



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

May 3, 2012

U-027-12

[REDACTED]
[REDACTED]
28703 IH-10 West
Boerne, TX 78006

SUBJECT: Sampling of Water Well I10-4, Located at 25690 IH-10 West

[REDACTED]

Camp Stanley Storage Activity (CSSA) collected a groundwater sample from your well (I10-4) on March 7, 2012. The purpose of this letter is to transmit the analytical results for your well sample, and to also inform you about a treatment technology that CSSA will be testing at Area of Concern 65 (AOC-65) in the coming months. In preparation for this upcoming treatability study, the March 7 sample of groundwater from your well was analyzed for additional analytes so that baseline conditions could be established. This sample was submitted to a laboratory contracted by CSSA's environmental contractor for volatile organic compounds (VOCs), metals, and natural water quality parameters such as alkalinity and pH. This letter provides you with the laboratory results and a formal thank you for your assistance in this groundwater monitoring effort.

Upcoming Treatability Study

AOC-65, located in the southwest corner of CSSA, see enclosed map, has been identified as a source of VOCs found in groundwater around CSSA. A soil vapor extraction (SVE) system was installed in 2002 and is being tested to evaluate its effectiveness and ability to remove VOCs from soil and rock in the area. Since the initial operation of the SVE system began in 2002, a reduction in soil gas concentrations has been observed. However, we have continued to look for other technologies to accelerate the rate of contaminant removal.

CSSA will be testing a technology called in-situ chemical oxidation (ISCO) to treat contamination underlying and in the vicinity of a former drainage ditch at AOC-65. ISCO is accomplished by injecting a chemical oxidizer, sodium persulfate, directly into the contaminated soil/rock and groundwater to remediate chemical contaminants in place. In March, a 325-foot-long, 15-foot-deep, 3.5-foot wide trench was excavated in the drainage ditch at AOC-65 to remove contaminated soil and rock and to provide a suitable location for injecting a small amount of the ISCO material into the ground where underlying rock and groundwater contaminant concentrations are highest.

CSSA is confident that this study will not impact the safety of your water, in fact it should gradually improve it by helping reduce the amounts of VOCs in your groundwater. We will be injecting ISCO material into the trench in June for this pilot treatability study, and we anticipate that its range of influence will not extend to the location of your well due to the small amount of ISCO material we will be using. We will closely monitor on-post wells surrounding the injection

site to monitor its range of effect, and with your permission, we will also collect samples from your well one day, 5 days, 15 days, and 30 days following the ISCO injection date as an added measure to verify the range of the ISCO's effects. In the unlikely event that residuals created by the injection of this small amount of ISCO migrate off-post, your well's granular activated carbon (GAC) unit will treat these residual compounds.

March 2012 Monitoring Results

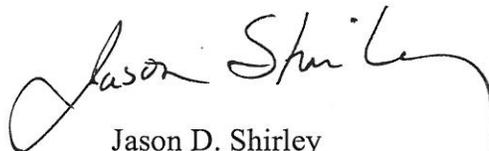
An abbreviated summary of the March 2012 analytical results for your well compared to maximum contaminant levels (MCLs) allowed in drinking water by the U.S. EPA under the Safe Drinking Water Act is provided in the attached table.

Based on the analytical data, levels of the VOCs PCE and TCE were identified in the water sample from your well. These levels are below the applicable MCL and do not affect usability of your well. However, past results have reported PCE concentrations above the MCL. The analytical results for the March 7 sample do show lead concentrations above the action level. We have received your correspondence notifying CSSA that there are no future plans to use this well. However, in the future should this well be put back into service, a filtration system will need to be installed. Please notify Camp Stanley prior to use of the well and a granular activated carbon (GAC) filtration system will be installed at the expense of Camp Stanley. CSSA will be responsible for all costs associated with operation and maintenance of this system. The GAC filtration system will clean the VOC contaminants from the water before delivery for consumption. Results from the laboratory analysis are provided as an attachment for the event included in the summary table above.

