### **FINAL**

### September 2009

# Off-Post **Quarterly Groundwater Monitoring Report**



**Prepared For** 

Department of the Army Camp Stanley Storage Activity Boerne, Texas

December 2009

#### GEOSCIENTIST CERTIFICATION

#### September 2009 Off-post Quarterly Groundwater Monitoring Report

For

Department of the Army
Camp Stanley Storage Activity
Boerne, Texas

I, Julie Burdey, P.G., hereby certify that the September 2009 Off-post Quarterly Groundwater Monitoring Report for the Camp Stanley Storage Activity installation in Boerne, Texas accurately represents the site conditions of the subject area. This certification is limited only to geoscientific products contained in the subject report and is made on the basis of written and oral information provided by the CSSA Environmental Office, laboratory data provided by APPL, and field data obtained during groundwater monitoring conducted at the site in September 2009, and is true and accurate to the best of my knowledge and belief.

Julie Burdey, P.G. State of Texas

Geology License No. 1913

Julia Brudery

12/30/2009

Date

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#### **EXECUTIVE SUMMARY**

- A total of 22 off-post wells and 6 post-GAC samples were collected during the September 2009 monitoring event. Well JW-12 was not sampled due to an expired access agreement and the inability to contact the well owner. JW-12 has been sampled eleven times in the past and found VOCs (below the RL) one time.
- Analyses indicated off-post wells RFR-10 and I10-4 exceeded the maximum contaminant level (MCL) for tetrachloroethene (PCE). Well RFR-10 is equipped with a granular activated carbon (GAC) treatment system. Well I10-4 sits in a vacant lot, is not currently being used, and there is no pump in the well.
- Well RFR-9 had its first PCE detection (0.20 μg/L) since sampling first began on this well in September 2001.
- Post-GAC samples collected in September 2009 were all non-detect indicating that the GAC filtration systems are functioning properly. Post-GAC samples will be collected again during the March 2010 event.
- Semi-annual GAC maintenance was performed in May 2009. This involved replacing one carbon canister and other routine maintenance in each GAC. During this maintenance visit the GAC structures were also replaced with new metal buildings. The next GAC maintenance visit is due in November 2009.

# SEPTEMBER 2009 OFF-POST GROUNDWATER MONITORING REPORT CAMP STANLEY STORAGE ACTIVITY

#### 1.0 INTRODUCTION

This report presents results from the off-post quarterly sampling performed at Camp Stanley Storage Activity (CSSA) in September 2009 as required by the Administrative Order on Consent dated May 5, 1999. The purpose of this report is to present a summary of the sampling results. Results from all four 2009 quarterly monitoring events (March, June, September, and December) will be described in detail in an Annual Report to be submitted after December 2009. The Annual Report will also provide an interpretation of all analytical results and an evaluation of any temporal or spatial trends observed in the groundwater contaminant plume during investigations.

Groundwater monitoring scoped under the U.S. Army Corps of Engineers (USACE) Fort Worth District (CESWF), Contract W9126G-07-D-0028, Task Order DO11, was performed August 31 through September 15, 2009. The quarterly off-post groundwater monitoring program was initiated in September 2001 in accordance with the **Off-Post Monitoring Program and Response Plan** (CSSA, 2002, herein referred to as the "Plan"). Action levels for detection of volatile organic compounds (VOCs) and the rationale for sampling off-post wells are located in the Plan.

The CSSA groundwater monitoring program also follows the provisions of the groundwater monitoring program DQOs as well as the recommendations of all applicable project-specific work plans. **Appendix A** provides an evaluation of the Data Quality Objective Attainment for this sampling event.

Current objectives of the off-post groundwater monitoring program include determining whether concentrations of chlorinated VOCs detected in off-post public and private drinking water wells exceed safe drinking water standards. Other objectives are to determine the lateral and vertical extent of the contaminant plumes and identify trends (decreasing or increasing) in contaminant levels over time in the sampled wells.

#### 2.0 SEPTEMBER 2009 ANALYTICAL RESULTS

In September 2009, a groundwater sample was collected from each of 22 off-post wells in addition to 6 post-GAC samples shown in **Figure 2-1**. Well JW-12, which was scheduled for sampling, was not sampled this quarter due to the inability to get in contact with the well owner and an expired access agreement. Post-GAC (granular activated carbon) samples (LS-6-A2, LS-7-A2, RFR-10-A2, RFR-10-B2, RFR-11-A2, and OFR-3-A2) are collected semi-annually and will be sampled again during the March 2010 monitoring event. **Table 2-1** includes the rationale for selection of the wells sampled in September 2009, and **Figure 2-1** provides well locations for the following sampled wells:

- One public supply well in the Fair Oaks area (FO-J1);
- Two public supply wells in the Hidden Springs Estates subdivision (HS-1 and HS-2);
- One public well (I10-7) and one privately owned unused well (I10-4), in the

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Interstate-10 area;

- Six privately owned wells in the Jackson Woods subdivision (JW-7, JW-8, JW-14, JW-28, JW-29, and JW-30);
- Five wells in the Leon Springs Villa area (one public well: LS-6; two privately-owned wells: LS-5 and LS-7; and two wells: LS-1 and LS-4 that were taken out of service but will remain in the sampling program for data collection purposes);
- Two privately owned wells on Old Fredericksburg Road (OFR-1 and OFR-3); and
- Four privately owned wells in the Ralph Fair Road area (RFR-9, RFR-10, RFR-11, and RFR-14).

All wells were sampled from a tap located as close to the wellhead as possible. Most taps were previously installed by CSSA to obtain a representative groundwater sample before pressurization or storage of groundwater in the water supply distribution system. Water was purged to engage the well pump prior to sample collection. Conductivity, pH, and temperature readings were recorded to confirm adequate purging while the well was pumping. Generally, this required an average of 20 gallons to be purged prior to sample collection.

A total of 28 groundwater samples (22 wells and 6 post-GAC samples), three field duplicate samples, two matrix spike/matrix spike duplicate (MS/MSD) pairs, and three trip blanks were submitted to Agriculture & Priority Pollutant Laboratory (APPL) in Fresno, California for analysis. Groundwater samples were analyzed for the short list of VOCs using SW-846 Method 8260B. The approved short list of VOCs includes *cis*-1,2-dichloroethene (*cis*-1,2-DCE), *trans*-1,2-DCE, 1,1-DCE, tetrachlorethene (PCE), trichloroethene (TCE), and vinyl chloride.

The data packages (Parsons internal reference DO11 #58, #60, and #62) contain the analytical results for this sampling event. Laboratory results were reviewed and verified according to the guidelines outlined in the CSSA Quality Assurance Project Plan (QAPP), Version 1.0. Parsons received data packages September 24 through September 30, 2009.

Concentrations of the VOCs detected in September 2009 are presented in **Table 2-2**. Full analytical results from the September 2009 sampling event are presented in **Appendix B**. As shown in **Table 2-1**, 29 samples were scheduled for collection in September 2009, but one well (JW-12) was not sampled due to the inability to contact the well owner and an expired access agreement.

On May 2009 routine semi-annual maintenance was performed on the GAC treatment systems installed at LS-6, LS-7, OFR-3, RFR-10, and RFR-11. The carbon canisters were exchanged, new metal GAC shelters were installed, and other routine maintenance was performed. Post-GAC samples were collected this quarter and all samples were non detect. Post-GAC samples will be collected again in March 2010.

Based on historical detections, the lateral extent of VOC detections extends approximately 0.5 mile beyond the south and west boundaries of CSSA. Detections of VOCs have extended south to well HS-1 and HS-2 and west to OFR-1 (Figure 2-1).

