

Appendix D September 2003 Summary of Metals Results



DEPARTMENT OF THE ARMY
CAMP STANLEY STORAGE ACTIVITY, RRAD
25800 RALPH FAIR ROAD, BOERNE, TX 78015-4800

24 September 2003

U - 116 - 03

Mr. Sonny Rayos
Texas Commission on Environmental Quality
Corrective Action Section, Closure Team
P.O. Box 13087 (MC-127)
Austin, TX 78711-3087

Subject: TCEQ Letter to CSSA dated July 30, 2003
Camp Stanley Storage Activity (CSSA), Boerne, Texas
TCEQ Number: Solid Waste Registration Number 69026
EPA Identification Number: TXD2210020739

Dear Mr. Rayos:

In your letter dated July 30, 2003, TCEQ requested additional information regarding CSSA's off-post quarterly groundwater monitoring program. The Final December 2002 Off-Post Quarterly Groundwater Monitoring Report provided groundwater analytical results for the off-post monitoring of the drinking water wells at Fair Oaks, Jackson Woods, Leon Springs Villa, and Hidden Springs Estates Subdivisions. In accordance with CSSA's Data Quality Objectives, these off-post samples are analyzed for volatile organic compounds (VOCs) only. Your letter requested reasons and justifications why laboratory analyses are limited only to VOCs and/or reasons and justifications why RCRA Eight metals are excluded from the analyses of drinking water at these off-post monitoring locations.

There are several reasons for our selection of the analyte list. The off-post list is derived from the list of contaminants of concern (COCs) on post, which is based on historically-detected analytes (detected since the inception of the groundwater monitoring program in 1991) and process knowledge. The selected list of parameters monitored in the off-post wells is supported by historic off-post samples collected by CSSA and other available analytical data for the area. All of these data sources show that chlorinated solvents are the only COCs migrating off-post; therefore, the off-post quarterly monitoring samples are only analyzed for chlorinated solvents.

Historically-Detected Analytes and Process Knowledge

Analytes detected above regulatory standards in soil and groundwater at CSSA are limited to a short list of chlorinated VOCs and metals associated with processes conducted at the post. The metals of concern at CSSA are arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc.

Metals concentrations above the appropriate Action Level (AL) or Maximum Contaminant Level (MCL) have not been frequently detected in groundwater from on-post wells. Although there have been some metals exceedances on-post, they have been sporadic and limited largely to wells located in the interior areas of the post. Piping for agricultural/livestock wells is suspected as contributing to some of the elevated metals concentrations (especially at wells CS-G, CS-H, and CS-I). Results for metals exceeding MCLs/ALs are attached. Neither the nine CSSA metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, and zinc) nor RCRA Eight metals are included as contaminants of concern (COCs) for groundwater sampled from off-post wells due to the lack of on-post metals detections exceeding MCLs.

Although groundwater samples collected on-post have not been analyzed for semivolatile organic compounds (SVOCs), pesticides, or PCBs, many soil and bedrock samples have. SVOCs and PCBs have not been widely detected at any site at CSSA, and pesticides have never been detected.

Historic Results for Off-Post Samples Collected by CSSA

The on-post list of contaminants of concern is supported by off-post analytical data from various sources. Privately-owned off-post wells were sampled periodically from 1995 through 2001 for the nine CSSA metals. No metals concentrations exceeding the EPA MCL were observed in any of the samples collected, with the exception of the lead concentration in a sample collected at RFR-3 in December 1995. A follow-up sample was collected from the well in March 1996, and no lead was detected. These results are provided in the quarterly monitoring reports.

Off-Post Analytical Data from Other Sources

Additional data has been obtained from Bexar Metropolitan Water District for the Leon Springs Villa and Hidden Springs Estates subdivisions, and from Fair Oaks Ranch Utilities for the Fair Oaks Ranch. Metals data for the Leon Springs Villa includes the years 1996 through 2000. Metals data for the Hidden Springs Estates subdivision is only available for 2001. Metals data for Fair Oaks Ranch includes the years 1995 through 2002. No metals concentrations exceeding the EPA MCL values were observed in any of the samples collected in these water supply wells neighboring CSSA.

