at the December 11, 2008 meeting attended by TCEQ and USEPA.

SWMU I-1

A Release Investigation Report (RIR) was submitted to TCEQ and USEPA in July 2008 to request no further action status. TCEQ approved closure of SWMU I-1 in November 2008.

AOC-67 and AOC-68

After soil removal, nine confirmation samples were collected at AOC-67 and submitted to Agriculture & Priority Pollutants Laboratories, Inc. (APPL) for lead analysis and six samples were collected at AOC-68 and submitted for volatile organic compounds (VOC), semi-volatile

organic compounds (SVOC), and metals analysis on December 6, 2007. Results indicated that some impacted soil remained on the western side of AOC-68 and the bottom ditch area of AOC-67 and AOC-68. An additional sampling event was conducted on April 10, 2008 to determine the vertical extent of COCs in bottom samples at AOC-67/68. Results of analysis indicate that additional removal action on the western side of AOC-68 is necessary.

Additional excavation activities were conducted at AOC-68 in November 2008. Approximately 10 additional cubic yards of soil from AOC-68 was placed into a rolloff container near the site. Two confirmation samples were collected in November 2008. The results indicated that lead-contaminated soil remains in one area; additional excavation activities will be conducted during Period 34. The investigation derived waste was disposed of off-post at Waste Management's Covel Gardens landfill facility.

AOC-69

During the previous period, ten soil samples were collected from AOC-69 and analyzed for VOCs, explosives, and CSSA metals. The surface of the site was also inspected for evidence of munitions debris, and none was found. Soil samples indicated concentrations above background/Tier 1 residential PCLs for lead at three locations. Additional soil samples were collected to delineate the extent of contamination. In November 2008, approximately 400 CY were excavated and waste characterization and confirmation samples were collected. The results indicate that the excavated material meets Class 2 nonhazardous criteria for disposal at Waste Management's Covel Gardens landfill facility. Additional confirmation samples will be collected when the removal actions are completed. It is anticipated that an RIR will be submitted during Period 34.

AOC-73

Work at SWMU B-73 included removal of debris, trash, and soil. On March 3, 2008, after removal was complete, ten samples were collected and submitted to APPL for the nine CSSA-analyzed metals, SVOCs, and VOC analysis. Additionally, one waste characterization sample was collected and submitted for toxicity characteristic leaching procedure metal analysis and total petroleum hydrocarbons from approximately 120 cubic yards of trash and soil media for disposal. Results of analysis indicated that no contaminants exist in the remaining soil media at AOC-73. Waste and soil media identified for disposal met Class 2 non-hazardous criteria and were removed to Waste Management's Covel Gardens landfill facility. An RIR requesting no further action was submitted to TCEQ and USEPA in September 2008.

SWMU B-2, B-8, B-20/21 & B-24

Removal actions were initiated at SWMU B-2 and SWMU B-8 to remove impacted soil media previously identified above Texas Risk Reduction Program (TRRP) Residential PCLs. Additionally, investigation of an eastern area of SWMU B-24 for a suspected disposal trench was accomplished during March 3, 2008 through March 7, 2008. Approximately 60 cubic yards of soil media from SWMU B-2 were removed and disposed of as Class 2 non-hazardous media at Covel Gardens landfill facility. Confirmation samples from SWMU B-2 were collected March 5, 2008. Results of analysis indicate that no remaining soil media are above TRRP

residential PCLs. As agreed during the December 11, 2008 meeting with TCEQ and USEPA, an RIR will be submitted for SWMU B-2 during Period 34.

Approximately 2,500 cubic yards of barium, copper, lead, and zinc impacted soil media were excavated from SWMU B-8 during March 10 through March 14, 2008. Approximately 1,000 cubic yards of impacted media within SWMU B-8 met RCRA hazardous criteria for lead of which 200 cubic yards also exceeded hazardous criteria for barium.

Approximately 600 cubic yards were stabilized with phosphate-induced metal stabilization material resulting in a Class 1 non-hazardous media. A letter of intent to move the non-hazardous lead impacted media to CSSA's active firing range berm was sent to the TCEQ on April 24, 2008. TCEQ acknowledged the intent for movement of the impacted media by letter dated May 9, 2008. Removal of approximately 2,100 cubic yards of non-hazardous lead impacted media was initiated May 12, 2008 and was completed on May 22, 2008. Approximately 400 cubic yards of lead and barium impacted soil media remain at SWMU B-8 for future treatment and placement on the east pasture firing range berm. Confirmatory samples from the removal area at SWMU B-8 were collected on June 23, 2008 and analyzed for metals. Additional PIMS material has been ordered for treating the remaining 400 CY of lead and barium impacted soil before it is moved to the firing range berm. Additional sampling is planned for characterization of the site.

Investigation of the eastern area of SWMU B-24 for an additional trench was conducted during the week of March 3 through March 7, 2008. Investigation included screening for potential unexploded ordnance (UXO) followed by excavation of the suspected area. Results of the investigation concluded that the area has no visible waste and is not a disposal trench. Fourteen samples for CSSA nine metals, SVOC, and VOCs were collected in the SWMU B-24 area (including the suspected eastern trench area) to define the lateral extent of the unit and identify any areas exceeding TRRP residential PCLs on June 25, 2008. Results indicate that metals concentrations in remaining soils exceed residential PCLs. Based on the December 11, 2008 meeting presentation, it was agreed that the following actions should be conducted at SWMU B-24 before an APAR is prepared: move non-hazardous soils to the range berm (approximately 2,000 CY), remove munitions scrap and rock pile, conduct geophysical survey of site, remove soil to Tier 1 PCLs and ecological PCLs, conduct UXO removal (as necessary), and perform confirmation soil sampling.

To define the lateral extent and identify any areas exceeding TRRP residential PCLs, eleven samples from SWMU B-20/21 were collected on June 23, 2008 and analyzed for the nine CSSA metals. Results indicate that metals concentrations in remaining soils exceed residential PCLs. Based on the December 11, 2008 meeting presentation, it was agreed that the following actions should be conducted at SWMU B-20 before an APAR is prepared: move PIMS-treated soils to the range berm face, conduct geophysical survey of site, remove soil to Tier 1 PCLs and ecological PCLs, conduct UXO removal (as necessary), conduct surface sweep (vacuum) for small arms/MD to the southeast of the site, and perform confirmation soil sampling.

Groundwater Investigation

The groundwater investigation subtask makes up approximately 15 percent of the RFI phase. As of the end of Period 33, this task is approximately 80 percent complete.

On- and off-post groundwater monitoring was conducted in accordance with the regulator-approved DQOs during Period 33. Sampling frequencies for on-post wells are determined by the long term monitoring optimization (LTMO) study completed in May 2005, as approved by TCEQ and USEPA. Based on the LTMO recommendations, on-post wells are sampled either quarterly, semi-annually, or biennially (every two years). Off-post wells are not included in the LTMO recommendations and are sampled quarterly under the DQOs and the CSSA Off-Post Monitoring and Response Plan. A map of the well locations is provided in **Attachment 1** of this report.

The analyte list for each monitoring event was in accordance with the applicable WPs and DQOs. On- and off-post monitoring wells and Westbay-equipped wells were sampled for the SW-846 Method 8260B VOCs 1,1-dichloroethene (1,1-DCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE), *trans*-1,2-dichloroethene, tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride (VC). On-post monitoring wells were sampled for the SW-846 Method 6010/6020 metals lead, cadmium, mercury, and zinc. Additional samples were collected off-post from the wells with GAC filtration systems. Samples were analyzed by APPL in Fresno, California. Parsons' chemists validated and verified the data in accordance with the CSSA Quality Assurance Program Plan (QAPP). All detected concentrations of VOCs and metals are presented in **Attachment 4**.

June 2008 Sampling

Laboratory results for the June 2008 event were not included with the Period 32 Progress Report submitted in July 2008 because they were not yet available. The results are included in **Attachment 4**. The action level (AL) for lead was exceeded in on-post well CS-9. No on-post monitoring wells exceeded the MCL for VOCs in June 2008. The MCL was exceeded in off-post wells OFR-3 and RFR-10 for PCE and TCE; however, these wells have been equipped with GAC filtration systems since 2001.

September 2008 Sampling

Twenty-eight on-post monitoring wells and the LGR zones of the four southern Westbay-equipped wells were sampled in September 2008. Off-post wells sampled in September 2008 included 23 private and public off-post drinking water wells with six post-GAC samples.

In September 2008 well CS-11 had a detection of lead at a concentration of 197 micrograms per liter ($\mu\text{g/L}$) which exceeded the drinking water AL of 15 $\mu\text{g/L}$. No other on-post well had concentrations of lead above the AL or MCL in September 2008.