Table 2-1 Sampling Rationale for September 2009

|                |          |      |     |      |     |       | •     |       |        |      |          |     |     | • • • | _        |               |          |       |      | 5 Italio | maic 10 |     |     | .007 |     |      |     |      |                  | • • • • • |            | ~ ·  | 1   |
|----------------|----------|------|-----|------|-----|-------|-------|-------|--------|------|----------|-----|-----|-------|----------|---------------|----------|-------|------|----------|---------|-----|-----|------|-----|------|-----|------|------------------|-----------|------------|--|---|
| W. II II       | 2001     | ١.,  | 20  |      |     |       |       | 03    |        |      | 2004     |     | ١,, | 200   |          | .  ,          | _        |       | 06   |          |         |     | 007 | _    |     |      | 008 |      |                  | 2009      | α.         | Sampling   |   |
| Well ID        | Sept Dec |      |     | _    |     | Mar   |       |       |        |      |          |     | Mar |       |          |               |          |       |      |          | Mar     |     | _   |      | Mar | June |     |      | Mar              |           |            | Frequency:   |   |
| DOM-2          | NS       |      |     | NS   | NS  |       | NS    | NS    | NS     | N    |          |     |     |       |          | NS            |          | NS    | NS   | NS       |         | NS  | NS  | NS   |     | NS   | NS  | NS   | NS               | NS        | NA         | main electricity has been disconnected                   | VOCs detected are greater than                                  |
| FO-8           | NS NS    |      |     | NS   |     |       |       |       | NS     | N    |          |     |     |       |          | NS            |          | NS    | NS   | NS       | 2.10    | NS  | NS  | NS   | 270 | NS   | NS  |      | 2.70             | NS        | NS         | As needed, once annually                                 | 90% of the MCL. Sample  |
| FO-17          | NS NS    |      | NS  |      | NS  |       | NS    |       | NS N   |      | NS<br>NS |     | NS  |       |          |               | NS       | NIC   | NS   | NS       | NS      | NIC | NS  | NS   | NS  | NC   |     | NS   | NS               | NC        | NS         | As needed, once annually                                 | monthly; quarterly after GAC                                    |
| FO-22          | NS       | NS   | NS  | NS   |     | NS    | NS    | NS    | N      | _    |          |     | NS  | NS    |          |               |          | NS    | NS   |          | NS      | NS  | NS  | NS   |     | NS   | NS  | NS   |                  | NS        |            | As needed, once annually                                 | installation.   |
| FO-J1          | NS NS    | NG   | NIC | NIC  | NIC | NC    | NIC   | NIC   | NC N   | N    |          | NIC | NIC | NIC   |          | NS 1          | NS       | NIC   |      |          |         |     |     |      |     |      |     |      |                  |           | Yes        | Qtrly, 1 year thru June 10                               | VOC- detected and another than                                  |
| HS-1<br>HS-2   |          | NS   | NS  | NS   | NS  | NS    | NS    | NS    | NS N   | 5 N  | 9 N9     | NS  | NS  | NS    | NS       | NS I          | NS       | NS    |      |          |         |     |     |      |     |      |     |      |                  |           | Yes<br>Yes | Qtrly, 1 year thru Sept 09<br>Qtrly, 1 year thru June 10 | VOCs detected are greater than 80% of the MCL. The well will be |
| HS-3           | NS NS    | NS   |     | NIC  | NS  | NC    |       | NIC   | NS N   | C    | NC       | NS  | NIC |       | NS       | NIC N         | JC       |       | NS   | NIC      | NS      |     | NS  | NS   | NIC |      | NIC | NS   | NC               |           | NS         | As needed, once annually                                 | placed on a monthly sampling                                    |
| I10-2          | INS      | No   |     | IND  | IND | IND   |       | INS   | No N   | 3    | NS       | IND | INO |       | 103      | No 1          |          | NS    | NS   |          | No      | NS  |     | NS   | IND | NS   | NS  |      | 110              | NS        |            | As needed, once annually                                 | schedule until GAC installation                                 |
| I10-2<br>I10-4 | NS       |      |     |      |     |       |       |       | NS     |      |          |     |     |       |          | _             |          | 110   | 110  | IND      |         |     | NA  |      | NA  |      | NA  |      |                  | No        | Yes        | Quarterly  | then quarterly sampling after                                   |
| I10-4          | NS NS    | NS   | NS  | NS   |     | NS    | NS    | NS    |        | S N  | S NS     |     | NS  | NS    | NS       | N             | NS.      | NS    | NS   |          | NS      |     | NS  |      |     |      |     | NS   |                  | NS        |            | As needed, once annually                                 | GAC installation.   |
| I10-3          | NS NS    |      | NS  |      | NS  | 110   | 110   |       | NS N   |      | NS       |     | 110 | 140   | NB       | 1             | 15       | 110   | 110  |          | 145     | 145 | 140 | IND  | 110 | 145  | IND | 145  |                  | 110       | Yes        | Qtrly, for delineation                                   | GAC installation.   |
| I10-8          | NS NS    |      |     | NS   | NS  | NS    | NS    |       | NS N   |      |          |     | NS  | NS    | NS       | ١             | NS       | NS    | NS   |          | NS      | NS  | NS  |      | NS  | NS   | NS  |      | NS               | NS        | NS         | As needed, once annually                                 |   |
| JW-5           | NS NS    |      | NS  | NS   | NS  | NS    | NS    | NS    | NS N   | _    |          | _   | NS  | IND   | IND      | 1             | 45       | NS    | NS   | NS       | 140     | 140 | 140 |      | 110 | 145  | IND |      | No               | NS        | NS         | As needed, once annually                                 | VOCs detected are less than 80%                                 |
| JW-6           | NS       |      | 140 | NS   | NS  | NS    | 110   |       |        |      | NS       |     |     |       | NS       | NS N          | NS       | 110   | NS   |          | NS      |     | NS  | NS   | NS  |      | NS  | NS   | NS               | 110       | NS         | As needed, once annually                                 | of the MCL (<4.0 ppb and >0.06                                  |
| JW-7           | NS       |      | NS  |      |     |       | NS    | 145   | 115 11 |      | NB       | 110 | 110 |       | 110      | 110 1         | 10       |       | 110  | 110      | 145     |     | 145 | 145  | 110 |      | NB  | 145  | 145              |           | Yes        | Otrly, 1 year thru June 10                               | ppb for PCE & <4.0 ppb >0.05                                    |
| JW-8           | NS NS    |      |     |      | NS  | NS    | 110   |       |        |      |          |     |     |       |          | $\overline{}$ | $\dashv$ |       |      |          |         |     |     |      |     |      |     |      |                  |           |            | Qtrly, 1 year thru June 10                               | ppb for TCE). After four quarters                               |
| JW-9           | 110 110  | 110  | 140 | 110  | 110 | 110   |       |       |        |      |          |     |     | NS    | NS       | NS            |          | NS    | NS   | NS       |         | NS  | NS  | NS   |     | NS   | NS  | NS   |                  | NS        | NS         | As needed, once annually                                 | of stable results the well can be                               |
| JW-9-A2*       | NS NS    | NS   | NS  | NS   |     | NS    | NS    | NS    | NS N   | S N  | S NS     | NS  | NS  |       |          |               |          |       | NS   | NS       | NS      |     | NS  |      | NS  | NS   | NS  |      | NS               | NS        | NS         | As needed  | removed from quarterly sampling.                                |
| JW-12          | NS       |      |     |      |     | NS    |       |       | NS NS  | N    |          |     |     |       |          |               |          | NS    | 110  | NS       | NS      |     | 145 | 145  | NS  | NB   | NS  |      | 145              | 110       | Yes        | Otrly, 1 year thru Dec 09                                | January January St.   |
| JW-13          | NS       |      |     |      |     | NS    | 110   |       |        |      | NS       |     |     |       |          |               | NS       |       | NS   |          | NS      | 110 | NS  | NS   |     |      |     | NS   | NS               |           | NS         | As needed, once annually                                 |   |
| JW-14          | 110      | 110  | 140 | 110  |     | 110   |       | 110   | 110 11 | 5    | 118      | 110 | 110 |       | 110      |               | rol rol  |       | 110  | 110      | 110     |     | 145 | 145  | 110 |      | 110 | 145  | 110              |           | Yes        | Qtrly, due to location                                   | This well has a GAC filtration                                  |
| JW-15          | NS NS    | NS   | NS  | NS   | NS  | NS    | NS    | NS    | NS N   | S N  | S NS     | NS  | NS  |       |          |               |          | NS    | NS   | NS       |         | NS  | NS  | NS   |     | NS   | NS  | NS   |                  | NS        | NS         | As needed, once annually                                 | unit installed by CSSA. Post GAC                                |
| JW-26          | NS NS    |      | NS  | - 10 |     | - 1.0 | - 1.0 | - 1.0 |        |      |          |     |     | NS    | NS       | 1             |          | NS    |      | 7.5      | NS      |     |     |      | NA  |      |     | NA   | NA               | NA        | NA         | Wellowner declined access.                               | samples are collected every six                                 |
| JW-27          | NS NS    |      | NS  | NS   | NS  | NS    |       | NS    | NS N   | S    | NS       | NS  |     |       | NS       |               |          |       |      |          |         |     |     | NS   |     |      |     |      |                  | NS        | NS         | As needed, once annually                                 | months.   |
| JW-28          | NS NS    | NS   | NS  | NS   |     |       | NS    |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     | NS  | NS   | NS  |      |     |      |                  |           | Yes        | Qtrly, due to location                                   | A1 - after GAC canister #1                                      |
| JW-29          | NS NS    | NS   | NS  | NS   | NS  | NS    | - 1.0 |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     |      |     |      |                  |           |            | Qtrly, due to location                                   | A2 - after GAC canister #2                                      |
