

ATI UCA
Parsons
→ RL17

January 26, 1996

Ms. Jo Jean Mullen (QAE)
AFCEE\ERD
3207 North Road, Room 151
Brooks AFB, TX 78235-5363

Reference: Contract F11623-94-D0024, Delivery Order RL17
Item No. 3.0.2 Technical Interchange Meeting
Camp Stanley Storage Activity (CSSA) SWMU Closures and
Integrated Spill and Waste Management Plan
Meeting Minutes 2 (A007)

Dear Jo Jean:

Enclosed are three copies of the minutes of the January 18, 1996 technical interchange meeting with CSSA, AFCEE, Inchcape Testing Services, and Parsons ES at CSSA, Boerne, Texas. We are also transmitting five copies of these minutes to Mr. Brian Murphy, CSSA/RRAD; one copy to Capt Christopher Williston, Armstrong Laboratory/OEB; and one copy to John Stewart, Parsons ES, St. Louis.

Please call me at (512) 719-6000 if you have any questions or comments.

Sincerely,



Susan V. Roberts
Project Manager

Enclosure

xc: Brian Murphy, Environmental Officer, CSSA
John Stewart, Parsons ES-St. Louis
Capt Williston, AL/OEB
Ken Rice, Parsons ES
Julie Burdey, Parsons ES

MEETING MINUTES

Reference: Contract F11623-94-D0024, Delivery Order RL17
Item No. 3.0.2 Technical Interchange Meeting (TIM)
Camp Stanley Storage Activity (CSSA) SWMU Closures and
Integrated Spill and Waste Management Plan
Meeting Minutes 2 (A007)

Meeting: 9:00 A.M. - 4:30 P.M.
January 18, 1996
CSSA, Boerne, Texas

Subject: TIM for CSSA Environmental Projects, Parsons ES, contractor

The meeting was held in the CSSA building 1 conference room, on January 18, 1996.
The following were in attendance:

Name	Organization
Rod Chatham	CSSA Director, Special Projects CSSA
Brian Murphy	CSSA, Environmental Officer
Tom Tutweiler	CSSA
Paul B. Oliver	CSSA
Jo Jean Mullen	AFCEE/ERD Brooks AFB
Bill Kessler	AFCEE/ERC
Rene G. Hefner	AFCEE/ERC
Ernest Torres	Inchcape Testing Services
Jerry Pressley	Inchcape Testing Services
Susan Roberts	Parsons ES
Julie Burdey	Parsons ES, contractor
Ken Rice	Parsons ES

Camp Stanley Storage Activity
January 18, 1996

January Update Meeting

<u>Name</u>	<u>Organization</u>	<u>Phone</u>
Julie Burdey	Parsons ES	512/719-6062
Rene G. Hefner	AFCEE/ERC	210/536-4763
PAUL B. OLIVER	CSSA	(210) 221-7473
Tom Tutwiler	CSSA	221-7420
KEN RICE	PARSONS ES	512-719-6090
Ernest Torres	INCHCAPE	(214) 238-5591
Jerry Pressley	Inchcape	(214) 238-5591
R. CHATHAM	CSSA	(210) 698-0210
BRIAN MURPHY	ENV. OFF./CSSA	(210) 698-5208
Susan Roberts	Parsons ES	512/719-6051
BILL KESSLER	AFCEE/ERC	(210) 536-5664
Jo Jean Mullen	AFCEE/ERC	(210) 536-5740

CSSA ENVIRONMENTAL PROJECTS

PARSONS ES JANUARY 1996 UPDATE

ACTIVE PROJECTS

SWMU Closures / Integ. Wst Mgt Plan

WMU Closures

- B-20 investigation
- Air permitting

Groundwater Evaluation (Well 16)

CONTRACT:

AMC Order RL17, mod 1

AL/OEB order 126, mod 3

AL/OEB order 67, mod 3

MEETING SUBMITTALS

SWMU Closures / Integ. Wst Mgt Plan:

- Monthly informal financial spreadsheet
- Update summary for Dec 95 and Jan 96
- Schedule for Jan and Feb 96
- Revisions to draft WP and FSP
- Copies of figure: SWMUs located on topographic map ('92 locations)
- Copies of summary map of previous geophysical anomalies found around well 16
- E-mail protocol to reach Parsons ES project manager
- Copy, phone memo of Dec 95 phone conversation between EPA and Parsons

WMU Closures

- Monthly informal financial spreadsheet
- Update summary for Dec 95 and Jan 96
- Schedule for Jan 96

Groundwater Evaluation (Well 16)

- Monthly informal financial spreadsheet
- Update summary for Dec 95 and Jan 96
- Preliminary list of groundwater metals analyses from Dec 95 monitoring event
- Schedule for Jan and Feb 96