VOC MCLs were exceeded in on-post monitoring wells CS-D, CS-MW1-LGR, CS-MW16-LGR, and CS-MW16-CC for the analytes PCE, TCE, and/or *cis*-1,2-DCE. Westbay-equipped wells CS-WB01, CS-WB02, CS-WB03, and CS-WB04 had exceedances of either PCE

and/or TCE in various intervals. PCE exceeded the MCL in wells OFR-3 and RFR-10 in September 2008. Both wells are equipped with GAC treatment systems. These two wells are the only off-post wells to have had above-MCL detections thus far in 2008. In November 2008 routine maintenance was performed on the GAC treatment systems installed at LS-6, LS-7, OFR-3, RFR-10, and RFR-11.

December 2008 Sampling

Nine on-post wells were sampled in December 2008. Off-post wells sampled in December 2008 included 27 private and public off-post drinking water wells. Sampling was conducted between December 1 and 12, 2008. Laboratory results will be received in January 2009 and summarized in the next progress report.

On-Post GAC Systems

CSSA operated and maintained the permitted on-post GAC unit at Outfall 002 and the permitted discharge at Outfall 004 this period. A Discharge Monitoring Report is submitted each month the system operates to comply with Texas Pollution Discharge Elimination System permit requirements. No discharge occurred at either outfall this period.

Off-Post GAC Systems

Based on sampling results received in 2001 and 2002 indicating VOC levels above or approaching the MCL, GAC filtration systems were installed at seven off-post wells. In accordance with the CSSA Off-Post Monitoring Program Response Plan dated June 2002 and the Groundwater Monitoring DQOs, the off-post GAC filtration systems are maintained by CSSA and sampled every six months. Monthly O&M activities for the off-post residential GAC filtration systems were performed this period. Work included inspection and replacement, as needed, of the pre- and post-GAC filters at wells LS-6, LS-7, RFR-10, RFR-11, and OFR-3. Confirmation samples from systems installed at wells LS-6, LS-7, OFR-3, RFR-10 and RFR-11 were collected in September 2008. All results for the post-GAC water samples were non-detect. Carbon canister exchange was completed in November 2008 for the off-post GAC systems.

Data Validation and Verification

Laboratory results from sampling efforts and investigations are validated and verified by Parsons' chemists to ensure results are in compliance with CSSA QAPP requirements. Data validation and verification continued during Period 33 under CSSA projects DY01-Parsons, DY02-Parsons, DO11-Parsons, and Hankins & Anderson (H&A) Parsons. Parsons chemists processed 53 data packages during Period 33 including:

- Two related to DY01-Parsons sampling activities;
- Forty-four related to DY02-Parsons sampling activities, including bioreactor monitoring and quarterly groundwater monitoring;
- Four related to DO11-Parsons sampling activities, including bioreactor monitoring; and
- Three related to environmental program activities on H&A-Parsons.

DY01-Parsons data packages included sampling events for the SWMU and AOC investigations conducted. DY02-Parsons data packages covered sampling conducted for the bioreactor treatability study and quarterly groundwater monitoring. H&A-Parsons sampling conducted included waste characterization and miscellaneous sampling required for the environmental program. Data packages were validated and verified in accordance with specific project DQOs and the CSSA QAPP.

Treatability Studies

The Treatability Study subtask makes up approximately 10 percent of the RFI phase. As of the end of Period 32, this task is approximately 46 percent complete.

SWMU B-3 Bioreactor Treatability Study

SWMU B-3 Bioreactor Performance Status Reports were submitted to CSSA, TCEQ and USEPA on a semi-annual basis during Period 33. A total of 10,523,698 gallons of groundwater extracted from CS-MW16-LGR and CS-MW16-CC have been injected into bioreactor trench 1 since the start of injection. A semiannual Underground Injection Control (UIC) report for the period, in accordance with CSSA's Class V Aquifer Remediation Injection Well Permit, TCEQ Authorization No. 5X2600431; WWC12002216 was submitted to the TCEQ during period 33 on December 3, 2008. On July 31, 2008, TCEQ approved a modification to data collection requirements and a decrease in reporting frequency.

Groundwater samples were collected from sumps, monitoring wells, Westbay-equipped wells, and from the injection discharge. Sampling frequency was based on permit requirements and water availability. In general, injected groundwater samples are collected monthly and monitoring samples from the Westbay-equipped monitoring wells and injection trench sumps are collected quarterly. All samples were analyzed for permit parameters – VOCs, total dissolved solids, and other selected performance parameters. Analyses were performed by APPL, DHL Laboratory, and Microseeps Laboratory. Collected field data included injection volumes, injection pressures and the pH of recovered groundwater for TCEQ permit compliance. Results are reported semi-annually. Analytical data collected for performance parameters include;

- Dissolved Organic Carbon
- Methane, Ethane, Ethene
- Hydrogen
- Temperature, pH, specific conductivity
- Oxidation Reduction Potential
- Dissolved Oxygen
- Total organic carbon
- Carbon Dioxide
- Hydrogen Sulfide
- Alkalinity
- Nitrogen, Nitrate + Nitrite
- Additional ions including Sulfate, Chloride, Ferrous Iron, Manganese
- Dehalococcides populations, and
- Isotopic ratio analyses.

During period 33 (July through December 2008), rainfall has been minimal at the bioreactor site. The bioreactor is kept at saturated conditions by continually supplying supplemental water. An additional extraction well will be drilled at SWMU B-3 during Period 34.

Monitoring results indicate that the bioreactor is effectively treating injected groundwater, but that a significant amount of VOC components remain in the strata adjacent to and below the bioreactor trenches. *cis*-1,2-DCE (a product of reductive dechlorination of highly chlorinated species such as PCE and TCE), and minor amounts of fuel components such as toluene are being identified in groundwater samples surrounding the bioreactor. Degradation products, vinyl chloride and ethene, were present within the bioreactor and ethene was detected in Westbay-equipped well CS-WB05 and CS-WB06 during the period monitoring events. Ethene represents one of the final degradation products of attenuated chlorinated solvents. In addition, elevated manganese levels may suggest that abiotic degradation is also on-going at the site. At the December 11, 2008 meeting, it was agreed that the following actions are appropriate at the bioreactor:

- Install an additional extraction well at SWMU B-3 to allow greater bioreactor influence on vadose zone intervals. An additional well may be installed at SWMU O-1 in the future, pending funding availability.
- Install six to eight additional shallow monitoring wells near SWMU B-3 to monitor possible contaminants emanating from the bioreactor.
- Continue monitoring of bioreactor for another year.
- Perform water tracer study in bioreactor trench 6 to determine the potential migration pathways of contaminants from the bioreactor.

AOC-65 SVE System

Monthly monitoring of the AOC-65 SVE system has been ongoing since April 2008. Initial monitoring results indicate no exceedances of PBR limits occurred for the SVE system. Air samples were collected from the AOC-65 SVE system during Period 33 and analyzed for VOCs. Results are currently being reviewed and will be reported within the Annual SVE Operation and Monitoring/Maintenance Report expected in Period 35. At the December 11, 2008 meeting, it was agreed that the following actions are to be accomplished for the AOC-65 treatability study:

- Prepare report, white paper, consolidating the findings associated with potential risks to indoor air quality and breathing air.
- Continue monitoring AOC-65 SVE system for an additional 6 month period following completion of annual SVE monitoring event expected in Period 35.

The system is expected to operate in Period 34, with continued monthly monitoring. The SVE Operation and Monitoring/Maintenance Plan was updated during Period 33.

SUMMARY OF CONTACTS

Letters summarizing results of the June 2008 and September 2008 off-post groundwater monitoring event were mailed to owners of the off-post wells in period 33. Additional contacts with TCEQ or USEPA regarding Order-related activities occurred this period:

Correspondence:

- June 26, 2008 TCEQ approval of Closure of AOC-55;
- July 31, 2008 TCEQ approval of Amendment of Authorization of Class V Aquifer Remediation Injection Wells, TCEQ Authorization No. 5X2600431;
- November 7, 2008 TCEQ approval of Closure of SWMU I-1; and
- December 3, 2008 Submittal of UIC Authorization 5X2600431 Semi-Annual Report to TCEQ for Period May through October 2008.

Meetings:

- July 10, 2008 Environmental program status update meeting held at CSSA. Attended by Mr. Greg Lyssy, USEPA; Mr. Sonny Rayos and Mr. Jorge Salazar, TCEQ; Ms. Glare Sanchez, CSSA; as well as representatives of Portage, Noblis, Parsons, and Weston.
- December 11, 2008 Environmental program status update meeting held at Parsons office in Austin. Attended by Mr. Greg Lyssy, USEPA; Mr. Sonny Rayos and Mr. Jorge Salazar, TCEQ; Ms. Glare Sanchez, CSSA; as well as representatives of Portage, Noblis, Parsons, and Weston.

Copies of all correspondence and meeting minutes are included in **Volume 1-7** of the **Environmental Encyclopedia**.