| JW-30          | NS NS    |      |     |      | NS  | - 1.0 |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     |      |     |      |                  |           | Yes        | Qtrly, due to location                                   | *JW-9-A2 is the well owner's                                    |
| LS-1           |          | - 1  |     | - 12 |     |       |       |       |        |      | NS       | NS  | NS  | NS    | NS       | NS 1          | NS       | NS    | NS   | NS       | NS      | NS  | NS  | NS   | NS  |      |     |      |                  |           | Yes        | QED low flow pump installed                              | system, not a CSSA GAC.   |
| LS-2           |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          | NS            |          | - 1-2 | NS   | NS       | NS      | NS  | NS  | NS   | NS  | NS   | NS  | NS   | NS               | NS        | NS         | Well is offline, to be plugged soon                      | ,   |
| LS-2/LS-3-A1   | NS NS    | NS   | NS  |      | NS  |       | NS    |       | NS     | N    | IS       | NS  |     | NS    |          | NS            |          | NS    | - 10 | NS       |         | NS  | NS  | NS   | NS  | NS   | NS  | NS   | NS               | NS        | NS         | GAC unit removed   | Yes To be sampled in September                                  |
| LS-3           | 110 110  | 11.5 | 110 |      | 110 |       | 110   |       | 11.5   | - 11 |          | 110 |     | 110   |          | 110           |          | 110   |      | 110      |         | NS  | NS  | NS   | NS  | NS   | NS  |      | NS               | NS        | NS         | Well is offline, to be plugged soon                      | 2009.   |
| LS-2/LS-3-A2   | NS NS    |      | NS  |      | NS  |       | NS    |       | NS     | N    | IS       | NS  |     | NS    |          | NS            |          | NS    |      | NS       |         | NS  | NS  | NS   | NS  | NS   | NS  |      | NS               | NS        | NS         | GAC unit removed   |   |
| LS-4           | 110 110  |      | 115 |      | 110 |       | 110   |       | 110    | - 11 |          | 110 |     | 110   |          | 110           |          | 110   |      | 110      |         | NS  | NS  | NS   | NS  | 118  | 110 | 11,5 | 118              | 110       | Yes        | QED low flow pump installed                              | FT  |
| LS-5           |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     | 3.2 |      |     |      |     |      |                  |           | Yes        | Qtrly, 1 year thru Mar 10                                | First event for sampling by CSSA.                               |
| LS-6           |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               | $\dashv$ |       |      |          |         |     |     |      |     |      |     |      |                  |           | Yes        | Qtrly, 1 year thru Mar 10                                | - and ottom too same printing of the same                       |
| LS-6-A2        |          |      | NS  |      | NS  |       | NS    |       | NS     | N    | S        | NS  |     | NS    |          | NS            |          | NS    |      | NS       |         | NS  |     | NS   |     | NS   |     | NS   |                  | NS        |            | Biannually (Mar & Sept)                                  | NS Not sampled for that event.                                  |
| LS-7           |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     |      |     |      |                  |           |            | Qtrly, 1 year thru Mar 10                                | I I   |
| LS-7-A2        |          |      | NS  |      | NS  |       | NS    |       | NS     | N    | S        | NS  |     | NS    |          | NS            |          | NS    |      | NS       |         | NS  |     | NS   |     | NS   |     | NS   |                  | NS        |            | Biannually (Mar & Sept)                                  | No VOCs detected. Sample on an                                  |
| OFR-1          | NS       |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     |      |     |      |                  |           |            | Otrly, 1 year thru Mar 10                                | as needed basis.  |
| OFR-2          | NS NS    |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          | NA    | NA   | NA       | NA      | NA  | NA  | NA   | NA  | NA   | NA  | NA   | NA               | NA        | NA         | Well was P&A by Centex                                   |   |
| OFR-3          |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     |      |     |      |                  |           |            | Qtrly, 1 year thru Mar 10                                | NA Not applicable, samples can no                               |
| OFR-3-A2       | NS NS    |      | NS  |      | NS  |       | NS    |       | NS     | N    | S        | NS  |     | NS    |          | NS            |          | NS    |      | NS       |         | NS  |     | NS   |     | NS   |     | NS   |                  | NS        |            | Biannually (Mar & Sept)                                  | longer be collected from this                                   |
| OFR-4          | NS NS    |      |     | NS   |     | NS    |       |       | NS     | N    | S NS     |     |     | NS    |          |               |          |       | NS   |          |         |     | NS  | NS   |     |      | NS  |      |                  |           | NS         | As needed, once annually                                 | locaiton due to reason stated.                                  |
| RFR-3          | NS NS    | NS   | NS  | NS   | NS  | NS    | NS    |       |        |      |          |     | NS  | NS    | NS       | 1             |          | NS    | NS   |          | NS      | NS  | NS  |      | NS  |      | NS  |      | NS               |           |            | As needed, once annually                                 |   |
| RFR-4          | NS NS    |      |     |      | NS  |       |       | NS    |        | N    | S NS     | NS  | Tol | NS    | NS       |               |          | NS    | NS   |          |         | NS  |     | NS   |     | NS   | NS  |      | NS               |           |            | As needed, once annually                                 |   |
| RFR-5          | NS NS    | NS   | NS  |      | NS  | NS    | NS    |       | NS     | N    | S NS     | NS  |     | NS    | NS       | NS            |          | NS    | NS   | NS       |         | NS  | NS  | NS   |     | NS   | NS  |      | NS               | NS        | NS         | As needed, once annually                                 |   |
| RFR-6          | NS       |      | NS  |      |     |       |       |       |        |      | S NS     |     |     |       |          |               |          |       |      |          |         |     |     | NA   |     |      |     |      |                  |           |            | Plugged & abandoned                                      |   |
| RFR-7          | NS       | NS   |     | NS   | NS  | NS    |       | NS    | N      | S N  | S NS     |     |     | NS    |          |               |          | NS    | NS   |          | NA      | NA  | NA  |      | NA  | NA   |     |      | NA               | NA        | NA         | Plugged & abandoned                                      |   |
| RFR-8          | NS       | NS   |     |      | NS  |       |       | NS    | NS N   | S    | NS       | NS  |     |       | NS       |               | NS       |       | NS   | NS       | NS      |     | NS  |      |     |      | NS  | NS   |                  |           | NS         | As needed, once annually                                 |   |
| RFR-9          |          | NS   |     |      | NS  |       |       |       | NS N   |      |          |     | NS  |       |          |               |          | NS    |      | NS       | NS      | NS  |     |      | NS  | NS   |     |      | NS               | NS        | Yes        | As needed, once annually                                 |   |
| RFR-10         |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     |      |     |      |                  |           | Yes        | Qtrly, 1 year thru Sept 09                               |   |
| RFR-10-A2      |          |      | NS  |      | NS  |       | NS    |       | NS     | N    | IS       | NS  |     | NS    |          | NS            |          | NS    |      | NS       |         | NS  |     | NS   |     | NS   |     | NS   |                  | NS        | Yes        | Biannually (Mar & Sept)                                  |   |
| RFR-10-B2      |          |      | NS  | NS   | NS  | NS    | NS    |       | NS     | N    | S        | NS  |     | NS    |          | NS            |          | NS    |      | NS       |         | NS  |     | NS   |     | NS   |     | NS   |                  |           |            | Biannually (Mar & Sept)                                  |   |
| RFR-11         |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     |      |     |      |                  |           | Yes        | Qtrly, 1 year thru Sept 09                               |   |
| RFR-11-A2      |          |      | NS  |      | NS  |       | NS    |       | NS     | N    | S        | NS  |     | NS    |          | NS            |          | NS    |      | NS       |         | NS  |     | NS   |     | NS   |     | NS   |                  | NS        |            | Biannually (Mar & Sept)                                  |   |
| RFR-12         |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       | NS   |          |         |     | NS  |      |     |      |     | NS   |                  |           |            | As needed, once annually                                 |   |
| RFR-13         |          |      |     |      |     |       |       |       |        | Well | Installe | d   |     |       |          |               |          |       |      |          | NS      |     |     | NS   | NS  |      |     | NS   | NS               |           | NS         | As needed, once annually                                 |   |
| RFR-14         |          |      |     |      |     |       |       |       |        |      |          |     |     | W     | ell Inst | alled         |          |       |      |          |         |     |     |      |     |      |     |      |                  |           | Yes        | Qtrly, 1 year thru Mar 10                                |   |
| _              |          | _    |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     |      |     |      |                  |           |            |  |   |
|                |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     | II.  | •   |      | Total Pr         | e GAC     |            | 23   |   |
|                |          |      |     |      |     |       |       |       |        |      |          |     |     |       |          |               |          |       |      |          |         |     |     |      |     | •    |     |      | Fotal Protal Pos |           |            | 23<br>6  |   |