CLOSED PROJECTS

UST Compliance
LPST Phase II Assessments
F-14 Investigation
Environmental Assessment
Heating Oil UST Assessments
Yearly GW Monitoring
Environmental Services
Chemical inventory/Tier II reports

AL/OEB order 32

AL/OEB order 54
AL/OEB order 71 closed 15 June 95
AL/OEB order 79 closed 27 May 95
DAAC79-94-M-H654
DAAC79-94-M-H718
DAAC79-95-M-H549-P00001

ATTACHMENT 1



Inchcape Testing Services

Environmental Laboratories

1089 E. Collins Blvd.
Richardson, TX 75081
Tel. 214-238-5591
Fax. 214-238-5592

January 17, 1996

Ken Rice
Parsons/Engineering Science
8000 Centre Park Dr., Suite 200
Austin, TX 78754

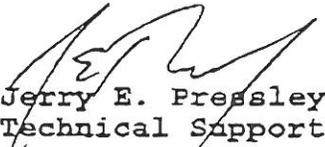
Mr. Rice,

The attached questions and comments are provided in reference to the AFCEE, Camp Stanley Project to be performed under the AFCEE Quality Assurance Project Plan, Version 1.0, January, 1996.

As you are aware, Ernest Torres and I will be attending a meeting with you on January 18, 1996, in San Antonio, to address these and other issues pertinent to the project.

Should you require additional documentation prior to the meeting, please call me at (214) 238-5591.

Sincerely,



Jerry E. Pressley, Jr.
Technical Support



Inchcape Testing Services

Environmental Laboratories

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AFCEE QAPP: METALS DEPARTMENT COMMENTS

1. Table 7.2.19-3 requires a multipoint calibration for ICP. Our Standard Operating Procedure requires only a blank and a high standard as long as we determine the linear range of our calibration at least quarterly. In addition, we will be analyzing a standard at our laboratory PQL. Is this acceptable?
2. Table 7.2.19-3 requires that continuing calibration blanks be controlled within 3 standard deviations of the mean blank value. Our SOP is for the absolute value of the CCB to be less than the laboratory PQL. This is the requirement for AA methods in the AFCEE QAPP and for all inorganic methods in the original AFCEE Handbook. Is this acceptable?
3. All of the Graphite Furnace AA Methods require a serial dilution to be performed on one sample for each new matrix. If the serial dilution fails to meet criteria, a matrix effect is suspected and a post-digestion spike is then performed on the same sample. If the percent recovery of the post-digestion spike is not within 85-115%, the Method of Standard Additions is performed on all samples. Our SOP is to perform an interference check on every sample instead of each new matrix. We perform a post-digestion spike on every sample, and each sample with a result above the PQL with a post-digestion recovery outside the 85-115% control limits requires analysis by MSA. This is beyond what is required for the QAPP. Is this acceptable?
4. The data quality objectives are more stringent than those used routinely by the laboratory, particularly all of the Duplicate RPD values, and the LCS and MS/MSD recoveries for antimony and silver. Experience indicates that these tighter levels are obtainable, however no consideration is given for low level "hits" and the resultant impact on RPD. (i.e. a 5.1 ppb sample result and a duplicate value of 6.3 ppb...the RPD would fail at 21 %). The CLP program utilizes a 50x IDL before applying RPD objective to positive determinations.
5. Reporting Forms...Can we substitute CLP or CLP-like forms? Examples attached.



Inchcape Testing Services

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AFCEE QAPP: GC DEPARTMENT COMMENTS

1. The QAPP mentions analyzing explosive residues by SW8330. We are currently using a modified 8330 explosive method that the USACE requires. The differences are listed below:
 - a. For soil analysis, the two methods are identical.
 - b. For liquids, the analysis is the same but the prep is different.

Is the USACE method acceptable?

2. Table 7.2.18-2 lists QC recovery limits for nitroglycerin while Table 7.2.18-1 does not list a PQL for this analyte. The bid previously submitted by Inchcape Testing does not list nitroglycerin as a target analyte. Is nitroglycerin a requested target analyte? It needs to be analyzed separately.
3. Table 7.2.18-2 lists QC recovery limits for the target analytes. The soil limits can be reached but the liquid limits are very tight for the analytes that have a minimum recovery of 75%. We have trouble reaching our own recovery limits for the few compounds that are controlled (we currently have a reprep rate of app. 25% for explosive liquids).

Another difficulty that will have to be overcome is the spiking of all target analytes. There are several coelutions that require the use of more than one mix so the number of QC samples will double unless a way is found to separate all of the analytes.