PROJECTED WORK FOR THE NEXT PERIOD

Groundwater Monitoring

Continued sampling of on and off-post monitoring and water supply wells will continue in March and June 2009. Quarterly and annual groundwater monitoring reports will be submitted next period. The O&M at the residential GAC filtration systems (LS-6, LS-7, OFR-3, RFR-10, and RFR-11) will be conducted every three weeks during Period 34.

AOC-65 SVE System Operations

AOC-65 SVE system O&M will continue in Period 34. The system includes four blowers operating continuously, and O&M of those systems will be performed in accordance with the Updated O&M Manual for SVE Systems at CSSA. Monitoring is expected to occur twice monthly, monthly, and semi-annually. A white paper will be prepared consolidating data

regarding the potential impacts of indoor air quality and breathing zone air within the groundwater plume 2 area.

SWMU and AOC Investigations

Investigations, interim removal actions, and/or reporting will be continued for SWMUs B-2, B-8, B-20/21, B-24, B-71, AOC-64, AOC-67, AOC-68, and AOC-69. Reports summarizing investigation results will be submitted. No Further Action APARs will be prepared during upcoming year.

SWMU B-3 Bioreactor Treatability Study Monitoring

Monitoring of the bioreactor at SWMU B-3 will be continued during Period 34 and an additional extraction well will be installed. Monitoring requirements will be performed to meet TCEQ's UIC authorization requirements. Performance monitoring data will be collected in accordance with the updated Bioreactor O&M Manual.

A new extraction well and six to eight shallow monitoring wells will be installed and monitored in accordance with the updated Bioreactor O&M Manual. Additionally a water pressure study (tracer test using water) will be conducted at the Bioreactor to determine potential flow paths of contaminants within the underlying shallow vadose zone.

MEETINGS

A status meeting will be held with TCEQ and USEPA in April 2009.

**Table 2, Project Task Completion to Date for Open Projects Only
 (Values updated through December 31, 2008)**

Project Number	Description of Task	Relation to Order	Percent Complete	Start/End Dates
Previously completed TOs:				
Order 37	UST Investigations	NA	100%	1991-1995
Order 52	Investigation of F-14	I/SM/RFI	100%	1992-1993
Order 67	Groundwater sampling, Water Well Inventory, Hydrogeologic Report	I/SM/RFI	100%	1992-1996
Order 71	Environmental Assessment	I/M	100%	1992-1993
Order 126	B-20, F-14 Investigations, Background Soils Study	RFI	100%	1994-1996
RL17	Geophysical surveys, Well Installations Soil Sampling and Groundwater sampling	I/SM/RFI	100%	1995-2003
RL33	Site investigations, B-20 treatability studies and unexploded ordnance investigation	RFI	100%	1996-2002
Order 23	Groundwater Sampling	RFI	100%	1996-1998
RL53	SWMU and AOC Investigations	RFI	100%	1997-2003
RL83	Geophysical Surveys	RFI	100%	1999-2003
RL74	Current Conditions Report, Community Relations, Groundwater Monitoring	RFI	100%	1999-2001
DO5068	Soil Gas Surveys	RFI	100%	1999-2002
DO23	Groundwater Monitoring	RFI	100%	1998-2001
DO5084	Building 90 Investigation, Groundwater Monitoring	RFI	100%	2000-2003
TO0058	Treatability Study for AOC-65	RFI	100%	2001-2005
TO0042	Well Installations and Groundwater Monitoring	I/SM/RFI	100%	2001-2006
TO0017	East Pasture Removal Action	Other	100%	2005-2006
TO0019	SWMU Closures	RFI	100%	2003-2006
TO0005	Environmental Program Technical Support	I/SM/RFI	100%	2003-2007
TO0098	Miscellaneous Studies	Other	100%	2004-2007
TO0008	Groundwater Monitoring	I/SM/RFI	100%	2003-2008
TO0006	SWMU B-3 and AOC-65 Remediation	I/SM/RFI	100%	2004-2008
TO0207	Environmental Support, Groundwater Monitoring	I/SM/RFI	100%	2006-2008
DY01 (Weston)	Affected Property Assessment Investigations	RFI	100%	2006-2007
Current TOs:				
DY01 (Parsons)	Environmental Compliance, SWMU and AOC closure Investigations	RFI		August 2006 to June 2009
	Kickoff meeting/Data Management	RFI	100%	
	Work Plans	RFI	100%	
	Inner Cantonment Site Investigation	RFI	80%	
	North Pasture Site Investigations	RFI	56%	
	Environmental Support	RFI	11%	

Project Number	Description of Task	Relation to Order	Percent Complete	Start/End Dates
	Recordkeeping	RFI	29%	
	Title 2 Services	RFI	74%	
	Project mgmt	RFI	75%	
	Bioaugmentation Injection	RFI	100%	
	Bird Survey	Other	100%	
	Hazardous Waste Management Plan	Other	50%	
	EMS Documentation	Other	2%	
	Ecological Risk Assessment	RFI	80%	
DY02 (Parsons)	Environmental Compliance, SWMU and AOC closure Investigations	RFI		August 2007 to February 2009
	Groundwater Monitoring	I/SM/RFI	89%	
	Water Supply Well	Other	71%	
	SWMU B-3 Bioreactor O&M	RFI	100%	
	SVE Treatability Study	RFI	60%	
	Project Management	RFI	89%	
DY02 (Weston)	Removal Action	RFI		August 2007 to December 2008
	Plan Preparation and Mobilization	RFI	100%	
	AOC-64 Interim Removal Action	RFI	75%	
	Interim Removal Action Reporting	RFI	0%	
H&A (Parsons)	Administrative Support and Environmental Services			March 2008 to February 2009
	Administrative Record, LAN & GIS and USEPA Progress Reports	RFI	28%	
	Miscellaneous Sampling	Other/RFI	52%	
	Project Management	RFI	45%	
DO11 (Parsons)	Environmental and Groundwater Investigations			September 2008 to April 2010
	Groundwater Monitoring	RFI	1%	
	Treatability Study Systems Operation	RFI	8%	
	Corrective Measures Study	CMS	0%	
	Administrative Record and Progress Reports	RFI	0%	
	Site Investigations/Closures	RFI	15%	
	Environmental Program Support	RFI	4%	
	Environmental Infrastructure	RFI	2%	
	Task Order Mgmt	RFI	15%	

Table 3, Project Team Contact Information

Name	Organization/Role	Street Address	City, State, Zip	Phone No.	Fax No.	E-mail
Beal, Christopher	CSSA/Portage Environmental, Geologist and Environmental Assistant	c/o Environmental Office, 25800 Ralph Fair Road	Boerne, TX 78015-4800	(210) 336-1171	(210) 295-7386	bealc@envirodept.net
Burdey, Julie	Parsons, Project Mgr. TO0019, TO0098, DY01	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6062	(512) 719-6099	julie.burdey@parsons.com
Chang, Tammy	Parsons, Senior Scientist	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6092	(512) 719-6099	tammy.chang@parsons.com
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Lyssy, Greg	USEPA, Project Manager	1445 Ross Avenue (6PD-N)	Dallas, TX 75202-2733	(214) 665-8317	(214) 665-6660	lyssy.gregory@epa.gov
Mitchell, Stephen	Weston, Project Manager	2705 Bee Caves Road, Suite 100	Austin, TX 78746	(512) 651-7100	(512) 641-7101	s.mitchell@westonsolutions.com
Pearson, Scott	Parsons, Task Mgr	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6087	(512) 719-6099	william.scott.pearson@parsons.com
Rayos, Sonny	TCEQ, Project Mgr	P.O. Box 13087, MC-127	Austin, TX 78711-3087	(512) 239-2371		Srayos@tceq.state.tx.us
Rice, Ken	Parsons, Task Mgr	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6050	(512) 719-6099	ken.r.rice@parsons.com
Salazar, Jorge	TCEQ	14250 Judson Road	San Antonio, TX 78233	(210) 403-4059		jsalazar@tceq.state.tx.us
Sanchez, Glaré	CSSA Environmental Program Manager	25800 Ralph Fair Road	Boerne, TX 78015-4800	(210)698-5208	(210) 295-7386	sanchezg@envirodept.net
Shirley, Jason (LTC, retired)	CSSA Installation Manager	25800 Ralph Fair Road	Boerne, TX 78015-4800	(210) 295-7416	(210) 295-7386	
Vanderglas, Brian	Parsons, Project Mgr. for AETC DO5084, TO0058	8000 Centre Park Dr., Suite 200	Austin, TX 78754	(512) 719-6059	(512) 719-6099	brian.vanderglas@parsons.com
Vaughn,	Parsons, Project Mgr.	8000 Centre Park Dr.,	Austin, TX 78754	(512) 719-6816	(512) 719-6099	kimberly.vaughn@parsons.com

Name	Organization/Role	Street Address	City, State, Zip	Phone No.	Fax No.	E-mail
Kimberly		Suite 200				