3

Total # of first time samples Total # of samples:

J:\746\746545\_746546\01000 GW Mon\Off-Post\September 09 Event

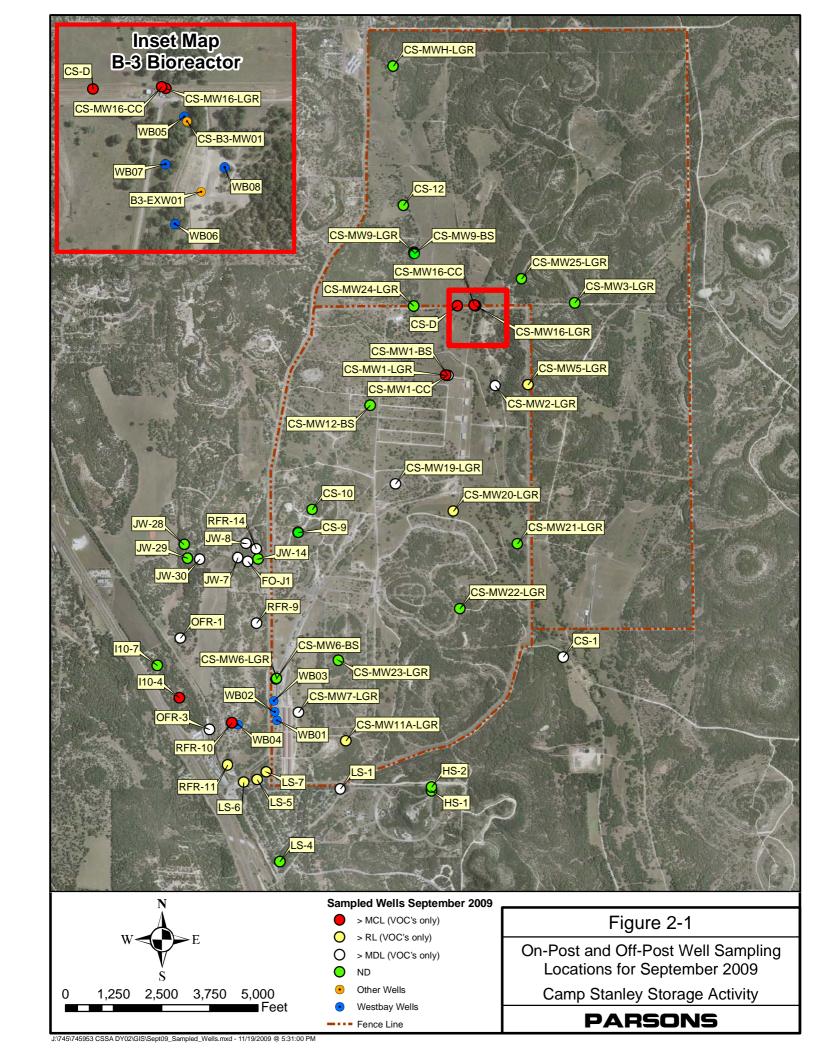


Table 2-2 September 2009 Off-Post Groundwater Results, Detected Analytes Only

| Subdivision   Well ID   Sample Date   1,1-DCE   DCE   DCE   PCE   TCE   Chloride   Comments  |                  |                |                  |              | cis-1,2-    | trans-1,2-  |             |       | Vinyl |                          |
|--|------------------|----------------|------------------|--------------|-------------|-------------|-------------|-------|-------|--------------------------|
| Fair Oaks   FO-J1   9/1/2009       0.43F     4th consecutive non-detect  | Subdivision      | Well ID        | Sample Date      | 1,1-DCE      | ,           |             | PCE         | TCE   |       | Comments                 |
| HS-1   |                  |                |                  |              |             |             | 0.43F       |       |       |                          |
| Hi-10   Hi-1 | Tun Ouns         |                |                  |              |             |             |             |       |       | 4th consecutive non-     |
| HS-2   | Hidden Springs   | HS-1           | 9/2/2009         |              |             |             |             |       |       |                          |
| H-10   |                  |                |                  |              |             |             |             |       |       |                          |
| H-10   |                  |                |                  |              |             |             |             |       |       |                          |
| H-10   |                  |                |                  |              |             |             |             |       |       | PCE increased for the    |
| 110-7   9/1/2009   | IH-10            | I10-4          | 9/1/2009         |              |             |             | 6.9         | 2.47  |       | 4th consecutive quarter  |
| III-7 FD   9/1/2009       0.6  |                  |                |                  |              |             |             |             |       |       | 1                        |
| JW-8   9/4/2009       0.48F           JW-14   9/1/2009                 JW-28   9/2/2009               JW-29   9/2/2009             JW-29   9/2/2009             JW-30   9/1/2009         0.21F       JW-30   9/1/2009         0.48F   0.18F       Leon Springs   LS-1   9/1/2009         0.64F   0.18F       LS-4   9/1/2009         0.90F   2.72       LS-5   8/31/2009         0.90F   2.72       LS-6   8/31/2009         0.99F   1.46       LS-7   8/31/2009               LS-7   8/31/2009               LS-7   8/31/2009             LS-7   8/31/2009             LS-7   8/31/2009             LS-7   8/31/2009             LS-7   8/31/2009             OFR-1   9/1/2009             GFR-3 A2   8/31/2009             RFR-9   9/4/2009             RFR-9   9/4/2009             RFR-10   8/31/2009             RFR-10   8/31/2009             RFR-10   8/31/2009             RFR-11   8/31/2009   |                  |                | 9/1/2009         |              |             |             |             |       |       |                          |
| JW-14   9/1/2009   |                  | JW-7           | 9/15/2009        |              |             |             | 0.66F       |       |       |                          |
| JW-28   9/2/2009   |                  | JW-8           | 9/4/2009         |              |             |             | 0.48F       |       |       |                          |
| Subdivision   JW-29   9/2/2009   |                  | JW-14          | 9/1/2009         |              |             |             |             |       |       |                          |
| JW-29 FD   9/2/2009  | Jackson Woods    | JW-28          | 9/2/2009         |              |             |             |             |       |       |                          |
| Section Serior   | Subdivision      | JW-29          | 9/2/2009         |              |             |             |             |       |       |                          |
| JW-30   9/1/2009         0.21F       3/08  |                  | JW-29 FD       | 9/2/2009         |              |             |             |             |       |       |                          |
| Leon Springs Villas  |                  |                |                  |              |             |             |             |       |       | 1st PCE detection since  |
| LS-4   9/1/2009         0.96F   2.72   |                  | JW-30          | 9/1/2009         |              |             |             | 0.21F       |       |       | 3/08                     |
| LS-5   |                  | LS-1           | 9/1/2009         |              |             |             | 0.64F       | 0.18F |       |                          |
| LS-6   |                  | LS-4           | 9/1/2009         |              |             |             |             |       |       |                          |
| Villas   | I                | LS-5           | 8/31/2009        |              |             |             | 0.96F       | 2.72  |       |                          |
| LS-6-A2  |                  | LS-6           | 8/31/2009        |              |             |             | 0.99F       | 1.46  |       |                          |
| LS-7-A2   8/31/2009               Post-GAC sample  | vilias           | LS-6-A2        | 8/31/2009        |              |             |             |             |       |       | Post-GAC sample          |
| Old Fredricksburg Road OFR-3 8/31/2009 0.84F 0.91F concentrations PCE/TCE concentrations OFR-3-A2 8/31/2009 0.20F Post-GAC sample First detection in this well, sampling frequency will be increased to quarterly RFR-10 8/31/2009 5.24 1.21 Post-GAC sample RFR-10-B2 8/31/2009 5.24 1.21 Post-GAC sample RFR-10-B2 8/31/2009 0.39F 1.97 Post-GAC sample RFR-11 8/31/2009 0.39F 1.97 Post-GAC sample RFR-14 9/2/2009 0.28F Post-GAC sample RFR-14 9/2/2009 0.28F Post-GAC sample RFR-14 Method Detection Limit (MDL) 0.12 0.07 0.08 0.06 0.05 0.08  |                  | LS-7           | 8/31/2009        |              |             |             | 2.31        | 0.87F |       |                          |
| Significant reduction   PCE/TCE  |                  | LS-7-A2        | 8/31/2009        | -            | -           |             | -           |       |       | Post-GAC sample          |
| PCE/TCE  |                  | OFR-1          | 9/1/2009         |              |             |             | 0.25F       |       |       |                          |
| Note   | Old              |                |                  |              |             |             |             |       |       | significant reduction in |
| New Color   State    | Fredricksburg    |                |                  |              |             |             |             |       |       | PCE/TCE                  |
| RFR-9 9/4/2009 0.20F well, sampling frequency will be increased to quarterly stalph Fair Road  RFR-10 8/31/2009 5.24 1.21 increased to quarterly RFR-10-A2 8/31/2009 5.24 1.21 Post-GAC sample RFR-10-B2 8/31/2009 Post-GAC sample RFR-11 8/31/2009 0.39F 1.97 Post-GAC sample RFR-11-A2 8/31/2009 0.28F Post-GAC sample RFR-14 9/2/2009 0.28F   | Road             |                |                  |              |             |             |             | 0.91F |       |                          |