4. Table 7.2.18-2 has a confusing statement about the selection of a surrogate. If a target compound is chosen, how are we going to calibrate for this compound and spike this compound into LCSs and MSs if 8330 says to add a surrogate compound to all QC samples, standards, and samples? We are currently using a non-target explosive compound (3,4-dinitrotoluene) that is recommended by the USACE.



Inchcape Testing Services

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AFCEE QAPP: GC DEPARTMENT COMMENTS

Continued

5. Table 7.2.18-3 says to reanalyze all samples analyzed since the last successful calibration verification standard. The current version of method 8000 (8000A) says to stop sample analysis when a calibration verification standard fails. It does not say to reanalyze the samples before the failed one.
6. As for the AFCEE forms section, the GC department recommends the use of our own CLP-LIKE forms that can have modified form I's to reflect the AFCEE flagging requirements.
7. Although not applicable to the Camp Stanley project, the PQLs listed for 8010 and 8021 would be difficult to meet. In the case of 8021, the PQLs are lower than method specifications for 601 and are generally 5 to 10 times lower than current MDL studies would allow us to report. Additionally, many of the compounds are not on our standard reporting list and would need to be added to our procedure.
8. QC acceptance criteria for accuracy is more stringent for several of the compounds listed in 8010, 8020, and 8021, although the levels specified should be obtainable.
9. Can we substitute CLP or CLP like forms? Examples attached.

ATTACHMENT 2

Financial Update - SWMU CLOSURES/INTEGRATED WST MGT PLAN PROJECT

Camp Stanley Storage Activity, RRAD

AMC Order RL 17

PES Project #728487

Ceiling cost = \$964,678

All costs below reflect totals without fee = \$908,339

Year	Month Ending	Task No.	Task Description	Task Budget	Monthly Cumulative	Funds Remaining	Estimate at Completion	Work Conducted
1995	Oct - Dec	01	RFI Scoping	\$34,440	\$35,807	(\$1,367)	\$45,000	Project plans
		03	Site Characterization	\$319,272	\$7,301	\$311,971	\$319,272	Procurement, review of documents f
		05	Treatability Investig.	\$158,188	\$2,121	\$156,067	\$158,188	Review of O-1 data for plans
		08	GW Monitoring Wells	\$47,454		\$47,454	\$47,454	
		09	Sampling/Analysis	\$190,192		\$190,192	\$190,192	
		10	Site Work/Utilities	\$1,829		\$1,829	\$1,829	
		11	Meeting minutes	\$12,025	\$651	\$11,374	\$12,025	Kickoff mtg. minutes
		12	Presentation materials	\$13,406		\$13,406	\$13,406	
		13	Letter rpts	\$7,423		\$7,423	\$7,423	
		14	Special notifications	\$1,929		\$1,929	\$1,929	
		15	Monthly finan. rpts	\$15,743	\$1,588	\$14,155	\$15,743	Period 1 report
		16	Contractor Person. Chart	\$811	\$357	\$454	\$811	Oct 95 chart
		99	Int Wst Mgmt/Spill Plan	\$42,136	\$7,037	\$35,099	\$31,576	Draft plan; submitted 20 Dec 95
		90	Program Mgmt	\$63,491	\$13,878	\$49,613	\$63,491	St. Louis office prg. mgmt.
TOTALS:				\$908,339	\$68,740	\$839,599	\$908,339	

AMC RL17 UPDATE JANUARY, 1996

PROJECT: SWMU Closures/Integrated Wst Mgt Plan
PROJECT/TASK MANAGER: Susan Roberts
PARSONS ES PROJECT: 728487
CONTRACT NUMBER: AMC F11623-94-D0024
ORDER NUMBER: RL 17, mod 1
PERFORMANCE PERIOD: Dec 95 - Jan 96

MEETINGS

- 7 Dec 95: Technical interchange meeting regarding SWMUs B-3 and O-1, attended by representatives of CSSA, AL/OEB, AFCEE, Booz, Allen, and Hamilton (BAH), and Parsons ES.
- Teleconferences on 21 Dec, 28 Dec, 5 Jan, and 9 Jan to discuss project status. Teleconferences attended by AFCEE, CSSA and BAH as available, and Parsons ES

FIELD ACTIVITIES

- None.

DELIVERABLES

- Submitted Final Health and Safety Plan, 4 Dec 95. Met due date.
- Submitted draft Integrated Waste Management and Spill Plan, 20 Dec 95. Met due date.

Deliverables in preparation:

- ◊ Revisions to Field Sampling Plan (FSP); Final FSP due 20 Jan 96
- ◊ Revisions to draft Work Plan (WP); Final WP due 20 Jan 96

Note: Revisions to FSP and WP submitted on 18 Jan 96 for AFCEE and CSSA review; Parsons ES would like to request extension of due date to 31 Jan 96 so that adequate review, and further revisions as necessary, can be performed. If CSSA and AFCEE agree to extension, Parsons ES will submit a letter of request to AMC Contracting Officer.