ATTACHMENT 1
ON-POST AND OFF-POST SAMPLED WELLS FIGURE

ATTACHMENT 2
SUMMARY OF STATUS OF EACH SWMU/AOC SITE

Attachment 2

Summary of Solid Waste Management Units
and Area of Concern Status Table

Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved by	Closure Type
				RRS1	NFA	Delisting	TRRP		
B-1	Powder and ammo burn area (1954).	RFI/Closure Report July 2002	NA	X				November-02	RRS1
B-2	Small arms ammunition burning area (1954) - North Pasture	RFI/closure Report June 2002 Closure Report March 2005	Currently under investigation						
B-3	Landfill area (garbage disposal and burning trash); filled in 1990-91.	RFI Report March 2005	Continue bioreactor treatability study						
B-4	Classified burn area (documents and trash).	RFI Report June 2002	Removal of waste in trench and confirmation sampling						
B-5	Possible fired small arms ammo brass area. Not located.	RFI/Closure Report July 2002	NA	X				October-02	RRS1
B-6	Possible solid waste disposal area.	RFI/Closure Report July 2002	NA	X				October-02	RRS1
B-7	Possible fired small arms ammunition brass disposal area	RFI/Closure Report July 2002	NA	X				October-02	RRS1
B-8	Fired small arms ammo brass disposal area (piles of fire bricks, ammo shells) - North Pasture	RFI Report December 2003	Currently under investigation						
B-9	Miscellaneous solid waste (metal and weapons) disposal area.	RFI/Closure Report September 2002	NA	X				March-03	RRS1
B-10	Ammunition disposal area.	RFI/Closure Report May 2003	NA	X				January-04	RRS1
B-11	Miscellaneous solid waste disposal (ammo, scrap metal, const. debris).	RFI Closure Report June 04	NA	X				September-04	RRS1
B-12	Landfill, WPA trash when igloos were being built	RFI Report April-05	NA	X				July-05	RRS1
B-13	Trash dump area.	RFI Report June 2002	Excavation of waste and surface sampling.						
B-14	Possible fired brass area - not located.	Delisting Request November 2007	NA			X		February-08	Delisting
B-15/16	Landfill (target vehicles, weapons mounts)	RFI Report October 2002	Removal of debris and sampling						
B-19	Solid waste disposal area (metals and weapons).	RFI/Closure Report June 2002	NA	X				September-02	RRS1
B-20/21	Former OB/OD area & ammunition disposal areas - North Pasture	RFI Report July 2002 Combined with B-20	Currently under investigation						
B-22	Burn area (artillery shells).	RFI/Closure Report August 2002	NA	X				December-02	RRS1
B-23	Disposal trenches (two green canisters)	RFI Report April 2005	NA	X				July-05	RRS1
B-23A	Disposal Trench (glass ampoules of liquid)	RFI Closure Report September 2004	NA	X				March-05	RRS1

Attachment 2

Summary of Solid Waste Management Units
and Area of Concern Status Table

Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved by	Closure Type
				RRS1	NFA	Delisting	TRRP		
B-24	Spent ammo/rockets area - North Pasture	RFI Report May 2002	Currently under investigation						
B-25	Possible disposal trench	RFI Report April 2005	NA	X				July-05	RRS1
B-26	Possible disposal trench	Delisting Report August 2004	NA			X		November-04	Delisting
B-27	Sanitary landfill, consisting of 5-6 trenches (6 ft deep, 3 ft wide).	RFI Report July 2002	Removal of waste and confirmation sampling						
B-28	Disposal trenches (molten metal, ammo, ammo parts)	RFI Report April 2002	Remediation of stockpile soils						
B-29	Solid waste disposal area (in old quarry)	RFI Report April 2005	NA	X				February-08	RRS1
B-30	Solid waste disposal area	RFI Report September 2004	NA	X				February-05	RRS1
B-31	Lead shot/sand pipe bedding	RFI/Closure Report July 2002	NA	X				November-02	RRS1
B-32	Lead shot/sand pipe bedding	RFI/Closure Report January 2003	NA	X				November-03	RRS1
B-33	Lead shot/sand pipe bedding	RFI Report September 2004	NA	X				November-04	RRS1
B-34	Maintenance pit floor drain and discharge point	RFI Report August 2002	Delineate contamination, disposal of soil				X		
B-71	Livestock area. Inner cantonment, SW of Well 16.	--	Investigated 2007 (Weston)						
Bldg 40	less-than 90-day accumulation container storage area	RFI/Closure Report September 2003	NA	X				January-04 and January-06	RRS1
Bldg 43	Inactive makeshift ammo demolition facility	RFI Report April 2005	NA	X				August-05	RRS1
DD	Dud ammunition disposal area	RFI Report January 2005	NA	X				April-05	RRS1
F-14	Hazardous waste storage area (<90-day)	RFI/Closure Report, 1995	NA	X				November-95	RRS1
I-1	Inactive incinerator (built in 1943), currently used for transformer storage	RFI Report February 2003	Investigated 2007/2008 (Parsons)				X	November-08	NFA
O-1	Waste liquid/sludge oxidation pond (1975)	RFI/Closure Report October 2000	NA	X				April-02	RRS1
Coal Bins	Coal bins (no longer in use)	Delisting Requested January 2003	NA			X		February-08	Delisting
AOC 35	Area immediately around Well 16. Northeast area of inner cantonment.	RFI/Closure Report October 2002	NA	X				February-03	RRS1
AOC 36	Area between Well 16 and B-3. Possible waste verified not present by magnetometer survey.	RFI/Closure Report April 2002	NA	X				August-02	RRS1

Attachment 2

Summary of Solid Waste Management Units
and Area of Concern Status Table

Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved by	Closure Type
				RRS1	NFA	Delisting	TRRP		
AOC 37	Livestock area. NW of Well 16 and N of Well D.	RFI/Closure Report June 2004	NA	X				January-05	NFA
AOC 38	Livestock area. Inner cantonment, SW of Well 16.	RFI Report September 2004	NA	X				February-05	RRS1
AOC 39	None. Area west of Well 16 between North Outer Rd and cantonment fence.	RFI/Closure Report April 2002	NA	X				September-02	RRS1
AOC 40	None. Area east of Well 16 between North Outer Rd and cantonment fence.	RFI/Closure Report May 2002	NA	X				August-02	RRS1
AOC 41	Gate area east of well 16. North Pasture, north of gate 6.	No Further Action Report April 2005	NA		X			July-05	NFA
AOC 42	None. South of SWMUs B-28 and B-19, west of B-4.	RFI Report October 2002	Excavation and sampling.						
AOC 43	Shallow trench without mounds. Metal, UXO. Located 50 ft south of B-7.	RFI/Closure Report October 2002	NA	X				February-03	RRS1
AOC 44	Fox holes and trenches south of B-9 along west slope of hill. UXO includes Stokes mortars and 20-lb bombs.	Delisting Report April 2005	NA			X		July-05	Delisting
AOC 45	Flat area with spent and undamaged bullets. Located east of B-31, near bend in road.	--	--						
AOC 46	Bermed area with stockpile of lead shot and sand. Located south of Engineering on east side of Thompkins Road.	RFI/Closure Report April 2005	--	X				July-05	RRS1
AOC 47	Area of trenches and mounds (similar to B-15/16). South of B-15/16, in SW area of East Pasture.	RFI/Closure Report June 2002	NA	X				September-02	RRS1
AOC 48	Three N-S trending mounds and a construction debris pile. Located north of B-15/16.	Delisting Report August 2004	NA			X		November-04	Delisting
AOC 49	Trench (4 x 7 ft) without surficial debris. Located SW of deer stand 41 in central East Pasture.	Delisting Report April 2005	NA			X		July-05	Delisting
AOC 50	Area with orange discolored material (most likely nickel penetrate) at ground surface. South of B-30 along gravel road.	RFI/Closure Report January 2005	NA	X				April-05	RRS1
AOC 51	East pasture, east of active range, approximately 25 acres, area around B-9	--	--						
AOC 52	Area west of B-4 towards Salado Creek near trees, two trenches	--	--						
AOC 53	Building foundation near B-27 at Central Road and road to "D" Tank, batteries at rear of slab	RFI/Closure Report April 2005	NA	X				July-05	RRS1
AOC 54	Area near gutting pit, east of Welding Shop Building, right side of road batteries were stored in the area	Closure Report July 2004	NA	X				November-04	RRS1
AOC 55	Landfill, south of Tenberg Drive, east of Salado Creek	RFI/Closure Report Feb 04	RRS1 Closure	X				June-08	RRS1