As part of the ongoing CSSA environmental program, we are continuing to investigate and cleanup VOC source areas on the installation and to track these compounds in groundwater on- and off-post. As part of this effort, your well is scheduled to be sampled again in June 2012, and following the initiation of the ISCO pilot treatability study. Results of the study will be provided to you.

Again, we would like to thank you for your cooperation. We are committed to making sure your water is safe to use and keeping you informed. If you have any questions concerning this letter, or would like further information about the upcoming study, please contact Gabriel Moreno-Fergusson, Environmental Program Manager, at (210) 295-7014.

Sincerely,

A handwritten signature in black ink that reads "Jason Shirley". The signature is written in a cursive style with a large loop at the beginning and a long horizontal stroke at the end.

Jason D. Shirley
Installation Manager

Enclosure

March 7, 2012 Groundwater Sample Analytical Results for I10-4, 25690 IH-10 West

Compound	Result (see footnotes for explanation of data flags)	MCL, Action Level, or Secondary MCL
Tetrachloroethene (PCE)	4.47 ppb	5 ppb
Trichloroethene (TCE)	1.90F ppb	5 ppb
<i>cis</i> -1,2-Dichloroethene (DCE)	<0.07 ppb (non-detect)	70 ppb
Total Antimony	<1.8 ppb (non-detect)	6 ppb
Dissolved Antimony	4.7B ppb	
Total Arsenic	<0.2 ppb (non-detect)	10 ppb
Dissolved Arsenic	<0.2 ppb (non-detect)	
Total Beryllium	<0.2 ppb (non-detect)	4 ppb
Dissolved Beryllium	<0.2 ppb (non-detect)	
Total Cadmium	<0.3 ppb (non-detect)	5 ppb
Dissolved Cadmium	<0.3 ppb (non-detect)	
Total Chromium	1.6F ppb	100 ppb
Dissolved Chromium	<1.0 ppb (non-detect)	
Total Copper	7 ppb	1,300 ppb
Dissolved Copper	<3.0 ppb (non-detect)	
Total Lead	39.7 ppb	15 ppb ¹
Dissolved Lead	<1.9 ppb (non-detect)	
Total Manganese	<1.2 ppb (non-detect)	50 ppb ²
Total Mercury	<0.1 ppb (non-detect)	2 ppb
Dissolved Mercury	0.1J ppb	
Total Nickel	<1.0 ppb (non-detect)	--
Dissolved Nickel	1.0J ppb	
Total Selenium	<3.2 ppb (non-detect)	50 ppb
Dissolved Selenium	<3.2 ppb (non-detect)	
Total Silver	0.081J ppb	100 ppb ²
Dissolved Silver	<0.081 ppb (non-detect)	
Total Thallium	<1.0 ppb (non-detect)	2 ppb
Dissolved Thallium	<1.0 ppb (non-detect)	
Total Zinc	74 ppb	5,000 ppb ²
Dissolved Zinc	51.8 ppb	
Chloride	11.19 ppm	250 ppm ²
Sulfate	15.76 ppm	250 ppm ²
Sulfide	<2.53 ppm (non-detect)	--
Bicarbonate / Total Alkalinity	369.2 ppm	--
pH	6.6	6.5 – 8.5 ²

Footnotes:

¹ This is an action level. If more than 10% of tap water samples exceed the action level, water systems must take additional steps.

² This is a non-mandatory secondary MCL (SMCL). USEPA does not enforce SMCLs. They are established only as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color and odor. These contaminants are not considered to present a risk to human health at the SMCL. B = Analyte was also detected in laboratory method blank sample. The dissolved concentration is a subset of the total concentration. Since no total arsenic was detected, this dissolved concentration consists entirely of sample contamination at the laboratory.

F = Analyte was positively identified above the laboratory method detection limit, but below the laboratory reporting limit for the compound.

J = Analyte was positively identified but the concentration is an estimation.