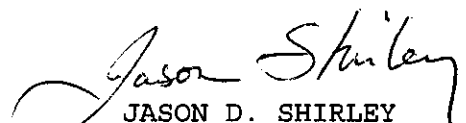
Summary

CSSA is committed to ensuring that those neighboring residents with groundwater wells affected by contamination from CSSA have safe drinking water. Granular-activated carbon units have been installed at several private wellheads for this purpose. Groundwater monitoring on-post since 1991 has shown that groundwater contamination is limited to chlorinated solvents. The sporadic above-MCL metals detections have been confined to wells within the interior of government-owned lands. Groundwater data available for off-post wells, including public water supply wells which are required to be sampled on a regular basis by the purveyor, do not show any other contamination.

Therefore, sampling for additional parameters in off-post wells by CSSA is not warranted and would not be cost-effective; thus, other parameters have not been included in the off-post analyte list.

If you have any further questions, or if we can be of any assistance, do not hesitate to call me at 210-295-7416.

Sincerely,


JASON D. SHIRLEY
Installation Manager

Attachment

cc: Mr. Greg Lyssy
EPA Region 6

Mr. Kent Grubb
U.S. Army, Army Medical Command, Fort Sam Houston, Staff Judge
Advocate

Ms. Julie Burdey
Parsons

Table 2
Groundwater Metals Detections Above MCLs, 1995 - 2003

Well ID	Laboratory	Sample Date	Barium (mg/L)	Cadmium (mg/L)	Lead (mg/L)	Nickel (mg/L)	
CS-10	Chemron	12/12/95	0.05U	0.005U	0.06	0.02U	
	Chemron	01/19/96	0.03	0.005U	0.004	0.02U	
	Chemron	02/28/96	0.04	0.001U	0.002U	0.02U	
	ITS	01/07/97 ¹	0.04	0.0002U	0.0015U	0.002U	
	ITS	10/23/97 ¹	0.04	0.0002U	0.0015U	0.003U	
	O'B&G	09/10/99	0.0354	0.00019U	0.00142U	0.002F	
	O'B&G	12/13/99	0.0355	0.00019U	0.00142U	0.002F	
	O'B&G	03/20/00	0.0375	0.00019U	0.0031F	0.003F	
	O'B&G	06/13/00	0.0357	0.00019U	0.00053U	0.0014U	
	O'B&G	09/13/00	0.0378	0.00019U	0.00053J	0.0014U	
	O'B&G	12/12/00	0.0372	0.00019J	0.00053J	0.00107U	
	O'B&G	03/19/01	0.0375	0.00021U	0.0003U	0.0013F	
	AP18429	06/12/01	0.0406	0.0002F	0.0026F	0.003F	
	AP22231	09/17/01	0.0373J	0.0002F	0.0032F	0.009F	