Attachment 2

Summary of Solid Waste Management Units
and Area of Concern Status Table

Unit No.	Description	Investigation Report(s)	Recommendations	Requested Action				Closure Approved by	Closure Type
				RRS1	NFA	Delisting	TRRP		
AOC 56	Landfill, at intersection of Bernard Road and East Outer Road, surface depression on south side of intersection	Closure Report June 04	NA	X				September-04	RRS1
AOC 57	East of Building 98 and KOA Area, cleaning/maintenance activities performed at temporary structures	--	--						
AOC 58	Suspected disposal trench within Inner Cantonment	RFI Report October 2002	Investigate anomaly						
AOC 59	Trench-type anomaly located west Test Pad in the East Pasture	--	--						
AOC 60	Trench located west of tunnel and entrance roadway in the East Pasture.	Delisting Report April 2005	NA			X		July-05	Delisting
AOC 61	Suspected landfill	RFI/Closure Report October 2002	NA	X				February-03	RRS1
AOC 62	Located west of monitoring well MW-2 and east of Salado Creek.	--	--						
AOC 63	Area consisting of 3 barrels containing rocks, south of deer stand 41 in the East Pasture.	--	Currently under investigation				X		
AOC 64	Area east of SWMU B-4; flares observed in the area	--	Currently under investigation						
AOC 65	A concrete pit area that housed a metal vat that contained TCE and PCE.	RFI Report August 2003	Additional investigation, SVE remediation ongoing						
AOC 66	Area north of Well 16 in the outer cantonment.	Closure Report June 04	NA	X				February-05	NFA
AOC 67	Concrete pad near Building 90 housed a vat containing cleaning solvents.	RFI Report August 2002	Currently under investigation						
AOC 68	Area includes metal slag/debris storage area from Wheelabrator operations next to Building 90-2.	--	Currently under investigation						
AOC 69	Located on west side of CSSA.	--	Currently under investigation						
AOC 70	Building used to mix pesticides. Near Building 1.	--	--						
AOC 72	Area containing concrete, possible asbestos. Located east of Building 94, in SW CSSA.	--	--						
AOC 73	Ranch landfill with overgrown trenches. Near Well 11, in northwest corner of CSSA.	--	Currently under investigation				X		

ATTACHMENT 3
OVERALL H ORDER PERCENT COMPLETE

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Project	% of Phase	% Complete	% of Activity Complete	% of Task Complete
Interim Measures	30%				99%
Interim Measures Work Plan		7%	100%	7.0%	
Interim Measures Implementation Reports		70%	99%	69.3%	
		23%	100%	22.9%	
RCRA Facility Investigation	30%				75%
Preliminary Report		5%	100%	5%	
RFI Workplan		5%	100%	5%	
Facility Investigation		40%	75%	30%	
Risk Assessment		10%	89%	9%	
Investigation Analysis		10%	84%	8%	
Groundwater Investigation		15%	80%	12%	
Treatability Studies		10%	46%	5%	
Progress Reports		5%	28%	1%	
Corrective Measures Study	10%				0%
Identify and Develop Alternatives		15%	0%	0%	
Evaluate Alternatives		60%	0%	0%	
Reports		25%	0%	0%	
Corrective Measures Implementatio	30%				0%
Implementation Program Plan		5%	0%	0%	
Corrective Measure Design		15%	0%	0%	
Corrective Measure Construction		70%	0%	0%	
Reports		10%	0%	0%	
% of Phase Complete					52.31%

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
1 Interim Measures Work Plan	7%					100.0%	
Draft IM Workplan		80%	100%	80%	0%		
Draft Final IM Workplan		15%	100%	15%	0%		
Final IM Workplan		5%	100%	5%	0%		
2 Interim Measures Implementation	70%	100%				99.0%	
Sample 3 Off-Site Wells		1%	100%	1%	0%		
Sample 20 Off-Site Wells (6 events)		6%	100%	6%	0%		(remaining off-post sampling conducted under the RFI task)
2000 Groundwater Monitoring (4 events)		4%	100%	4%	0%		
2001 Groundwater Monitoring (4 events)		4%	100%	4%	0%		
2002 Groundwater Monitoring (4 events)		4%	100%	4%	0%		
2003 Groundwater Monitoring (4 events)		4%	100%	4%	0%		
2004 Groundwater Monitoring (4 events)		4%	100%	4%	0%		
2005 Groundwater Monitoring (4 events)		4%	100%	4%	0%		
2006 Groundwater Monitoring		4%	100%	4%	0%		
2007 Groundwater Monitoring		4%	100%	4%	0%		
2008 Groundwater Monitoring		4%	100%	4%	0%		
Locate and map off-site wells		1%	100%	1%	0%		
O-1 Soil Borings		3%	100%	3%	0%		
O-1 Excavation, Stabilization, Diposal		12%	100%	12%	0%		
Establish Treatment Unit		1%	0%	0%	100%		may or may not be necessary.
Determine appropriate disposition of soil piles		5%	100%	5%	0%		After treatability studies.
Treat/dispose of soil piles		20%	100%	20%	0%		Unfunded CSSA future work.
AOC 50 Excavation and Disposal		3%	100%	3%	0%		Not included as IM in the Order.
AOC 65 Excavation and Disposal		8%	100%	8%	0%		
3 Reports	23%					99.6%	
Quarterly Progress Report 1 (August 1999)		0.83%	100%	0.83%	0%		26.56%
Quarterly Progress Report 2 (November 1999)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 3 (February 2000)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 4 (May 2000)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 5 (August 2000)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 6 (November 2000)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 7 (February 2001)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 8 (May 2001)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 9 (August 2001)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 10 (November 2001)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 11 (February 2002)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 12 (May 2002)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 13 (August 2002)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 14 (November 2002)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 15 (February 2003)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 16 (May 2003)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 17 (August 2003)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 18 (November 2003)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 19 (February 2004)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 20 (May 2004)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 21 (August 2004)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 22 (November 2004)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 23 (February 2005)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 24 (May 2005)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 25 (August 2005)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 26 (October 2005)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 27 (January 2006)		0.83%	100%	0.83%	0%		
Quarterly Progress Report 28 (April 2006)		0.83%	100%	0.83%	0%		
Semi-annual Progress Rpt 29 (Dec 2006)		0.83%	100%	0.83%	0%		
Semi-annual Progress Rpt 30 (July 2007)		0.83%	100%	0.83%	0%		
Semi-annual Progress Rpt 31 (Dec 2007)		0.83%	100%	0.83%	0%		
Semi-annual Progress Rpt 32 (July 2008)		0.83%	100%	0.83%	0%		
Draft O-1 IM Report		19%	100%	19%	0%		
Draft final O-1 IM Report		12%	100%	12%	0%		
Final O-1 IM Report		5%	100%	5%	0%		
Draft Soil Pile IM Report		20%	100%	20%	0%		
Draft Final Soil Pile IM Report		12%	100%	12%	0%		
Final Soil Pile IM Report		5%	100%	5%	0%		
% of Phase Complete						99.17%	

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
Preliminary Report	5%					100.0%	
Draft DCC Report		80%	100%	80%	0%		
Draft Final DCC Report		15%	100%	15%	0%		
Final DCC Report		5%	100%	5%	0%		
RFI Workplan	5%					100.0%	
Draft Community Relations Plan		25%	100%	25%	0%		
Draft Final CRP		5%	100%	5%	0%		
Final CRP (2006)		10%	100%	10%	0%		
Draft RFI Workplans		20%	100%	20%	0%		
Draft Final RFI Workplan		5%	100%	5%	0%		
Final RFI Workplans		5%	100%	5%	0%		
Final Work Plans (DY01)		10%	100%	10%	0%		
Draft Work Plans (DY02)		10%	100%	10%	0%		
Final Work Plans (DY02)		10%	100%	10%	0%		
Facility Investigation¹	40%	98%				74.9%	
Small Areas (0-2 acres in size)							
B-3 Investigation/Report		1.23%	50%	0.617%	50%		Final report submitted, additional work required.
B-4 Investigation/Report		1.23%	20%	0.247%	80%		Final report submitted. Additional work required.
B-5 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Oct 02.
B-6 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Oct 02.
B-7 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Oct 02.
B-8 Investigation/Report		1.23%	80%	0.988%	20%		Add'l investigation to be performed (DY01)
B-9 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Mar 03
B-10 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Jan 04
B-11 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Sept 04
B-12 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved July 05
B-13 Investigation/Report		1.23%	80%	0.988%	20%		Final report submitted. Additional work required.
B-15/16 Investigation/Report		1.23%	50%	0.617%	50%		Final report submitted. Additional work required.
B-19 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Sept 02
B-23 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved July 05
B-23A Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Mar 05
B-25 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved July 05
B-26 Investigation/Report		1.23%	100%	1.235%	0%		Delisting approved November 04
B-27 Investigation/Report		1.23%	80%	0.988%	20%		Final report submitted, additional work required
B-28 Investigation/Report		1.23%	80%	0.988%	20%		Final report submitted, additional work required
B-30 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Feb 05
B-31 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Nov 02
B-32 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Nov 03
B-33 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Nov 04
B-34 Investigation/Report		1.23%	80%	0.988%	20%		Final report and Addendum report submitted, additional work required
B-71 Investigation/Report		1.23%	80%	0.988%	20%		Investigation/cleanup underway
BLDG-43 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Sept 05