0 200 400 800
Feet

-  Water Supply Well Location
-  CSSA Fence Line
-  Trench

Figure 1

Trench Location Map
Camp Stanley Storage Activity

PARSONS

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: EPA 8260B Preparatory Method: 5030B AAB #: 120314AN-164940
 Lab Name: APPL, Inc Contract #: *G012
 Field Sample ID: I10-4 Lab Sample ID: AY56682 Matrix: Water
 % Solids: NA Initial Calibration ID: N120309
 Date Received: 09-Mar-12 Date Prepared: 14-Mar-12 Date Analyzed: 14-Mar-12
 Concentration Units: ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
1,1-DCE	0.12	1.2	0.12	1		U
CIS-1,2-DCE	0.07	1.2	0.07	1		U
TCE	0.05	1.0	1.90	1		
TETRACHLOROETHENE	0.06	1.4	4.47	1		
TRANS-1,2-DCE	0.08	0.6	0.08	1		U
VINYL CHLORIDE	0.08	1.1	0.08	1		U

Surrogate	Recovery	Control Limits	Qualifier
SURROGATE: 1,2-DICHLOROETHANE-	95.3	69-139	
SURROGATE: 4-BROMOFLUOROBENZ	85.1	75-125	
SURROGATE: DIBROMOFLUOROMET	102	75-125	
SURROGATE: TOLUENE-D8 (S)	80.7	75-125	

Internal Std	Qualifier
1,4-DICHLOROBENZENE-D4 (IS)	
CHLOROBENZENE-D5 (IS)	
FLUOROBENZENE (IS)	

Comments: ARF: 67176

AFCEE
INORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: EPA 6010B Preparatory Method: 3010A AAB #: 120314A-165196
 Lab Name: APPL, Inc Contract #: *G012
 Field Sample ID: I10-4 Lab Sample ID: AY56662 Matrix: Water
 % Solids: NA Initial Calibration ID: 120316A
 Date Received: 09-Mar-12 Date Prepared: 14-Mar-12 Date Analyzed: 16-Mar-12
 Concentration Units: ug/L

Analyte	MDL	RL	Concentration	Dilution	Qualifier
ANTIMONY (SB)	1.8	5.0	1.8	1	U
ARSENIC (AS)	0.2	5.0	0.2	1	U
BERYLLIUM (BE)	0.2	2.0	0.2	1	U
CADMIUM (CD)	0.30	5.0	0.30	1	U
CHROMIUM (CR)	1.0	5.0	1.6	1	F
COPPER (CU)	3	5.0	7	1	
LEAD (PB)	1.9	5.0	39.7	1	
MANGANESE (MN)	1.2	5.0	7.0	1	
NICKEL (NI)	1.0	5.0	1.0	1	U
SELENIUM (SE)	3.2	5.0	3.2	1	U
SILVER (AG)	0.081	1.0	0.081	1	J
THALLIUM (TL)	1.0	5.0	1.0	1	U
ZINC (ZN)	8	50.0	74	1	

Comments: ARF: 67173

AFCEE
INORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: EPA 6010B Preparatory Method: 3010A AAB #: 120313A-164956
 Lab Name: APPL, Inc Contract #: *G012
 Field Sample ID: I10-4 Lab Sample ID: AY56662 Matrix: Water
 % Solids: NA Initial Calibration ID: 120314A
 Date Received: 09-Mar-12 Date Prepared: 13-Mar-12 Date Analyzed: 14-Mar-12
 Concentration Units: ug/L

Analyte	MDL	RL	Concentration	Dilution	Qualifier
ANTIMONY (SB) (DISSOLVED)	1.8	5.0	4.7	1	B
ARSENIC (AS) (DISSOLVED)	0.2	5.0	0.2	1	U
BERYLLIUM (BE) (DISSOLVED)	0.2	2.0	0.2	1	U
CADMIUM (CD) (DISSOLVED)	0.3	5.0	0.3	1	U
CHROMIUM (CR) (DISSOLVED)	1.0	5.0	1.0	1	U
COPPER (CU) (DISSOLVED)	3.0	5.0	3.0	1	U
LEAD (PB) (DISSOLVED)	1.9	3.0	1.9	1	U
NICKEL (NI) (DISSOLVED)	1.0	5.0	1.0	1	J
SELENIUM (SE) (DISSOLVED)	3.2	5.0	3.2	1	U
SILVER (AG) (DISSOLVED)	0.081	1.0	0.081	1	U
THALLIUM (TL) (DISSOLVED)	1.0	5.0	1.0	1	U
ZINC (ZN) (DISSOLVED)	8.0	50.0	51.8	1	