	AP26252/AP26257	12/11/01	0.0405	0.0001U	0.0014F	0.003F	
	AP30836	03/19/02	0.0372	0.0001U	0.0026F	0.008F	
	STL	06/17/02	0.0349	0.000061F	0.0023	0.0054F	
	STL	09/10/02	0.0390	0.000022U	0.00048F	0.0017U	
	STL	12/10/02	0.039	0.000026F	0.00064F	0.0026F	
	STLD3C250256	03/19/03	0.04	0.000035F	0.0013F	0.0017U	
STLD3F180197	06/17/03	0.039	0.000051U	0.00085F	0.0042U		
CS-11	Chemron	12/15/95	0.05U	0.005U	0.015U	0.02U	
	Chemron	02/29/96	0.03	0.001U	0.002U	0.02U	
	ITS	01/20/97 ¹	0.04	0.0002U	0.00177F	0.002U	
	ITS	10/23/97 ¹	0.04	0.00021F	0.00803	0.0033F	
	O'B&G	09/10/99	0.0640	0.00019U	0.00142U	0.004F	
	O'B&G	12/15/99	0.0354	0.00019U	0.00142U	0.0014U	
	O'B&G	03/20/00	0.0366	0.00019U	0.0108	0.0014U	
	O'B&G	06/14/00	0.0454	0.00019U	0.0026F	0.0014U	
	O'B&G	09/13/00	0.0379	0.00019U	0.0098J	0.002F	
	O'B&G	12/12/00	0.0383	0.00019J	0.0165R	0.0016F	
	O'B&G	03/19/01	0.0334	0.0002U	0.0072	0.0011U	
	AP26253/AP26258	12/11/01	0.0335	0.0001U	0.0063	0.002F	
	STL D2C15026000	03/14/02	0.0367	0.000062F	0.0145	0.0041U	
	STL	06/17/02	0.037	0.000022U	0.0154	0.0041U	
	STLD3F180197	06/17/03	0.037	0.000051U	0.004	0.0042U	
CS-16	Chemron	12/13/95	0.05U	0.005U	0.015U	0.02U	
	Chemron	02/29/96	0.03	0.001U	0.002U	0.02U	
	ITS	02/21/97 ¹	0.03	0.0002U	0.0015U	0.002U	
	ITS	10/24/97 ¹	0.03	0.0002U	0.0015U	0.0030U	
	O'B&G	09/14/99	0.0317	0.00019U	0.00142U	0.216	
	O'B&G	12/14/99	0.0316	0.00019U	0.00142U	0.0014U	
	O'B&G	03/21/00	0.0320	0.00019U	0.00053U	0.0014U	
	O'B&G	06/13/00	0.0298	0.00019U	0.00053U	0.0014U	
	Duplicate	O'B&G	06/13/00	0.0300	0.00019U	0.00053U	0.0014U
	O'B&G	09/12/00	0.0326	0.00019U	0.00053J	0.0014U	
	O'B&G	12/13/00	0.0332	0.00019J	0.00053J	0.0017F	
	O'B&G	03/20/01	0.0315	0.00021U	0.00026U	0.0011U	
	AP18327	06/13/01	0.0397	0.0002F	0.0014F	0.001U	
	AP22210	09/13/01	0.0329J	0.0001U	0.0019F	0.001U	
	AP26533/AP26519	12/14/01	0.0326	0.0001U	0.0008U	0.001U	
	STL D2C15026000	03/14/02	0.0387	0.000022U	0.00038F	0.0041U	
	STL	06/18/02	0.035	0.000028F	0.00037F	0.0041J	
	Well Upgraded to CS-MW16-LGR	STL	09/09/02	0.035	0.0001F	0.025F	0.0023F
		STLD3F200337	06/19/03	0.038	0.000051U	0.00019U	0.0042U