- ◊ Will use AFCEE-prepared QAPP in place of draft Parsons ES-prepared QAPP for project. No further submittal necessary, unless any exceptions to the QAPP are requested. Determination of such exceptions are currently under consideration.

Note: Possible revision to project costs for use of AFCEE-prepared QAPP, which is more extensive than Parsons' QAPP, are also under consideration. The analytical firm Inchcape, Inc., is reviewing the QAPP, which was not finalized during the bidding process. Also, the data validation team has requested that an additional 24 hours for Senior Chemist and 80 hours for Staff Chemist be added to Task 0900 (Sampling and Analysis) to ensure that the flagging required by AFCEE is complete.

Information/Reports submitted to AFCEE for complementary review:

- Meeting minutes of 7 Dec 95 submitted on 14 Dec 95. Includes list of "Data Objectives" for SWMUs B-3 and O-1 (source areas of groundwater contamination)
- Submitted draft Background Sampling Plan to CSSA, AL/OEB, and AFCEE in Dec 95. Revisions underway to meet AFCEE QAPP requirements.
- Submitted Dr. Young's preliminary report on GPR surveys, 5 Jan 96. Final report will be submitted by Dr. Young in late January 96.
- Submitted Soil Vapor Extraction (SVE) Plan for the B-3 site, 16 Jan 96.

PROJECTED ACTIVITIES FOR NEXT PERIOD

Field Actions:

- Will begin field preparation in late Jan 96 for Stage I field actions

Note: Parsons ES originally costed with a typical vehicle rental cost of \$40/day. However, the SWMUs to be investigated are on gravel tracks, and a more sturdy vehicle than the econo rental is necessary for the field team. AFCEE has suggested that Parsons submit a letter of request to AMC noting the necessity for use of a 4-wheel drive vehicle, the cost discrepancy, and request for additional funds if the funds cannot be used from another task under AMC RL17.

- Will begin Stage 1 field actions in Feb 96 (see attached schedule)
- ⇒ 6-7 Feb (Wed): Site work and utilities clearance (Task 10000). **Request one CSSA personnel that is familiar with CSSA utility lines be present during clearance of all 28 SWMUs to be investigated.** If sites cannot be located, field personnel will notify Project Manager within one day.
- ⇒ 12-16 Feb (M-F): Begin site characterization (Task 03000, Sub-task 301) with staking of geophysical grids at 16 SWMUs (B-5, B-6, B-9, B-10, B-13, B-25, B-26, B-27, B-29, B-30, B-31, B-32, B-33, B-34, Bldg. 43, I-1). Original costs did not include this week of staking, but WP and FSP call for AFCEE and CSSA approval of each grid. It is anticipated that only major points of the 16 sites be staked to minimize field staking time, and that during the survey, a tape measure and cones will be used to identify points in-between the staked points. If this approach meets AFCEE and CSSA approval, then it is anticipated that 4-6 SWMUs can be staked per day, and work can be performed within 3-4 days. **Request AFCEE or BAH personnel, in conjunction with CSSA, provide onsite approval or revisions to each grid so as to minimize time in the field.**
- ⇒ 20-23 Feb (T-F): Revisions to geophysical grids if necessary; final field preparation
- ⇒ 26 Feb - 15 Mar (3 weeks): Stage I site characterization. Will begin with low priority SWMUs. One team will perform field locating, mapping, and surface soil sampling; the second team will perform geophysical (EM) surveys.

In-office Actions:

- Submittal of deliverables as stated above
- Data evaluation and QA/QC for field tasks

SWMU CLOSURES/INTEGRATED WST MGT PLAN
 AMC ORDER RL17

Schedule of Actions: February 1996

xxxxxx Field Actions	=====	In-house Actions
None		Begin Stage I field prep
		Submit final WP, FSP
		Procurement for drilling firm
		Teleconf., 2/1
Site utility clearance		
		Continue Stage I field prep
		Continue procurement
		Teleconf., 2/8
Staking for geophy. grids		
		Continue Stage I field prep
		Continue procurement
		Teleconf., 2/15
{Revisions to grids, if nec.}		
		Continue Stage I field prep
		Teleconf., 2/22
Begin Stage I characterization		
		Teleconf., 2/29

F E B R U A R Y 1 9 9 6						
SUN	MON	TUE	WED	THUR	FRI	SAT
1/28	1/29	1/30	1/31	1	2	3
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	xxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxx		
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18	19	20	21	22	23	24
	Fed. holiday		xxxxxxxxxxxxxxxxxxxx			
	= =		= =		= =	= =
25	26	27	28	29	3/1	3/2
	xx [B5] xx	xx [B6] xx	xx [B7] xx	x [B22]	xxxxxxxxxxxx	