| RFR-9 9/4/2009 0.20F well, sampling frequency will be increased to quarterly stalph Fair Road  RFR-10 8/31/2009 5.24 1.21 Fost-GAC sample RFR-10-A2 8/31/2009 Post-GAC sample RFR-10-B2 8/31/2009 0.39F 1.97 Post-GAC sample RFR-11 8/31/2009 0.39F 1.97 Post-GAC sample RFR-11-A2 8/31/2009 0.28F Post-GAC sample RFR-14 9/2/2009 0.008 0.06 0.05 0.08  |                  | OFR-3-A2       | 8/31/2009        |              |             |             |             |       |       | Post-GAC sample          |
| RFR-9 FD 9/4/2009 Frequency will be increased to quarterly RFR-10 8/31/2009 5.24 1.21 Post-GAC sample RFR-10-A2 8/31/2009 Post-GAC sample RFR-10-B2 8/31/2009 0.39F 1.97 Post-GAC sample RFR-11 8/31/2009 0.39F 1.97 Post-GAC sample RFR-11-A2 8/31/2009 0.28F Post-GAC sample RFR-14 9/2/2009 0.28F 0.28F 0.28F Post-GAC sample RFR-14 9/2/2009 0.28F   |                  |                |                  |              |             |             |             |       |       | First detection in this  |
| RFR-9 FD 9/4/2009 increased to quarterly RFR-10 8/31/2009 5.24 1.21  RFR-10-A2 8/31/2009 Post-GAC sample RFR-10-B2 8/31/2009 Post-GAC sample RFR-11 8/31/2009 0.39F 1.97  RFR-11-A2 8/31/2009 0.39F 1.97  RFR-14 9/2/2009 0.28F Post-GAC sample  Laboratory Detection Limits & Maximum Contaminant Level  Method Detection Limit (MDL) 0.12 0.07 0.08 0.06 0.05 0.08   |                  | RFR-9          | 9/4/2009         |              |             |             | 0.20F       |       |       | well, sampling           |
| RFR-10 8/31/2009 5.24 1.21 Post-GAC sample  RFR-10-A2 8/31/2009 9.039F 1.97 Post-GAC sample  RFR-11 8/31/2009 0.39F 1.97 Post-GAC sample  RFR-11-A2 8/31/2009 0.28F Post-GAC sample  RFR-14 9/2/2009 0.28F Post-GAC sample  Laboratory Detection Limits & Maximum Contaminant Level  Method Detection Limit (MDL) 0.12 0.07 0.08 0.06 0.05 0.08  |                  |                |                  |              |             |             |             |       |       | frequency will be        |
| RFR-10-A2 8/31/2009 Post-GAC sample RFR-10-B2 8/31/2009 Post-GAC sample RFR-11 8/31/2009 0.39F 1.97 RFR-11-A2 8/31/2009 0.28F Post-GAC sample RFR-14 9/2/2009 0.28F  Laboratory Detection Limits & Maximum Contaminant Level Method Detection Limit (MDL) 0.12 0.07 0.08 0.06 0.05 0.08  |                  | RFR-9 FD       | 9/4/2009         |              |             |             |             |       |       | increased to quarterly.  |
| RFR-10-A2   8/31/2009             Post-GAC sample  | Dalph Fair Dood  | RFR-10         | 8/31/2009        |              |             |             | 5.24        | 1.21  |       | 1                        |
| RFR-11         8/31/2009            0.39F         1.97            RFR-11-A2         8/31/2009               Post-GAC sample           RFR-14         9/2/2009            0.28F             Laboratory Detection Limits & Maximum Contaminant Level           Method Detection Limit (MDL)         0.12         0.07         0.08         0.06         0.05         0.08  | Naipii Fair Noau | RFR-10-A2      | 8/31/2009        |              |             |             |             |       |       | Post-GAC sample          |
| RFR-11-A2       8/31/2009             Post-GAC sample         RFR-14       9/2/2009          0.28F           Laboratory Detection Limits & Maximum Contaminant Level         Method Detection Limit (MDL)       0.12       0.07       0.08       0.06       0.05       0.08  |                  | RFR-10-B2      | 8/31/2009        |              |             |             |             |       |       | Post-GAC sample          |
| RFR-14   9/2/2009       0.28F         Laboratory Detection Limits & Maximum Contaminant Level     Method Detection Limit (MDL)   0.12   0.07   0.08   0.06   0.05   0.08   |                  | RFR-11         | 8/31/2009        |              |             |             | 0.39F       | 1.97  |       |                          |
| Laboratory Detection Limits & Maximum Contaminant Level  Method Detection Limit (MDL) 0.12 0.07 0.08 0.06 0.05 0.08  |                  |                |                  |              |             |             |             |       |       | Post-GAC sample          |
| Method Detection Limit (MDL)         0.12         0.07         0.08         0.06         0.05         0.08   |                  | RFR-14         | 9/2/2009         |              |             |             | 0.28F       |       |       |                          |
|  |                  |                | Laboratory I     | Detection Li | nits & Maxi | imum Contai | ninant Leve | l     |       |                          |
| Reporting Limit (RL) 1.2 1.2 0.6 1.4 1 1.1   |                  | Method Detecti | on Limit (MDL)   | 0.12         | 0.07        | 0.08        | 0.06        | 0.05  | 0.08  |                          |
|  |                  | Repor          | rting Limit (RL) | 1.2          | 1.2         | 0.6         | 1.4         | 1     | 1.1   |                          |

| 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.

#### Abbreviations/Notes:

FD Field Duplicate TCE Trichloroethene Tetrachloroethene PCE DCE Dichloroethene

#### Data Qualifiers

--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.

#### 3.0 SUMMARY AND RECOMMENDATIONS

Results of the September 2009 sampling are summarized as follows:

- PCE exceeded the MCL in wells RFR-10 and I10-4 in September 2009. Well RFR-10 is equipped with a GAC treatment system. Well I10-4 is a privately owned well that is not currently being used. The pump has been removed and the well owner has been asked to contact Camp Stanley if the status of the well changes. The well has also been locked with a CSSA lock and signage has been added with CSSA contact information.
- PCE/TCE was detected above the RL in drinking water wells LS-5, LS-6, LS-7, and RFR-11. Three of these wells (LS-6, LS-7, RFR-11) have GAC treatment systems in place, and well LS-5 is monitored quarterly (and has never exceeded the MCL).
- Low levels (below the RL) of PCE/TCE were also detected in wells FO-J1, JW-7, JW-8, JW-30, LS-1, OFR-1, OFR-3, RFR-9, and RFR-14.
- 1,1-DCE, *cis*-1,2-DCE, *trans*-1,2-DCE, and vinyl chloride were not detected in any off-post wells in September 2009.
- Well RFR-9 had its first detection of PCE since sampling began in September 2001.
- No VOCs were detected in wells HS-1, HS-2, I10-7, I10-7 field duplicate, JW-14, JW-28, JW-29, JW-29 field duplicate, LS-4, and RFR-9 field duplicate.
- Post-GAC samples were collected in September 2009. All post-GAC samples were non-detect indicating the GAC units are functioning properly. The next post-GAC samples will be collected in March 2010.
- Semi-annual GAC maintenance was performed in May 2009; the next semi-annual GAC maintenance will be due in November 2009.
- In the event additional wells are located to the west and southwest of CSSA, they may be added to future sampling events.
- In accordance with project DQOs, the rationale for the selection of 26 wells to be sampled in December 2009 is provided in **Table 3-1**.