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
Demo Dud Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Apr 05
F-14 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Nov 95
I-1 Investigation/Report		1.23%	100%	1.235%	0%		NFA Closure approved Nov 08.
Coal Bins Investigation/Report		1.23%	100%	1.235%	0%		Site being de-listed as a SWMU
AOC 35 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Feb 03
AOC 37 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Jan 05
AOC 39 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Sept 02
AOC 40 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Aug 02
AOC 43 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved Feb 03
AOC 44 Investigation/Report		1.23%	100%	1.235%	0%		Delisting approved July 2005.
AOC 45 Investigation/Report		1.23%	0%	0.000%	100%		
AOC 46 Investigation/Report		1.23%	100%	1.235%	0%		RRS1 closure approved July 05
AOC 47 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Sep 02
AOC 49 Investigation/Report		1.23%	100%	1.235%	0%		Delisting approved July 2005
AOC 50 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Apr 05
AOC 52 Investigation/Report		1.23%	0%	0.000%	100%		
AOC 53 Investigation/Report		1.23%	100%	1.235%	0%		closure approved July 2005.
AOC 54 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Nov 04
AOC 55 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved
AOC 56 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Sept 04 Final RFI report submitted,
AOC 58 Investigation/Report		1.23%	80%	0.988%	20%		additional work recommended.
AOC 59 Investigation/Report		1.23%	0%	0.000%	100%		
AOC 60 Investigation/Report		1.23%	100%	1.235%	0%		Delisting approved July 2005.
AOC 61 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Feb 03
AOC 62 Investigation/Report		1.23%	0%	0.000%	100%		
AOC 63 Investigation/Report		1.23%	99%	1.222%	1%		NFA APAR submitted
AOC 64 Investigation/Report		1.23%	80%	0.988%	20%		Investigation/cleanup underway
AOC 67 Investigation/Report		1.23%	80%	0.988%	20%		Add'l investigation to be performed (DY01)
AOC 68 Investigation/Report		1.23%	80%	0.988%	20%		Add'l investigation to be performed (DY01)
AOC 69 Investigation/Report		1.23%	80%	0.988%	20%		Investigation/cleanup underway
AOC 70 Investigation/Report		1.23%	0%	0.000%	100%		
AOC 72 Investigation/Report		1.23%	0%	0.000%	100%		
AOC 73 Investigation/Report		1.23%	99%	1.222%	1%		RIR submitted
Medium Areas (2-10 acres in size)							
B-1 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Nov 02
B-2 Investigation/Report		1.23%	80%	0.988%	20%		Add'l investigation to be performed (DY01)
B-22 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Dec 02
B-24 Investigation/Report		1.23%	80%	0.988%	20%		Additional work underway
B-29 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Feb 08
AOC 36 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved Aug 02
AOC 41 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved July 2005.
AOC 42 Investigation/Report		1.23%	50%	0.617%	50%		Final report submitted, additional work recommended
AOC 48 Investigation/Report		1.23%	100%	1.235%	0%		Delisting approved Nov 04

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
AOC 57 Investigation/Report		1.23%	0%	0.000%	100%		
Large Areas (>10 acres in size)							
B-20/21 Investigation/Report		1.23%	80%	0.988%	20%		Add'l investigation to be performed (DY01)
AOC 38 Investigation/Report		1.23%	100%	1.235%	0%		Closure approved February 05
AOC 51 Investigation/Report		1.23%	0%	0.000%	100%		
AOC 66 Investigation/Report		1.23%	100%	1.235%	0%		NFA Closure approved Feb 05
RMU-1 Investigation/Report		1.23%	0%	0.000%	100%		
RMU-5 Investigation/Report		1.23%	0%	0.000%	100%		
AOC 65 Investigation/Report		1.23%	80%	0.988%	20%		Final report submitted, additional work recommended
RMU-2 Investigation/Report		1.23%	0%	0.000%	100%		
RMU-3 Investigation/Report		1.23%	0%	0.000%	100%		
RMU-4 Investigation/Report		1.23%	0%	0.000%	100%		
Groundwater Investigation	15%					80%	
Well Installation		10%	80%	8%	20%		Well installations pending under TO 08
Groundwater Monitoring 1999		3.8%	100%	4%	0%		
Groundwater Monitoring 2000		3.8%	100%	4%	0%		
Groundwater Monitoring 2001		3.8%	100%	4%	0%		
Groundwater Monitoring 2002		3.8%	100%	4%	0%		
Groundwater Monitoring 2003		3.8%	100%	4%	0%		
Groundwater Monitoring 2004		3.8%	100%	4%	0%		
Groundwater Monitoring 2005		3.8%	100%	4%	0%		
Groundwater Monitoring 2006		3.8%	100%	4%	0%		
Groundwater Monitoring 2007		3.8%	100%	4%	0%		
Groundwater Monitoring 2008		3.8%	100%	4%	0%		
Groundwater Monitoring 2009		3.8%	0%	0%	100%		
Groundwater Monitoring 2010		3.8%	0%	0%	100%		
Conceptual Site Model (CSM)		20.0%	100%	20%	0%		
CSM Update		4.0%	80%	3%	20%		
LTMO 2005 (optimization study)		10%	100%	10%	0%		Complete
LTMO 2010 (review of optimization)		10%	0%	0%	100%		incomplete
Risk Assessment	10%					89%	
Draft TAD		10%	100%	10%	0%		
Draft Final TAD		4%	100%	4%	0%		
Final TAD		1%	0%	0%	100%		Complete when analytical data is available for full evaluation.
Draft CSM		70%	100%	70%	0%		
Update to CSM		10%	50%	5%	50%		
Final CSM		5%	0%	0%	100%		
Investigation Analysis	10%					84%	
Collect Background Data		10%	100%	10%	0%		Information included in facility investigation reports; percent complete based on overall percent complete of facility investigation tasks.
Draft Investigation Analysis		85%	82%	70%	18%		Information included in facility investigation reports; percent complete based on overall percent complete of facility investigation tasks.
Final Investigation Analysis		5%	82%	4%	18%		Information included in facility investigation reports; percent complete based on overall percent complete of facility investigation tasks.
Treatability Studies	10%					46%	
Draft Treatability Study Report B-20		15%	100%	15%	0%		
Final Treatability Study Report B-20		5%	100%	5%	0%		
Continued O&M for B-3		10%	100%	10%	0%		
AOC-65 Treatability Studies		10%	90%	9%	10%		
Draft Treatability Study & Technology Evaluation Reports		10%	70%	7%	30%		
Final Treatability Study		25%	0%	0%	100%		
Recharge Study		25%	100%	25%	0%		

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Activity Remaining	% of Task Complete	Comments/Status
Progress Reports	5%					28.0%	
Quarter 1 (August 1999)		0.85%	100%	0.85%	0%		
Quarter 2 (November 1999)		0.85%	100%	0.85%	0%		
Quarter 3 (February 2000)		0.85%	100%	0.85%	0%		
Quarter 4 (May 2000)		0.85%	100%	0.85%	0%		
Quarter 5 (August 2000)		0.85%	100%	0.85%	0%		
Quarter 6 (November 2000)		0.85%	100%	0.85%	0%		
Quarter 7 (February 2001)		0.85%	100%	0.85%	0%		
Quarter 8 (May 2001)		0.85%	100%	0.85%	0%		
Quarter 9 (August 2001)		0.85%	100%	0.85%	0%		
Quarter 10 (November 2001)		0.85%	100%	0.85%	0%		
Quarter 11 (February 2002)		0.85%	100%	0.85%	0%		
Quarter 12 (May 2002)		0.85%	100%	0.85%	0%		
Quarter 13 (August 2002)		0.85%	100%	0.85%	0%		
Quarter 14 (November 2002)		0.85%	100%	0.85%	0%		
Quarter 15 (February 2003)		0.85%	100%	0.85%	0%		
Quarter 16 (May 2003)		0.85%	100%	0.85%	0%		
Quarter 17 (August 2003)		0.85%	100%	0.85%	0%		
Quarter 18 (November 2003)		0.85%	100%	0.85%	0%		
Quarter 19 (February 2004)		0.85%	100%	0.85%	0%		
Quarter 20 (May 2004)		0.85%	100%	0.85%	0%		
Quarter 21 (August 2004)		0.85%	100%	0.85%	0%		
Quarter 22 (November 2004)		0.85%	100%	0.85%	0%		
Quarter 23 (February 2005)		0.85%	100%	0.85%	0%		
Quarter 24 (May 2005)		0.85%	100%	0.85%	0%		
Quarter 25 (August 2005)		0.85%	100%	0.85%	0%		
Quarter 26 (November 2005)		0.85%	100%	0.85%	0%		
Quarter 27 (February 2006)		0.85%	100%	0.85%	0%		
Quarter 28 (May 2006)		0.85%	100%	0.85%	0%		
Semi-Annual 29 (December 2006)		0.85%	100%	0.85%	0%		
Semi-Annual 30 (July 2007)		0.85%	100%	0.85%	0%		
Semi-Annual 31 (December 2007)		0.85%	100%	0.85%	0%		
Semi-Annual 32 (July 2008)		0.85%	100%	0.85%	0%		
Semi-Annual 33 (December 2008)		0.85%	100%	0.85%	0%		
Semi-Annual 34 (July 2009)		0.85%	0%	0.00%	100%		
Semi-Annual 35 (December 2009)		0.85%	0%	0.00%	100%		
Semi-Annual 36 (July 2010)		0.85%	0%	0.00%	100%		
Semi-Annual 37 (December 2010)		0.85%	0%	0.00%	100%		
(Add'l Quarters - rows hidden)							
% of Phase Complete						75.18%	
¹ Breakdown of percent complete for RFI facility investigations: Field work complete (25%), data validation (20%), boring logs (if applicable)(10%), analytical data tables (10%), figures (10%), draft report (20%), final report (5%). Note: if additional investigations are needed, then the percent complete will need to be adjusted on a site by site basis.							