ATTACHMENT 3

**CSSA ENVIRONMENTAL PROJECT UPDATE
JANUARY 17, 1996**

PROJECT: B-20 Remedial Investigation
PROJECT/TASK MANAGER: Julie Burdey
PARSONS ES PROJECT NUMBER: 721460.06
CONTRACT NUMBER: F33615-89-D-4003
AL/OEB ORDER NUMBER: 126
PERFORMANCE PERIOD: December 1995 - January 1996

FIELD ACTIVITIES:

The second phase of UXO clearance activities required for future site closure under either RRS1 or RRS2 were begun in December 1995 and are projected to continue through mid-February 1996. Specific activities include the following:

- Vegetation is being cleared to allow UXO identification at the site and in the surrounding areas,
- Buried magnetic anomalies (including scrap metal and UXO) in the northern portion of the site are being excavated, and
- Buried magnetic anomalies in the craters are being excavated.

In support of possible future closure under RRS1, scrap metal on the surface of the site is being collected as it is inspected by UXO professionals.

DATA EVALUATION:

- UXO items continued to be found at and around the B-20 site.
- A large amount of buried scrap metal and several buried UXO items have been found in the northern portion of the site (less than one of the six acres in this portion of the site have been swept).
- Five UXO items (20-lb bombs) have been identified approximately 0.25 mile from the site.

DELIVERABLES:

None.

PROJECTED ACTIVITIES FOR NEXT PERIOD:

Continue UXO clearance activities at the site (Expected completion: February 1996).

**CSSA ENVIRONMENTAL PROJECT UPDATE
JANUARY 17, 1996**

PROJECT: Background Sampling
PROJECT/TASK MANAGER: Julie Burdey
PARSONS ES PROJECT NUMBER: 721460.06
CONTRACT NUMBER: F33615-89-D-4003
AL/OEB ORDER NUMBER: 126
PERFORMANCE PERIOD: December 1995 - January 1996

FIELD ACTIVITIES:

None.

DATA EVALUATION:

None.

DELIVERABLES:

Sampling Plan for Evaluation of Background Metals Levels in Soil Types has been submitted today. Comments from CSSA and AFCEE have been addressed and the analytical laboratory has been made aware of AFCEE QAPP requirements. After any additional comments from CSSA are addressed, the plan will be submitted to TNRCC and EPA.

PROJECTED ACTIVITIES FOR NEXT PERIOD:

Conduct background sampling (at least 30 days after the plan has been submitted to the regulators).

Financial Updates
Camp Stanley Storage Activity, RRAD

Project	Year	Sites	Month Ending	Funds spent	Total expended	Total remaining	Comments
WMU Closures 1995							
AL/OEB order 126							
PES #721460							
			Oct	11,876	316,491	425,897	
		EA wkplan/develop.		0	2,797	67,203	
		F14 closure		0	36,100	13,900	
		Oxid. pond		0	843	14,157	
		B20		9,810	175,792	151,596	Drft rpt; EPA presentation
		B20 Baseline RA		0	0	30,000	
		Waste minimiz.		0	22,802	(7,802)	
		Air permits		257	37,351	(2,351)	Support work
		Other SWMUs		1,809	40,806	159,194	Geophys. tech memo final
			Nov	3,528	320,020	422,368	
		EA wkplan/develop.		0	2,797	67,203	
		F14 closure		0	36,100	13,900	
		Oxid. pond		0	843	14,157	
		B20		1,496	177,288	150,100	Drf rpt, planning, UXB costing
		B20 Baseline RA		0	0	30,000	
		Waste minimiz.		0	22,802	(7,802)	
		Air permits		724	38,076	(3,076)	Address TNRCC request for data
		Other SWMUs		1,308	42,114	157,886	Final costs for geophys. tech memo
			Dec	18,940	338,959	403,429	
		EA wkplan/develop.		0	2,797	67,203	
		F14 closure		0	36,100	13,900	
		Oxid. pond		0	843	14,157	
		B20		16,038	193,326	134,062	Begin clearing around B-20
		B20 Baseline RA		0	0	30,000	
		Waste minimiz.		0	22,802	(7,802)	
		Air permits		2,783	40,859	(5,859)	Additional air modeling
		Other SWMUs		118	42,233	157,767	Reproduc. costs for geophys. tech memo

WMU Closures
 AL/OEB order 126
 PES #721460

Recommended changes for 1996:

	1995 Total Remaining	Change	Proposed Total Remaining
TOTAL:	\$403,429		\$403,429
EA wkplan/develop.	\$67,203	(\$67,203)	\$0
F14 closure	\$13,900	(\$13,900)	\$0
Oxid. pond	\$14,157	(\$14,157)	\$0
B20	\$134,062	\$265,226	\$399,288
B20 Baseline RA	\$30,000	(\$30,000)	\$0
Waste minimiz.	(\$7,802)	\$0	(7802)
Air permits	(\$5,859)	\$10,000	\$4,141
Other SWMUs	\$157,767	(\$157,767)	\$0

All funds moved to the B-20 RI and the Air Permits.