Table 3-1 Sampling Rationale for December 2009

|                 |      |   |             |      |         |          |       |     |          |     |         |         |          |     |       |         |          |           |     | Sa    | ımpııng  | Katioi |     |     | ber 200  | 19       |      |      |          |          |        |     |     |  |
|-----------------|------|---|-------------|------|---------|----------|-------|-----|----------|-----|---------|---------|----------|-----|-------|---------|----------|-----------|-----|-------|----------|--------|-----|-----|----------|----------|------|------|----------|----------|--------|-----|-----|--|
|                 | 2001 |   |             | 2002 |         |          |       | 03  |          |     |         | 004     |          |     |       | 005     |          |           |     | 2006  |          |        |     | 007 |          |          |      | 800  |          |          |        | 009 |     | Sampling   |
| Well ID         |      |   | Mar June    |      | •       | Mar      |       |     |          | Mar |         |         |          |     |       |         |          | _         |     |       |          | Mar    |     |     |          | Mar      |      |      |          |          |        |     |     | Frequency:   |
| DOM-2           | N    |   | NS          |      |         |          | NS    |     | NS       |     |         | NS      |          |     |       | NS      | NS       |           | NS  |       | NS       |        | NS  | NS  | NS       |          | NS   |      | NS       | NS       |        | NA  |     | main electricity has been disconnected                     |
| FO-8            | NS N | _ | NS          |      |         |          | NS    | NS  | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  |       | NS       |        | NS  | NS  | NS       |          | NS   | NS   | NS       |          | NS     |     |     | As needed, once annually                                   |
| FO-17           | NS N |   | NS<br>NG NG |      |         | NIC      | NS    | NS  | NS       | NS  |         | NS      | NS       |     |       | NS      | NS       |           |     | NS    | NS       |        | NIC | NS  | NS       | NS       | NG   | NS   | NS       | NS       | NG     | NS  |     | As needed, once annually                                   |
| FO-22           | N    | S | NS NS       | N    | IS      | NS       | NS    | NS  |          | NS  |         | NS      |          | NS  | NS    | NS      | NIC      |           | NS  | S NS  |          | NS     | NS  | NS  | NS       |          | NS   | NS   | NS       |          | NS     | NS  |     | As needed, once annually                                   |
| FO-J1           | NC N | C | NS NS       | N    | IC NIC  | NIC      | NC    | NIC | NIC      | NIC | NS      | NIC     | NIC      | NIC | NIC   | NIC     | NS<br>NS |           | NS  | ,     |          |        |     |     |          |          |      |      |          |          |        |     |     | Qtrly, 1 year thru Sept. 10<br>quarterly, due to location  |
| HS-1<br>HS-2    | NS N | 3 | No No       | IN   | 15 1/15 | NS       | IND   | IND | IND      | INS | IND     | NS      | INS      | IND | INS   | IND     | IND      | NS        | INS | ,     |          |        |     |     |          |          |      |      |          |          |        |     |     | Qtrly, 1 year thru June 10                                 |
| HS-3            | NS   |   | NS          | N    | IS NS   | NS       |       | NS  | NS       | NS  |         | NS      | NS       | NS  |       | NS      | NS       | NS        |     | NS    | NS       | NS     |     | NS  | NS       | NS       |      | NS   | NS       | NS       |        | NS  | NS  | As needed, once annually                                   |
| I10-2           | TUD  |   | 115         | .,   | 110     | 110      |       | 110 | 140      | 110 |         | 110     | 110      | 110 |       | 110     | 110      | 110       | NS  |       | NS       | 110    | NS  | NS  | NS       | 110      | NS   | NS   | NS       | 148      | NS     | NS  |     | As needed, once annually                                   |
| I10-4           | NS   | _ |             |      |         |          |       |     | NS       |     |         |         |          |     |       |         |          |           |     |       |          |        | NA  | NA  | NA       | NA       |      | NA   |          |          |        |     |     | Quarterly  |
| I10-5           | NS N | S | NS NS       | N    | IS      | NS       | NS    | NS  |          | NS  | NS      | NS      |          | NS  | NS    | NS      |          | NS        | NS  | S NS  |          | NS     | NS  | NS  | NS       | NS       | NS   | NS   | NS       |          | NS     | NS  | NS  | As needed, once annually                                   |
| I10-7           | NS N | S | NS          | N    | IS NS   |          |       | NS  | NS       | NS  |         | NS      |          |     |       |         |          |           |     |       |          |        |     |     |          |          |      |      |          |          |        |     | Yes | Qtrly, for delineation                                     |
| I10-8           | NS N | S | NS NS       | N    | IS NS   | NS       | NS    | NS  | NS       | NS  |         | NS      | NS       | NS  | NS    | NS      |          | NS        | NS  | NS NS |          | NS     | NS  | NS  |          | NS       | NS   | NS   |          | NS       | NS     | NS  | Yes | As needed, once annually                                   |
| JW-5            | NS N |   | NS NS       | N    |         | NS       | NS    | NS  | NS       | NS  | NS      |         | NS       | NS  |       |         |          |           | NS  | NS    | NS       |        |     |     |          |          |      |      |          |          | NS     |     |     | As needed, once annually                                   |
| JW-6            | N    |   | NS          | N    |         |          |       | NS  | NS       | NS  |         | NS      | NS       | NS  |       | NS      | NS       | NS        |     | NS    | NS       | NS     |     | NS  | NS       | NS       |      | NS   | NS       | NS       |        | NS  |     | As needed, once annually                                   |
| JW-7            | N    |   | NS NS       |      |         |          | NS    |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        |     |     |          |          |      |      |          |          |        |     |     | Qtrly, 1 year thru Sept. 10                                |
| JW-8            | NS N | S | NS NS       | N    | IS NS   | NS       |       |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        |     |     |          |          |      |      |          |          |        |     |     | Qtrly, 1 year thru Sept. 10                                |
| JW-9            |      |   |             |      |         |          |       |     |          |     |         |         |          |     | NS    |         |          |           | NS  |       | NS       |        | NS  | NS  | NS       |          | NS   | NS   | NS       |          | NS     |     |     | As needed, once annually                                   |
| JW-9-A2*        | NS N |   | NS NS       |      |         |          | NS    | NS  | NS       | NS  |         | NS      |          | NS  |       |         |          |           |     |       | NS       |        | NS  | NS  | NS       | NS       | NS   | NS   | NS       | NS       | NS     |     |     | As needed  |
| JW-12           | N    |   | NS NS       |      |         | NS       | NS    | NS  | NS       | NG  | NS      |         | NS       | NIC |       | NS      |          |           | NS  |       | NS       |        | NS  | NG  | NG       | NS       |      | NS   | NS       | NIC      |        | NA  |     | Access agreement expired, owner won't call back            |
| JW-13<br>JW-14  | N    | S | NS NS       | N    | IS      | NS       |       | NS  | NS       | NS  |         | NS      | NS       | NS  |       | NS      | NS       | NS<br>Tol |     | NS    | NS       | NS     |     | NS  | NS       | NS       |      | NS   | NS       | NS       |        | NS  |     | As needed, once annually  Otrly, due to location           |
| JW-14<br>JW-15  | NS N | C | NS NS       | N    | IS NS   | NS       | NS    | NS  | NS       | NS  | NS      | NS      | NS       | NS  |       |         |          | 101       | NS  | S NS  | NS       |        | NS  | NS  | NS       |          | NS   | NS   | NS       |          | NS     | NS  |     | As needed, once annually                                   |
| JW-26           | NS N |   | NS NS       |      | 10 100  | 143      | No    | 140 | 149      | IND | IND     | IND     | IND      | NS  | NS    | NS      |          | NS        |     |       | No       | NS     |     | NS  | NA       | NA       | NA   | 1    |          | NA       | NA     |     |     | Wellowner declined access.                                 |
| JW-27           | NS N | _ | NS NS       |      | IS NS   | NS       |       | NS  | NS       | NS  |         | NS      | NS       |     | 1,15  | NS      |          | 110       | 110 | 7 118 |          | 110    | 115 | 110 | NS       | 1111     | 1111 | 1111 | 1111     | 1111     |        | NS  |     | As needed, once annually                                   |
| JW-28           | NS N |   | NS NS       |      |         | NS       | NS    |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        |     | NS  | NS       | NS       |      |      |          |          |        |     |     | Qtrly, due to location                                     |
| JW-29           | NS N |   | NS NS       | _    |         | NS       |       |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        |     |     |          |          |      |      |          |          |        |     |     | Qtrly, due to location                                     |
| JW-30           | NS N | S | NS NS       | N    |         |          |       |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        |     |     |          |          |      |      |          |          |        |     |     | Qtrly, due to location                                     |