Table 2
Groundwater Metals Detections Above MCLs, 1995 - 2003

Well ID	Laboratory	Sample Date	Barium	Cadmium	Lead	Nickel	
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	
CS-1	Chemron	12/11/95	0.05U	0.005U	0.023	0.02	
	Chemron	01/19/96	0.03	0.005U	0.015	0.02U	
	Chemron	03/01/96	0.03	0.001U	0.015	0.02U	
	ITS	01/07/97 ¹	0.04	0.00028F	0.030	0.00307F	
	ITS	10/23/97 ¹	0.034	0.0002U	0.007	0.003U	
	O'B&G	09/09/99	0.0300	0.00019U	0.0017F	0.0014U	
	O'B&G	12/14/99	0.0293	0.00019U	0.0026F	0.0014U	
	O'B&G	03/20/00	0.0278	0.00019U	0.0172	0.0014U	
	O'B&G	06/14/00	0.032	0.00019U	0.0043F	0.0014U	
	Duplicate	O'B&G	06/14/00	0.0323	0.00019U	0.0041F	0.0014U
	O'B&G	09/13/00	0.0347	0.00019U	0.0851J	0.002F	
	O'B&G	12/12/00	0.0302	0.0114R	0.0314J	0.00107U	
	O'B&G	03/19/01	0.0372	0.0002U	0.0131	0.0014U	
	AP18430	06/12/01	0.0377	0.0001U	0.0063	0.001U	
	AP22229	09/17/01	0.0352J	0.0001U	0.0082	0.002F	
	AP26254/AP26259	12/11/01	0.0356	0.0001U	0.0037F	0.003F	
	AP30837	03/19/02	0.0343	0.0001U	0.005	0.001U	
	STL	06/17/02	0.0308	0.000027F	0.0028	.0041U	
	STL	09/10/02	0.036	0.000022U	0.0031	.002F	
	STL	12/10/02	0.037	0.000036F	0.0053	.0022F	
	STLD3C250256	03/19/03	0.035	0.000022U	0.003	.0017U	
	STLD3F200339	06/19/03	0.034	0.000051U	0.0021	.0042U	
	CS-2	Chemron	12/12/95	0.3	0.008	0.25	0.04
Duplicate		Chemron	12/12/95	0.05U	0.005U	0.015U	0.02U
Chemron		01/19/96	0.03	0.005U	0.01	0.02	
Duplicate		Chemron	01/19/96	0.04	0.005U	0.011	0.02U
Chemron		02/29/96	0.04	0.001U	0.005	0.02U	
ITS		01/15/97 ¹	0.04	0.0002U	0.00205F	0.002U	
ITS		10/23/97 ¹	0.03	0.0002U	0.0015U	0.003U	
O'B&G		09/07/99	0.04	0.00019U	0.00142U	0.012	
Duplicate		O'B&G	09/07/99	0.0386	0.00019U	0.00142U	0.013
O'B&G		12/14/99	0.0327	0.00019U	0.00142U	0.002F	
Duplicate		O'B&G	12/14/99	0.0332	0.00019U	0.00142U	0.002F
O'B&G		03/20/00	0.0340	0.00019U	0.00053U	0.002F	
Duplicate		O'B&G	03/20/00	0.0342	0.00019U	0.00053U	0.002F
O'B&G		06/12/00	0.0338	0.00019U	0.00053U	0.0014U	
O'B&G		09/12/00	0.0364	0.00019U	0.00053J	0.002F	
Duplicate		O'B&G	09/12/00	0.0370	0.00019U	0.00053J	0.002F
O'B&G		12/13/00	0.0359	0.00019J	0.00053J	0.0137J	
Duplicate		O'B&G	12/13/00	0.0373	0.00019J	0.00053J	0.0234J
O'B&G		03/20/01	0.0338	0.00021M	0.00026U	0.0033F	
Duplicate		O'B&G	03/20/01	0.0332	0.00021M	0.00026U	0.0037F
AP18323		06/13/01	0.0349	0.0001U	0.0008U	0.004F	
AP22213		09/13/01	0.0352J	0.0001U	0.0012F	0.006F	
AP26534/AP26520		12/14/01	0.0318	0.0001	0.0014F	0.001U	
STL D2C15026000	03/14/02	0.035	0.000022U	0.00073F	0.0103		
STL	06/18/02	0.0358	0.000029F	.0014F	.0187J		
Duplicate	STL	06/18/02	0.0346	0.000032F	.0013F	.0136J	
STLD3F200337	06/19/03	0.034	0.00011F	0.00021F	.0042U		
CS-3	Chemron	12/12/95	0.05U	0.005U	0.029	0.02U	
	Chemron	01/19/96	0.03	0.005U	0.002	0.02U	
	Chemron	02/27/96	0.04	0.001U	0.028	0.02U	
	ITS	01/10/97 ¹	0.03	0.0002U	0.0015U	0.002U	
	O'B&G	12/16/99	0.0265	0.00019U	0.00142U	0.002F	