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Task Complete
Identify and Develop Alternatives	15%				0.0%
Update DCC Report		35%	0%	0%	
Establish Corrective Action Objectives		30%	0%	0%	
ID, Screen, Develop CM Alternatives		35%	0%	0%	
Evaluate Alternatives	60%				0.0%
Draft Description of CM Alternative		90%	0%	0%	
Final Description of CM Alternative		10%	0%	0%	
???				0%	
Reports	25%				0.0%
Draft CMS Report		75%	0%	0%	
Final CMS Report		5%	0%	0%	
Quarter 1 Progress Report		5%	0%	0%	
Quarter 2 Progress Report		5%	0%	0%	
Quarter 3 Progress Report		5%	0%	0%	
Quarter 4 Progress Report		5%	0%	0%	
???			0%	0%	
% of Phase Complete					0.0%

Attachment 3
Overall (H) Order Percent Complete

Task Name	% of Phase	% of Task	% Complete	% of Activity Complete	% of Task Complete
Implementation Program Plan	5%				0.0%
Draft Program Management Plan		40%	0%	0%	
Final Program Management Plan		10%	0%	0%	
Draft Update to CRP		40%	0%	0%	
Final Update to CRP		10%	0%	0%	
Corrective Measure Design	15%				0.0%
Draft CMD Report		90%	0%	0%	
Final CMD Report		10%	0%	0%	
Corrective Measure Construction	70%				0%
Draft Construction QAPP		35%	0%	0%	
Final Construction QAPP		5%	0%	0%	
Implementation of Construction QAPP		60%	0%	0%	
Reports	10%				0%
Progress Report 1		25%	0%	0%	
Progress Report 2		25%	0%	0%	
Progress Report 3		25%	0%	0%	
Progress Report 4		25%	0%	0%	
????					
% of Phase Complete					0.00%

ATTACHMENT 4
GROUNDWATER RESULTS SUMMARY

June 2008 Quarterly Groundwater Monitoring Analytical Results, On-Post

Well ID	Sample Date	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	PCE	TCE	Vinyl Chloride	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
CS-MW9-LGR	6/10/2008	0.12U	0.07U	0.08U	0.26F	0.05U	0.08U	0.00582F	0.0372	0.0005U	0.007F	0.003U	0.0019U	0.006F	0.008U	0.0004F
CS-MW20-LGR	6/24/2008	0.12U	0.07U	0.08U	1.95	0.05U	0.08U	0.00022U	0.1448	0.0005U	0.001U	0.003U	0.0019U	0.001U	0.057	0.0001U
CS-MW21-LGR	6/24/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00022U	0.091	0.0005U	0.001U	0.003U	0.0019U	0.002F	0.142	0.0001U
CS-MW22-LGR	6/24/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00022U	0.0651	0.0005U	0.001U	0.003U	0.0019U	0.006F	1.701	0.0001U
CS-MW22-LGR FD	6/24/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00022U	0.0658	0.0005U	0.001U	0.003U	0.0019U	0.006F	1.732	0.0001U
CS-MW23-LGR	6/24/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00022U	0.0528	0.0005U	0.001U	0.003U	0.0019U	0.035	0.133	0.0001U
CS-MW24-LGR	6/24/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00022U	0.0334	0.0005U	0.001U	0.003U	0.0019U	0.001U	0.132	0.0001M
CS-MW25-LGR	6/10/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00274F	0.0333	0.0005U	0.012	0.004F	0.0019U	0.009F	0.297	0.0005F
CS-1	6/27/2008	0.12U	0.07U	0.08U	0.06U	0.17F	0.08U	0.00022U	0.0371	0.0005U	0.001U	0.005F	0.0019U	0.001U	0.159	0.0004F
CS-9 (1317)	6/27/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00058F	0.0383	0.0005U	0.001U	0.012	0.0067F	0.002F	0.983	0.0012
CS-9 (1356)	6/27/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00022U	0.038	0.0005U	0.001U	0.047	0.0541	0.001U	0.519	0.0015
CS-10	6/27/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U	0.00085F	0.0418	0.0005U	0.001U	0.006F	0.0019U	0.002F	0.261	0.0003F

BOLD	= Above the MDL (F flagged)
BOLD	= Above the RL
BOLD	= Above the MCL

All samples were analyzed by APPL, Inc.
 VOC data reported in ug/L & metals data reported in mg/L.
Abbreviations/Notes:
 FD Field Duplicate
 TCE Trichloroethene
 PCE Tetrachloroethene
 DCE Dichloroethene

Data Qualifiers:
 U - The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
 F - The analyte was positively identified but the associated numerical value is below the RL.
 J - The analyte was positively identified, the quantitation is an estimation.

June 2008 Quarterly Off-Post Groundwater Analytical Results

Well ID	Sample Date	1,1-DCE	<i>cis</i> -1,2-DCE	<i>trans</i> -1,2-DCE	PCE	TCE	Vinyl Chloride
FO-17	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
FO-JI	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
HS-1	6/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
HS-2	6/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
HS-3	6/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
II0-7	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-5	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-7	6/6/2008	0.12U	0.07U	0.08U	0.38F	0.05U	0.08U
JW-12	6/6/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-13	6/5/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-14	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-27	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-29	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-30	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-6	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-8	6/5/2008	0.12U	0.07U	0.08U	0.30F	0.05U	0.08U
JW-28	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-1	6/5/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-4	6/5/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-4 FD	6/5/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-5	6/2/2008	0.12U	0.07U	0.08U	0.82F	1.4	0.08U
LS-6	6/2/2008	0.12U	0.07U	0.08U	1.68	0.05U	0.08U
LS-7	6/2/2008	0.12U	0.07U	0.08U	2.78	0.05U	0.08U
OFR-1	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
OFR-1 FD	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
OFR-3	6/2/2008	0.12U	0.07U	0.08U	6.56	5.5	0.08U
RFR-10	6/2/2008	0.12U	0.07U	0.08U	13.63	6.87	0.08U
RFR-10 FD	6/2/2008	0.12U	0.07U	0.08U	13.11	6.93	0.08U
RFR-11	6/2/2008	0.12U	0.07U	0.08U	0.88F	1.28	0.08U
RFR-13	6/4/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-14	6/5/2008	0.12U	0.07U	0.08U	0.26F	0.05U	0.08U
RFR-8	6/5/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U

This table presents preliminary data.
 All samples were analyzed by APPL, Inc.
 VOC data reported in ug/L.

Abbreviations/Notes:
 FD Field Duplicate
 TCE Trichloroethene
 PCE Tetrachloroethene
 DCE Dichloroethene

Data Qualifiers:
 U - The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
 F- The analyte was positively identified but the associated numerical value is below the RL.
 J - The analyte was positively identified, the quantitation is an estimation.