| LS-1            |      |   |             |      |         |          |       |     |          |     |         | NS      | NS       | NS  | NS    | NS      | NS       | NS        | NS  | S NS  | NS       | NS     | NS  | NS  | NS       | NS       |      |      |          |          |        |     | Yes | QED low flow pump installed                                |
| LS-2            |      |   |             |      |         |          |       |     |          |     |         |         |          |     |       |         | NS       |           |     | NS    | NS       | NS     | NS  | NS  | NS       | NS       | NS   | NS   | NS       | NS       | NS     | NS  | NS  | Well is offline, to be plugged soon                        |
| LS-2/LS-3-A1    | NS N | S | NS NS       |      | NS      |          | NS    |     | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  | S     | NS       |        | NS  | NA  | NA       | NA       | NA   | NA   | NA       | NA       | NA     |     |     | GAC unit removed   |
| LS-3            |      |   |             |      |         |          |       |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        | NS  | NS  | NS       | NS       | NS   | NS   | NS       | NS       | NS     | NS  |     | Well is offline, to be plugged soon                        |
| LS-2/LS-3-A2    | NS N | S | NS          |      | NS      |          | NS    |     | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  | 3     | NS       |        | NS  | NA  | NA       | NA       | NA   | NA   | NA       | NA       | NA     | NA  |     | GAC unit removed   |
| LS-4            |      | _ |             |      |         |          |       |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        | NS  | NS  | NS       | NS       |      |      |          |          |        |     |     | QED low flow pump installed                                |
| LS-5            |      | + |             | +    |         |          |       |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        |     |     |          |          |      |      |          |          |        |     | Yes | Qtrly, 1 year thru Sept. 10<br>Qtrly, 1 year thru Sept. 10 |
| LS-6<br>LS-6-A2 |      |   | NS          |      | NS      |          | NS    |     | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  | ,     | NS       |        | NS  |     | NS       |          | NS   |      | NS       |          | NS     |     |     | Biannually (Mar & Sept)                                    |
| LS-0-A2<br>LS-7 |      |   | NS          |      | No      |          | IND   |     | 149      |     | IND     |         | 149      |     | 140   |         | 149      |           | ING | ,     | 143      |        | IND |     | NS       |          | 140  |      | No       |          | 140    |     |     | Otrly, 1 year thru Sept. 10                                |
| LS-7-A2         |      |   | NS          |      | NS      |          | NS    |     | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  | ;     | NS       |        | NS  |     | NS       |          | NS   |      | NS       |          | NS     |     |     | Biannually (Mar & Sept)                                    |
| OFR-1           | NS   |   | 110         |      | 11,5    |          | 1,0   |     | 110      |     | 110     |         | 110      |     | 115   |         | 115      |           | 110 |       | 110      |        | 118 |     | 11.5     |          | 110  |      | 110      |          | 110    |     |     | Qtrly, 1 year thru Sept. 10                                |
| OFR-2           | NS N | S |             | +    |         |          |       |     |          |     |         |         |          |     |       |         |          |           | NA  | NA NA | NA       | NA     | NA  | NA  | NA       | NA       | NA   | NA   | NA       | NA       | NA     | NA  |     | Well was P&A by Centex                                     |
| OFR-3           |      |   |             |      |         |          |       |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        |     |     |          |          |      |      |          |          |        |     |     | Qtrly, 1 year thru Sept. 10                                |
| OFR-3-A2        | NS N |   | NS          |      | NS      |          | NS    |     | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  |       | NS       |        | NS  |     | NS       |          | NS   |      | NS       |          | NS     |     |     | Biannually (Mar & Sept)                                    |
| OFR-4           | NS N | S | NS NS       | N    | IS NS   | NS       |       |     | NS       |     | NS      | NS      | NS       |     | NS    | NS      | NS       |           | NS  | S NS  | NS       |        | NS  | NS  | NS       |          | NS   |      | NS       |          | NS     |     | NS  | As needed, once annually                                   |
| RFR-3           | NS N |   | NS NS       |      | IS NS   | NS       | NS    | NS  |          |     |         |         |          |     | NS    | NS      |          | NS        | NS  |       |          | NS     |     | NS  |          | NS       | NS   | NS   |          | NS       |        |     |     | As needed, once annually                                   |
| RFR-4           | NS N |   | NS NS       |      |         |          | NS    |     | NS       |     | NS      | NS      | NS       | Tol |       | NS      |          |           | NS  |       | NS       |        | NS  | NS  | NS       |          | NS   | NS   |          | NS       | NS     |     |     | As needed, once annually                                   |
| RFR-5           | NS N |   | NS NS       |      | IS NS   | NS       | NS    | NS  | NS       |     |         | NS      | NS       |     |       | NS      |          |           | NS  |       |          |        | NS  | NS  | NS       | 27.      | NS   | NS   | 3.7.1    | NS       |        |     |     | As needed, once annually                                   |
| RFR-6           | N    |   | NS NS       |      |         | NS       | NS    | NS  |          | NS  |         | NS      |          | NS  | NS    | NS      | NA       |           | NA  |       | NA       |        | NA  | NA  | NA       | NA       |      | NA   | NA       | NA       |        |     |     | Plugged & abandoned  |
| RFR-7           | N    |   | NS          | N    |         |          | NS    | NS  | NG       |     | NS      |         | NG       | NS  |       | NS      |          |           | NS  |       | NA       |        | NA  | NA  | NA       |          | NA   | NA   | NA       | NA       | NA     | NA  |     | Plugged & abandoned As needed, once annually               |
| RFR-8<br>RFR-9  | N    |   | NS<br>NS    | N    |         | NS<br>NS |       | NS  | NS<br>NS |     | NIC     | NS      | NS<br>NS | NS  | NS    |         | NS<br>NS |           | NS  | NS    | NS<br>NS | NS     | NS  | NS  | NS<br>NS | NS<br>NS | NS   | NS   | NS<br>NS | NS<br>NS | NS     | NS  |     | As needed, once annually Qtrly, 1 year thru Sept. 10       |
| RFR-10          |      |   | No          | IN   | 13 113  | No       |       |     | No       | INS | INS     |         | IND      | No  | INS   |         | No       | INS       | INS | ,     | No       | IND    | NS  |     | NS       | IND      | No   |      | NS       | INS      | No     |     |     | Qtrly, 1 year thru Sept. 10<br>Qtrly, 1 year thru Sept. 10 |
| RFR-10-A2       |      |   | NS          |      | NS      |          | NS    |     | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  |       | NS       |        | NS  |     | NS       |          | NS   |      | NS       |          | NS     |     |     | Biannually (Mar & Sept)                                    |
| RFR-10-B2       |      |   | NS          | N    | IS NS   | NS       |       |     | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  |       | NS       |        | NS  |     | NS       |          | NS   |      | NS       |          | NS     |     |     | Biannually (Mar & Sept)                                    |
| RFR-11          |      |   | 140         | 1    | 110     | 110      | .10   |     | 110      |     | 110     |         | 110      |     | 110   |         | 110      |           | .10 |       | 110      |        | 110 |     | 110      |          | 110  |      | 110      |          | 110    |     |     | Qtrly, 1 year thru Sept. 10                                |
| RFR-11-A2       |      |   | NS          |      | NS      |          | NS    |     | NS       |     | NS      |         | NS       |     | NS    |         | NS       |           | NS  | 3     | NS       |        | NS  |     | NS       |          | NS   |      | NS       |          | NS     |     |     | Biannually (Mar & Sept)                                    |
| RFR-12          |      |   | 1,0         |      | 1,5     |          | - 1.0 |     | - 15     |     | - 15    |         | - 1,5    |     | - 1.5 |         | 2.15     |           | NS  |       | NS       |        | NS  | NS  | NS       |          | NS   | NS   | NS       |          |        | NS  |     | As needed, once annually                                   |
| RFR-13          |      |   |             |      |         |          |       |     |          | ,   | Well In | stalled |          |     |       |         |          |           | 2.0 | NS    |          | NS     |     | NS  | NS       | NS       |      | NS   | NS       | NS       | 12     | NS  |     | As needed, once annually                                   |
| RFR-14          |      |   |             |      |         |          |       |     |          |     |         |         |          |     |       | Well Ir | ıstalle  | d         |     |       |          |        |     |     |          |          |      |      |          |          |        |     |     | Qtrly, 1 year thru Sept. 10                                |
|                 |      |   | •           |      | ,       |          |       |     | -        |     |         |         |          |     |       |         |          |           |     |       |          |        |     |     |          |          | -    |      |          | Total P  | re GAC | 2   |     | 26   |
|                 |      |   |             |      |         |          |       |     |          |     |         |         |          |     |       |         |          |           |     |       |          |        |     |     |          |          |      |      | Т        | otal Po  | st GAC | 7   |     | 0  |