Project	Year	Month Ending	Funds spent	Total expended	Total remaining	Comments
Well 16						
AL/OEB order 67	1994	Jan	105	157,903	1,025,085	Admin
Old ES #AU358		Feb	122	158,025	1,024,963	Admin
New ES #721397		Mar	258	158,283	1,024,705	Admin and briefing
		Apr	63	158,345	1,024,643	Admin
		May	3,075	161,420	1,021,568	TNRCC well info; gw monitoring
		Jun	4,894	166,315	1,016,673	Data evaluation; gwm rpt
		Jul	5,859	172,174	1,010,814	GWM rpt, begin tasks 1,2,3
		Aug	8,056	180,230	1,002,758	Subcontract, begin tasks 1,2,3
		Sep	17,113	197,343	985,645	Field actions for tasks 1,2,3
		Oct	12,880	210,223	972,765	Field actions for task 7; data evaluation
		Nov	68,465	278,689	904,299	Data evaluation, tech. memo
		Dec	8,255	286,943	896,045	Tech memo, gwm report
	1995	Jan	7,454	294,398	888,590	Tech memo, gwm report
		Feb	23,797	318,195	864,793	Geophy. survey, drilling, gwm rpt
		Mar	32,897	332,463	850,525	Geophy, drilling, rpts, waste charac. (NPDES)
		Apr	40,195	372,658	810,330	Packer test, gw monit, tech memos
		May	65,015	437,673	745,315	Geophys., tech memos, NPDES permit
		Jun	129,884	567,557	615,431	GW monit, revise tech memos, soil gas
		Jul	59,782	627,338	555,650	Soil gas, summary sheets/rpts
		Aug	30,132	657,470	525,518	Rpts, purchase/install weather station
		Sep	38,205	695,674	487,314	Geo field work, soil gas draft rpt
		Oct	31,907	727,582	455,406	Geo/soil gas/presentation
		Nov	38,806	766,388	416,600	Planning, mapping, soil gas
		Dec	65,595	831,983	351,005	GWM, presentations, SVE plan, O-1 smp.

WELL 16 UPDATE JANUARY, 1996

PROJECT: Groundwater Evaluation
PROJECT/TASK MANAGER: Susan Roberts
PARSONS ES PROJECT: 721397
CONTRACT NUMBER: AL/OEB F33615-89-D-4003
ORDER NUMBER: 67, mod
PERFORMANCE PERIOD: Dec 95 - Jan 96

MEETINGS

- 7 Dec 95: Technical interchange meeting regarding SWMUs B-3 and O-1, attended by representatives of CSSA, AL/OEB, AFCEE, Booz, Allen, and Hamilton, and Parsons ES. Agreed on "Data Objectives" for each site, to be accomplished during Jan-Feb 96, before any decisions are made on best remedial alternatives for B-3 or O-1.

FIELD ACTIVITIES

December 1995

- Finalized soil-gas surveys around well 16 area. About 250 additional points in following areas - east of H&I area, B-3, O-1, Salado Creek area. Results still indicate that B-3 and O-1 contain highest concentrations of PCE.
- Removed pump and piping from well 11 for monitoring - found extensive pipe corrosion.
- Quarterly (Oct-Dec 95) groundwater monitoring in 12 onsite and 4 offsite wells for VOCs and metals.
- Began ground penetrating radar (GPR) survey on 29 Dec 95 (to continue through 3 Jan 96). Surveyed Moyer Rd, East Outer Drive, and gravel road through B-3 south down to intersection with East Outer Drive.
- Well plugging at 4 LPST sites week of 26 Dec 95, in accordance with TNRCC directive of Aug 95.

January 1996

- Continued GPR survey through 3 Jan 96. Surveyed Butler Road, West Outer Drive, B-3, O-1, and line from North Drive to southeast to Butler Drive. Results were good - offsets of underlying limestone found on every survey line. Preliminary evaluation indicates that faults around well 16 are part of faulted zone, rather than one or two major faults.
- Seismic survey 8-17 Jan 96. Surveyed between Moyer Road and East Outer Drive along south-southeast line, down to well 1. Preliminary results suggest offset areas, but faults planes and dips not established on first run of data.
- Bench scale volatilization test at O-1. Capt Williston of AL/OEB excavated hot spots and placed soil on clean liner. Parsons ES collected field screening data and soil samples to test for VOC and

chromium concentrations. CSSA will turn over soils every 2-3 weeks, and Parsons ES will collect samples and evaluate data for amount of volatilization.