BOLD	= Above the MDL (F flagged)
BOLD	= Above the RL
BOLD	= Above the MCL

September 2008 Quarterly Groundwater Monitoring Analytical Results, On-Post

Well ID	Sample Date	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Zinc	Mercury
CS-MW1-LGR	9/9/2008	NA	NA	0.0005U	0.023	NA	0.0027F	NA	0.0001U
CS-MW2-LGR	9/16/2008	NA	NA	0.0005U	0.001U	NA	0.0034F	NA	0.0001U
CS-MW3-LGR	9/16/2008	NA	NA	0.0005U	0.001U	NA	0.0024F	NA	0.0001U
CS-MW5-LGR	9/11/2008	NA	NA	0.0005U	0.002F	NA	0.005F	NA	0.0001U
CS-MW6-LGR	9/10/2008	NA	NA	0.0005U	0.005F	NA	0.0043F	NA	0.0001U
CS-MW7-LGR	9/9/2008	NA	NA	0.0005U	0.002F	NA	0.0019U	NA	0.0001U
CS-MW8-LGR	9/10/2008	NA	NA	0.0007F	0.002F	NA	0.0027F	NA	0.0001U
CS-MW9-LGR	9/16/2008	NA	NA	0.0005U	0.002F	NA	0.0022F	NA	0.0001U
CS-MW9-LGR FD	9/16/2008	NA	NA	0.0005U	0.002F	NA	0.0038F	NA	0.0001U
CS-MW10-LGR	9/15/2008	NA	NA	0.0005U	0.016	NA	0.0025F	NA	0.0001U
CS-MW10-LGR FD	9/15/2008	NA	NA	0.0005U	0.014	NA	0.0023F	NA	0.0001U
CS-MW11A-LGR	9/15/2008	NA	NA	0.0008F	0.001U	NA	0.0023F	NA	0.0001U
CS-MW12-LGR	9/11/2008	NA	NA	0.0005U	0.001U	NA	0.0026F	NA	0.0001U
CS-MW16-LGR	9/9/2008	NA	NA	0.0005U	0.001U	NA	0.0043F	NA	0.0001U
CS-MW16-CC	9/9/2008	NA	NA	0.0005U	0.001U	NA	0.0029F	NA	0.0001U
CS-MW19-LGR	9/11/2008	NA	NA	0.0005U	0.002F	NA	0.0037F	NA	0.0001U
CS-MW20-LGR	9/15/2008	NA	NA	0.0008F	0.002F	NA	0.0029F	NA	0.0001U
CS-MW21-LGR	9/15/2008	NA	NA	0.0005U	0.001U	NA	0.0032F	NA	0.0001U
CS-MW22-LGR	9/15/2008	NA	NA	0.0005U	0.001U	NA	0.0037F	NA	0.0001U
CS-MW23-LGR	9/15/2008	NA	NA	0.0006F	0.004F	NA	0.0079F	NA	0.0001U
CS-MW24-LGR	9/10/2008	NA	NA	0.0005U	0.002F	NA	0.0035F	NA	0.0001U
CS-MW25-LGR	9/16/2008	NA	NA	0.0005U	0.002F	NA	0.0035F	NA	0.0001U
CS-MWG-LGR	9/16/2008	NA	NA	0.0006F	0.001U	NA	0.0102F	NA	0.0001U
CS-D	9/9/2008	NA	NA	0.0005U	0.001U	NA	0.0038F	NA	0.0001U
CS-2	9/11/2008	NA	NA	0.0005U	0.001U	NA	0.003F	NA	0.0001U
CS-4	9/15/2008	NA	NA	0.0005U	0.001U	NA	0.0026F	NA	0.0001U
CS-11	9/15/2008	NA	NA	0.0005U	0.02	NA	0.1972	NA	0.0001U
CSSA Drinking Water Well System									
CS-1	9/18/2008	0.00222F	0.0376	0.0005U	0.001U	0.003U	0.0019U	0.067	0.0001U
CS-9	9/16/2008	0.00197F	0.0394	0.0005U	0.001U	0.003U	0.0088F	2.42	0.0082J
CS-9 FD	9/16/2008	0.00196F	0.0384	0.0005U	0.001U	0.003U	0.0083F	2.242	0.0066J
CS-10	9/16/2008	0.00338F	0.0393	0.0005U	0.001U	0.003U	0.0054F	0.184	0.0001U
Reservoir	9/18/2008	0.00222F	0.0389	0.0005U	0.001U	0.003U	0.0019U	0.166	0.0001U

Well ID	Sample Date	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	PCE	TCE	Vinyl Chloride
CS-MW1-LGR	9/9/2008	0.12U	16.3	0.26F	12.87	29.33	0.08U
CS-MW2-LGR	9/16/2008	0.12U	0.58F	0.08U	0.06U	0.05U	0.08U
CS-MW3-LGR	9/16/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW5-LGR	9/11/2008	0.12U	1.24	0.08U	0.68F	1.01	0.08U
CS-MW6-LGR	9/10/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW7-LGR	9/9/2008	0.12U	0.07U	0.08U	0.22F	0.05U	0.08U
CS-MW8-LGR	9/10/2008	0.12U	0.07U	0.08U	1.66	0.05U	0.08U
CS-MW9-LGR	9/16/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW9-LGR FD	9/16/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW10-LGR	9/15/2008	0.12U	0.07U	0.08U	1.94	0.50F	0.08U
CS-MW10-LGR FD	9/15/2008	0.12U	0.07U	0.08U	2.08	0.39F	0.08U
CS-MW11A-LGR	9/15/2008	0.12U	0.07U	0.08U	1.59	0.05U	0.08U
CS-MW12-LGR	9/11/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW16-LGR	9/9/2008	0.12U	179.24*	0.72	172.98*	292.14*	0.08U
CS-MW16-CC	9/9/2008	0.38F	51.07	2.11	14.3	63.81	0.08U
CS-MW19-LGR	9/11/2008	0.12U	0.07U	0.08U	0.40F	0.05U	0.08U
CS-MW20-LGR	9/15/2008	0.12U	0.07U	0.08U	1.88	0.05U	0.08U
CS-MW21-LGR	9/15/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW22-LGR	9/15/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW23-LGR	9/15/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW24-LGR	9/10/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MW25-LGR	9/16/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-MWG-LGR	9/16/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-D	9/9/2008	0.12U	93.66	0.8	72.16	102.32	0.08U
CS-2	9/11/2008	0.12U	0.07U	0.08U	0.64F	0.05U	0.08U
CS-4	9/15/2008	0.12U	0.07U	0.08U	0.75F	1.08	0.08U
CS-11	9/15/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-1	9/18/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-9	9/16/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-9 FD	9/16/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
CS-10	9/16/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U

BOLD = Above the MDL
BOLD = Above the RL
BOLD = Above the MCL

All samples were analyzed by APPL, Inc.
VOC data reported in ug/L, & metals data reported in mg/L.
Abbreviations/Notes:
FD Field Duplicate
TCE Trichloroethene
PCE Tetrachloroethene
DCE Dichloroethene
NA Not Analyzed for this parameter
Data Qualifiers:
U - The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F - The analyte was positively identified but the associated numerical value is below the RL.
J - The analyte was positively identified, the quantitation is an estimation.
* dilution of 10 run for this sample.

September 2008 Quarterly Off-Post Groundwater Analytical Results

Well ID	Sample Date	1,1-DCE	<i>cis</i> -1,2-DCE	<i>trans</i> -1,2-DCE	PCE	TCE	Vinyl Chloride
FO-J1	9/4/2008	0.12U	0.07U	0.08U	0.27F	0.05U	0.08U
HS-1	9/10/2008	0.12U	0.07U	0.08U	0.21F	0.05U	0.08U
HS-2	9/10/2008	0.12U	0.07U	0.08U	0.12F	0.05U	0.08U
110-7	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
110-7 FD	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-5	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-7	9/4/2008	0.12U	0.07U	0.08U	0.54F	0.05U	0.08U
JW-8	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-14	9/4/2008	0.12U	0.07U	0.08U	0.11F	0.05U	0.08U
JW-28	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-29	9/4/2008	0.12U	0.07U	0.08U	0.13F	0.05U	0.08U
JW-30	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-30 FD	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
JW-27	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-1	9/5/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-4	9/5/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-5	9/2/2008	0.12U	0.07U	0.08U	0.64F	1.84	0.08U
LS-6	9/2/2008	0.12U	0.07U	0.08U	0.99F	1.07	0.08U
LS-6-A2	9/2/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
LS-7	9/2/2008	0.12U	0.07U	0.08U	2.27	0.39F	0.08U
LS-7-A2	9/2/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
OFR-1	9/3/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
OFR-3	9/2/2008	0.12U	0.11F	0.08U	7.59	4.61	0.08U
OFR-3-A2	9/2/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-9	9/9/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-14	9/4/2008	0.12U	0.07U	0.08U	0.27F	0.05U	0.08U
RFR-14 FD	9/4/2008	0.12U	0.07U	0.08U	0.23F	0.05U	0.08U
RFR-10	9/2/2008	0.12U	0.46F	0.08U	5.94	3.5	0.08U
RFR-10-A2	9/2/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-10-B2	9/2/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U
RFR-11	9/2/2008	0.12U	0.07U	0.08U	0.34F	1.61	0.08U
RFR-11-A2	9/2/2008	0.12U	0.07U	0.08U	0.06U	0.05U	0.08U

All samples were analyzed by APPL, Inc.
 VOC data reported in ug/L.

Abbreviations/Notes:

FD Field Duplicate
 TCE Trichloroethene
 PCE Tetrachloroethene
 DCE Dichloroethene

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 F- The analyte was positively identified but the associated numerical value is below the RL.
 J - The analyte was positively identified, the quantitation is an estimation.

BOLD	= Above the MDL (F flagged)
BOLD	= Above the RL
BOLD	= Above the MCL