7

Total Post GAC Total # of first time samples Total # of samples:

VOCs detected are greater than 90% of the MCL. Sample monthly; quarterly after GAC installation.

VOCs detected are greater than 80% of the MCL. The well will be placed on a monthly sampling schedule until GAC installation then quarterly sampling after GAC installation.

VOCs detected are less than 80% of the MCL (<4.0 ppb and >0.06 ppb for PCE & <4.0 ppb >0.05 ppb for TCE). After four quarters of stable results the well can be removed from quarterly sampling.

This well has a GAC filtration unit installed by CSSA. Post GAC samples are collected every six

A1 - after GAC canister #1 A2 - after GAC canister #2 \*JW-9-A2 is the well owner's system, not a CSSA GAC.

Yes To be sampled in September 2009.

FT

First event for sampling by CSSA.

NS Not sampled for that event.

No VOCs detected. Sample on an as needed basis.

NA Not applicable, samples can no longer be collected from this locaiton due to reason stated.

J:\745\745953 CSSA DY02\01000 GWM\Off-Post\Sept 08 Event

## APPENDIX A EVALUATION OF DATA QUALITY OBJECTIVES ATTAINMENT

Appendix A Evaluation of Data Quality Objectives Attainment

| Activity  | Objectives  | Action  | <b>Objective Attained?</b> | Recommendations  |
|---|---|---|----------------------------|--|
| Field Sampling  | Conduct field sampling in accordance with procedures defined in the project work plan, SAP, QAPP, and HSP.  | accordance with the procedures  | Yes                        | NA   |
| Contamination<br>Characterization<br>(Groundwater<br>Contamination) | Determine the potential extent of off-post contamination (§2.3.1 of the DQOs for the Groundwater Contamination Investigation, revised November 2003). | Samples for laboratory analysis were collected from selected off-post public and private wells, which are located within a ½ mile radius of CSSA. | Partially                  | Replace wells where no VOCs were detected with wells that may be identified in the future, located to the west and southwest of AOC-65 to provide better definition of plume 2. Continue sampling of wells to the west of plume 1 (Fair Oaks and Jackson Woods) to confirm any detections possibly related to plume 1. |
|   | Meet CSSA QAPP quality assurance  | Samples were analyzed in accordance with the CSSA QAPP, and approved variances. A chemist verified all data.                                      | Yes                        | NA   |
|   | requirements.   | All data flagged with a "U" and "J" are usable for characterizing contamination.  | Yes                        | NA   |

| Activity                          | Objectives  | Action  | Objective Attained? | Recommendations   |
|-----------------------------------|---|---|---------------------|---|
|                                   | Evaluate CSSA monitoring program and expand as necessary (§2.3.1 of the DQOs for the Groundwater Contamination Investigation, revised November 2003). Determine locations of future monitoring locations. | Evaluation of data collected is ongoing and is reported in this quarterly groundwater report and will be reported in future quarterly groundwater reports. Additional information covering the CSSA monitoring program is available in Volume 5, CSSA Environmental Encyclopedia. | Yes                 | Continue data evaluation and quarterly teleconferences for evaluation of the monitoring program. Each teleconference/planning session covers expansion of the quarterly monitoring program, if necessary. |
| Project<br>schedule/<br>Reporting | The quarterly monitoring project schedule shall provide a schedule for sampling, analysis, validation, verification, reviews, and reports for monitoring events off-post.                                 | validation, verification and data review, and reports is provided in this quarterly groundwater report and will be reported in future quarterly groundwater reports. Additional information covering the CSSA monitoring program is available in                                  | Yes                 | Continue quarterly reporting to include a schedule for sampling, analysis, validation, and verification and data review and data reports.   |

| Activity    | Objectives  | Action   | <b>Objective Attained?</b> | Recommendations   |
|-------------|---|--|----------------------------|---|
| Remediation | Evaluate the effectiveness of GACs (§3.2.3) and install as needed (§3.2.5 both of the DQOs for the Groundwater Contamination Investigation, revised November 2003). | Perform maintenance as needed. Install new GACs as needed. | Yes                        | Maintenance to the off-post GAC systems to be continued by Parsons' personnel every 3 weeks. Twice yearly (or as needed) maintenance to the off-post GAC systems by additional subcontractors to continue. Evaluations of future sampling results for installation of new GAC systems will occur as needed. |

#### APPENDIX B SEPTEMBER 2009 QUARTERLY OFF-POST GROUNDWATER ANALYTICAL RESULTS

## Appendix B September 2009 Quarterly Off-post Groundwater Analytical Results

|           |             |         | cis-1,2- | trans-1,2- |       |       | Vinyl    |
|-----------|-------------|---------|----------|------------|-------|-------|----------|
| Well ID   | Sample Date | 1,1-DCE | DCE      | DCE        | PCE   | TCE   | Chloride |
| FO-J1     | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 0.43F | 0.05U | 0.08U    |
| HS-1      | 9/2/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| HS-2      | 9/2/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| I10-4     | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 6.9   | 2.47  | 0.08U    |
| I10-7     | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| I10-7 FD  | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| JW-7      | 9/15/2009   | 0.12U   | 0.07U    | 0.08U      | 0.66F | 0.05U | 0.08U    |
| JW-8      | 9/4/2009    | 0.12U   | 0.07U    | 0.08U      | 0.48F | 0.05U | 0.08U    |
| JW-14     | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| JW-28     | 9/2/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| JW-29     | 9/2/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| JW-29 FD  | 9/2/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| JW-30     | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 0.21F | 0.05U | 0.08U    |
| LS-1      | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 0.64F | 0.18F | 0.08U    |
| LS-4      | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| LS-5      | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.96F | 2.72  | 0.08U    |
| LS-6      | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.99F | 1.46  | 0.08U    |
| LS-6-A2   | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| LS-7      | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 2.31  | 0.87F | 0.08U    |
| LS-7-A2   | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| OFR-1     | 9/1/2009    | 0.12U   | 0.07U    | 0.08U      | 0.25F | 0.05U | 0.08U    |
| OFR-3     | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.84F | 0.91F | 0.08U    |
| OFR-3-A2  | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| RFR-9     | 9/4/2009    | 0.12U   | 0.07U    | 0.08U      | 0.20F | 0.05U | 0.08U    |
| RFR-9 FD  | 9/4/2009    | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| RFR-10    | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 5.24  | 1.21  | 0.08U    |
| RFR-10-A2 | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| RFR-10-B2 | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| RFR-11    | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.39F | 1.97  | 0.08U    |
| RFR-11-A2 | 8/31/2009   | 0.12U   | 0.07U    | 0.08U      | 0.06U | 0.05U | 0.08U    |
| RFR-14    | 9/2/2009    | 0.12U   | 0.07U    | 0.08U      | 0.28F | 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.

#### 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.