- Inventory of drums of IDW, 16 Jan 96
- Resampling for verification of metals, 19 Jan 96
- Characterize drums from potential source investigations for appropriate disposal options

DELIVERABLES

- Meeting minutes of 7 Dec 95 submitted on 14 Dec 95. Includes list of "Data Objectives" for B-3 and O-1.
- Submitted draft Background Sampling Plan to CSSA, AL/OEB, and AFCEE in Dec 95. Revisions underway to meet AFCEE QAPP requirements.
- Submitted Dr. Young's preliminary report on GPR surveys, 5 Jan 96. Final report will be submitted by Dr. Young in late January 96.
- Submitted Soil Vapor Extraction (SVE) Plan for the B-3 site on 16 Jan 96.

Deliverables in preparation:

- ◇ Oct-Dec 95 groundwater monitoring report (due 2 Feb 96)
- ◇ Soil-gas survey technical memorandum (due 9 Feb 96)
- ◇ Final report of GPR survey (no due date; anticipated in late Jan 96)
- ◇ Seismic reflection survey report (due to Parsons on 24 Jan 96)
- ◇ Letter report for proposed location of deep monitoring wells (no due date; anticipated 31 Jan 96)

PROJECTED ACTIVITIES FOR NEXT PERIOD

Field Actions:

- Upon approval of deep well locations, begin installation of deep monitoring wells
- Upon approval of SVE plan, begin installation of pilot test system
- Testing of soil at O-1
- Characterize drums from potential source investigation for appropriate disposal options

In-office Actions:

- Submittal of deliverables as stated above
- Data evaluation and QA/QC for field tasks
- Data validation of GW monitoring data from Dec 95