Table 2
Groundwater Metals Detections Above MCLs, 1995 - 2003

Well ID	Laboratory	Sample Date	Barium (mg/L)	Cadmium (mg/L)	Lead (mg/L)	Nickel (mg/L)	
CS-G	Chemron	12/12/95	0.05U	0.001U	0.002U	0.02U	
	Chemron	01/19/96	0.02	0.005U	0.048	0.02U	
	Chemron	02/28/96	0.02	0.002	0.094	0.02U	
	ITS	01/17/97 ¹	0.03	0.003	0.039	0.002U	
	ITS	10/24/97 ¹	0.03	0.001	0.020	0.0030U	
	O'B&G	09/08/99	0.032	0.0017	0.00142U	0.002F	
	AP18432	06/12/01	0.0239	0.0001U	0.002F	0.001U	
	AP22201	09/12/01	0.0252J	0.0003F	0.0369	0.001U	
	AP26733	12/18/01	0.0219	0.0001U	0.0015F	0.001U	
	STL D2C14033800E	03/13/02	0.0209	0.000041F	0.0041	.0041U	
	STL	06/19/02	0.0206	0.000038F	0.0021	.0041U	
	Well Upgraded to CS-MWG-LGR	STL	09/11/02	0.021	0.000022U	0.00015U	.0017U
	STLD3F180197	06/16/03	0.019	0.000051U	0.00019U	0.022	
	CS-H	Chemron	12/12/96	0.05U	0.007	0.045	0.02U
		Chemron	02/28/96	0.04	0.001U	0.013	0.02U
ITS		01/07/97 ¹	0.03	0.00083F	0.007	0.002U	
ITS		10/23/97 ¹	0.03	0.00145F	0.011	0.003U	
AP18433		06/12/01	0.0343	0.0001	0.0459	0.002F	
AP22202		09/12/01	0.0317J	0.001	0.047	0.001U	
AP26732		12/18/01	0.0191	0.0002F	0.005	0.001U	
STL D2C14033800E		03/13/02	0.0292	0.000097F	0.0033	.0041U	
STL		06/19/02	0.0267	0.00023F	0.0089	.0041U	
Well Upgraded to CS-MWH-LGR		STLD3C240193	03/17/03	0.029	0.00003F	0.003	0.017
CS-I		Chemron	12/12/95	0.06	0.005U	0.019	0.02U
	Chemron	01/19/96	0.05	0.005U	0.022	0.02U	
	Chemron	02/28/96	0.05	0.001U	0.018	0.02U	
	ITS	10/23/97 ¹	0.11	0.0002U	0.00225F	0.004F	
	O'B&G	09/07/99	0.1169	0.00019U	0.00142U	0.002F	
	O'B&G	12/14/99	0.1155	0.00019U	0.00142U	0.003F	
	O'B&G	03/21/00	0.1242	0.00019U	0.00053U	0.002F	
	O'B&G	06/13/00	0.1231	0.00019U	0.00053U	0.002F	
	O'B&G	09/12/00	0.1252	0.00019U	0.00053J	0.003F	
	O'B&G	12/12/00	0.1359	0.00019J	0.002F	0.0015F	
	O'B&G	03/20/01	0.1322	0.00021U	0.00026U	0.0016F	
	AP18434	06/12/01	0.1413	0.0001U	0.0349	0.003F	
	AP22206	09/12/01	0.1028J	0.0001U	0.0193	0.003F	
	AP26642/AP26639	12/17/01	0.1256	0.0003F	0.0827	0.001U	
	STL D2C14033800E	03/13/02	0.161	0.00022F	0.087	.0069F	

Table 2
Groundwater Metals Detections Above MCLs, 1995 - 2003

Well ID	Laboratory	Sample Date	Barium (mg/L)	Cadmium (mg/L)	Lead (mg/L)	Nickel (mg/L)
CS-MW3-LGR	AP18445	06/14/01	0.0279	0.0002F	0.0316	0.003F
	AP22207	09/12/01	0.0286J	0.0001U	0.002F	0.004F
	AP26643/AP26640	12/17/01	0.0281	0.0001U	0.0009F	0.001U
	Duplicate AP26644/AP26641	12/17/01	0.0277	0.0001U	0.0008U	0.001U
	STL D2C140338006	03/13/02	0.0268	0.000022U	0.00023F	.0041U
	STLD3F210180	06/20/03	0.027	0.000081F	0.00019U	0.0042U
CS-MW17-LGR	STL	09/12/02	0.037	0.000023F	0.00096F	0.15
	STLD3F240154	06/23/03	0.03	0.000052F	0.00019U	0.039
	Duplicate STL D3F240154	06/23/03	0.031	0.000066F	0.00019U	0.038
CS-MW18-LGR	STL	09/12/02	0.039	0.000022U	0.00015U	0.015
	STLD3F240154	06/23/03	0.23	0.000051U	0.00019U	0.0066F
Comparison Criteria	MCLs/Action Levels:		0.2	0.005	0.015	0.1

Notes:

- Due to potential improper practices, the ITS data cannot be used to draw any conclusions about groundwater quality at CSSA.
- January 1996 data represents re-test data.
- Samples were not analyzed for Alkalinity, TDL, pH, and Resistivity prior to 1997.
- F = The analyte was positively identified but the associated numerical value is below the RL.
- J = The analyte was positively identified below quantitation limits; the quantitation is an estimate.
- R = The data are unusable with deficiencies in the ability to analyze the sample and meet QC criteria.
- U = The analyte was analyzed for, but not detected. The associated numerical value is at or below the method detection.
- NA = Not sampled for this parameter.

Value
Value
Value

Value > or = MCL
MCL > Value > or = RL
RL > Value > MDL

¹ Indicates that data is screening analytical data only.