Comments: ARF: 67173

AFCEE
INORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: EPA 7470A Preparatory Method: 7470A AAB #: 120314A-164884
Lab Name: APPL, Inc Contract #: *G012
Field Sample ID: I10-4 Lab Sample ID: AY56662 Matrix: Water
% Solids: NA Initial Calibration ID: 120315B
Date Received: 09-Mar-12 Date Prepared: 14-Mar-12 Date Analyzed: 15-Mar-12
Concentration Units: ug/L

Analyte	MDL	RL	Concentration	Dilution	Qualifier
MERCURY (HG)	0.1	0.2	0.1	1	U

Comments: ARF: 67173

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INORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: EPA 7470A Preparatory Method: 7470A AAB #: 120313A-164867
Lab Name: APPL, Inc Contract #: *G012
Field Sample ID: I10-4 Lab Sample ID: AY56662 Matrix: Water
% Solids: NA Initial Calibration ID: 120314A
Date Received: 09-Mar-12 Date Prepared: 13-Mar-12 Date Analyzed: 14-Mar-12
Concentration Units: ug/L

Analyte	MDL	RL	Concentration	Dilution	Qualifier
MERCURY (HG) (DISSOLVED)	0.1	0.2	0.1	1	J

Comments: ARF: 67173

AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS

Analytical Method: EPA 9056

AAB #: 120328B-165320

Lab Name: APPL, Inc

Contract #: *G012

Field Sample ID: I10-4

Lab Sample ID: AY56662

Matrix: Water

% Solids: NA

Initial Calibration ID: 120315

Date Received: 09-Mar-12

Date Prepared: 29-Mar-12

Date Analyzed: 29-Mar-12

Concentration Units: mg/L

Analyte	MDL	RL	Concentration	Dilution	Qualifier
CHLORIDE	0.08	1.000	11.19	1	
SULFATE	0.26	1.000	15.76	1	

Comments: ARF: 67173

AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM 2320B

AAB #: 120320A-165127

Lab Name: APPL, Inc

Contract #: *G012

Field Sample ID: I10-4

Lab Sample ID: AY56662

Matrix: Water

% Solids: NA

Date Received: 09-Mar-12

Date Prepared: 20-Mar-12

Date Analyzed: 20-Mar-12

Concentration Units: mg/L

Analyte	MDL	RL	Concentration	Dilution	Qualifier
BICARBONATE AS CaCO ₃	0.3	2.0	369.2	1	
TOTAL ALKALINITY AS CaCO ₃	0.85	2.0	369.17	1	

Comments: ARF: 67173

AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM4500S2F

AAB #: 120312A-164761

Lab Name: APPL, Inc

Contract #: *G012

Field Sample ID: I10-4

Lab Sample ID: AY56662

Matrix: Water

% Solids: NA

Initial Calibration ID: na

Date Received: 09-Mar-12

Date Prepared: 12-Mar-12

Date Analyzed: 12-Mar-12

Concentration Units: mg/L

Analyte	MDL	RL	Concentration	Dilution	Qualifier
SULFIDE	2.53	5.0	2.70	1	F

Comments: ARF: 67173

AFCEE
WET CHEM ANALYSES DATA SHEET 2
RESULTS

Analytical Method: SM4500HB

AAB #: 120309a-165080

Lab Name: APPL, Inc

Contract #: *G012

Field Sample ID: I10-4

Lab Sample ID: AY56662

Matrix: Water

% Solids: NA

Initial Calibration ID: 120309A

Date Received: 09-Mar-12

Date Prepared: 09-Mar-12

Date Analyzed: 09-Mar-12

Concentration Units: pH Units

Analyte	MDL	RL	Concentration	Dilution	Qualifier
PH		1.0	6.6@11.7C	1	

Comments: ARF: 67173