Summary of Metals Analysis by Well, CSSA

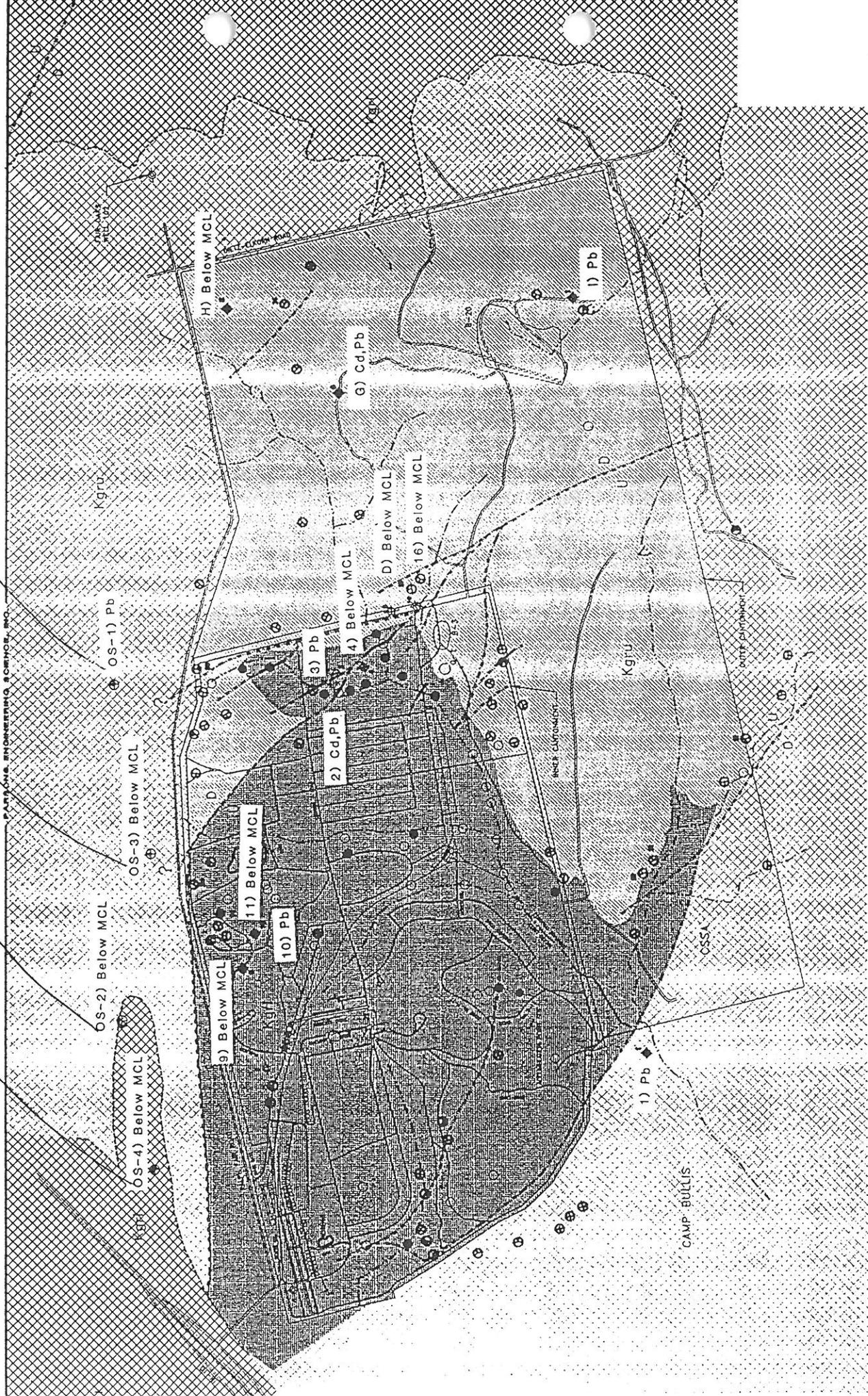
January 1996

Well	Arsenic (As) (.05 mg/L)	Barium (Ba) (2.0 mg/L)	Cadmium (Cd) (0.005 mg/L)	Chromium (Cr) (0.1 mg/L)	Copper (Cu) (1.3 mg/L)	Lead (Pb) (0.015 mg/L)	Mercury (Hg) (0.002 mg/L)	Nickel (Ni) (0.1 mg/L)	Zinc* (Zn)
1	<.005	<.05	<.005	<.01	.06	.023	<.0004	<.02	4.0
2	.013	.3	.008	.01	.05	.25	<.0004	.04	.33
3	<.005	<.05	<.005	<.01	<.02	.029	<.0004	<.02	.04
4	<.005	<.05	<.005	<.01	<.02	<.015	<.0004	<.02	.04
9	<.005	<.05	<.005	<.01	.02	<.015	<.0004	<.02	.84
10	<.005	<.05	<.005	<.01	.1	.060	<.0004	.02	.18
11	.01	<.05	<.005	<.01	<.02	<.015	<.0004	<.02	.04
16	<.005	<.05	<.005	<.01	.05	<.015	<.0004	<.02	.15
D	<.005	<.05	<.005	<.01	<.02	<.015	<.0004	<.02	.03
G	.005	<.05	.007	<.01	.11	.045	<.0004	<.02	2.2
H	<.005	<.05	<.005	<.01	.04	<.015	<.0004	<.02	.36
I	<.005	.06	<.005	<.01	.05	.019	<.0004	<.02	9.9
OS-1	<.005	<.05	<.005	<.01	<.02	.017	<.0004	<.02	.67
OS-2	<.005	<.05	<.005	<.01	.02	<.015	<.0004	<.02	.50
OS-3	<.005	<.05	<.005	<.01	<.02	<.015	<.0004	<.02	.32
OS-4	<.005	<.05	<.005	<.01	<.02	<.015	<.0004	<.02	.03

Maximum Contaminant Level (MCL) listed for each metal.

Bold numbers indicate levels above MCL.

*Zinc is not listed in state or federal regulations though SDWA is considering it for regulation as of May 1995.



FAUOR
THOMAS
HUNDENORF
COMBERT

PARTLOW ENGINEERING & SERVICE, INC.

CAMP BULLIS

CSSA

WEST CRYPTANALOGY

NORTH CRYPTANALOGY

OS-4) Below MCL

OS-2) Below MCL

OS-3) Below MCL

OS-1) Pb

9) Below MCL

10) Pb

11) Below MCL

2) Cd, Pb

3) Pb

4) Below MCL

D) Below MCL

16) Below MCL

G) Cd, Pb

H) Below MCL

1) Pb

I) Pb

Drinking Water Standards
May 1995

Chemicals	Standards		
	Status Regulation	MCLG (mg/L)	MCL (mg/L)
Inorganics			
Arsenic	Under review	--	0.05
Barium	Final	2	2
Cadmium	Final	0.005	0.005
Chromium (total)	Final	0.1	0.1
Copper (at tap)	Final	1.3	TT (action level 1.3 mg/L)
Lead (at tap)	Final	zero	TT (action level 0.015 mg/L)
Mercury (inorganic)	Final	0.002	0.002
Nickel	Final	0.1 (being remanded)	0.1 (being remanded)
Zinc	Listed for regulation	--	--

MCGL = maximum contaminant level goal

MCL = maximum contaminant level

TT = treatment technique