

September 2018

Off-Post

Quarterly Groundwater Monitoring Report



Prepared For

**Department of the Army
Camp Stanley Storage Activity
Boerne, Texas**

November 2018

EXECUTIVE SUMMARY

- A total of 10 off-post wells and 7 Granular Activated Carbon (GAC) filtered samples were collected during the September 2018 sampling event for volatile organic compound (VOC) analyses.
- Analyses indicated no off-post wells exceeded the maximum contaminant level (MCL) for volatile organic compounds (VOCs).
- Well I10-2 was eligible to be excluded from the sampling program in June 2018 due to 5 years of no detections. However, the well has been inoperable since December 2015. CSSA will attempt to collect one final sample prior to excluding it from the program.
- GAC-filtered samples were collected in September 2018 as part of the groundwater monitoring program. All GAC filtered samples were non detect, indicating the GAC systems are functioning properly. GAC filtered samples are collected semi-annually and will be collected again in March 2019.
- Semi-annual GAC maintenance was performed September 12, 2018. This involved replacing the first carbon canister in each GAC system and other routine maintenance. This carbon exchange is performed semi-annually; the next carbon change-out is due in March 2019.

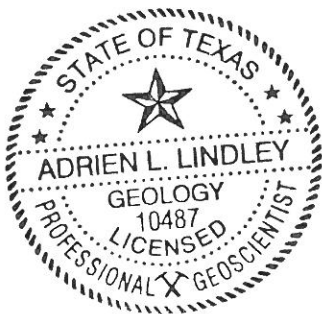
GEOSCIENTIST CERTIFICATION


September 2018 Off-Post Quarterly Groundwater Monitoring Report

For

Department of the Army
Camp Stanley Storage Activity
Boerne, Texas

I, Adrien Lindley, Professional Geologist (P.G.), hereby certify that the 2018 September 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 Camp Stanley Storage Activity Environmental Office, laboratory data provided by APPL, and field data obtained during groundwater monitoring conducted at the site in September 2018, and is true and accurate to the best of my knowledge and belief.




Adrien Lindley, P.G.
State of Texas
Geology License No. 10487

11-14-18
Date

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ABBREVIATIONS AND ACRONYMS

| | |
|---------------------|--|
| µg/L | microgram per liter |
| AOC | Area of Concern |
| APPL | Agriculture and Priority Pollutants Laboratories, Inc. |
| <i>cis</i> -1,2-DCE | <i>cis</i> -1,2-Dichloroethene |
| CSSA | Camp Stanley Storage Activity |
| DQO | Data Quality Objective |
| FD | Field Duplicate |
| FO | Fair Oaks Ranch |
| GAC | Granular Activated Carbon |
| HASP | Health and Safety Plan |
| JW | Jackson Woods |
| LS | Leon Springs |
| LTMO | Long Term Monitoring Optimization |
| MCL | Maximum Contaminant Level |
| MDL | Method Detection Limit |
| MS/MSD | Matrix Spike/Matrix Spike Duplicate |
| NA | Not Applicable |
| OFR | Old Fredericksburg Road |
| OW | Oaks Water Supply Corporation |
| Parsons | Parsons Government Services, Inc. |
| PCE | Tetrachloroethene |
| P.G. | Professional Geologist |
| Plan | Off-Post Monitoring Program and Response Plan |
| QAPP | Quality Assurance Project Plan |
| QA/QC | Quality Assurance/Quality Control |
| RFR | Ralph Fair Road |
| RL | Reporting Limit |
| SAP | Sampling and Analysis Plan |
| SLD | Scenic Loop Drive |
| TCE | Trichloroethene |
| TCEQ | Texas Commission on Environmental Quality |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile Organic Compound |

**SEPTEMBER 2018
OFF-POST GROUNDWATER MONITORING REPORT
CAMP STANLEY STORAGE ACTIVITY**

1.0 INTRODUCTION

This report presents results from the off-post quarterly sampling performed for Camp Stanley Storage Activity (CSSA) in September 2018 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 2018 quarterly monitoring events (March, June, September, and December) will be described in detail in an Annual Report to be submitted after December 2018. 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 was performed September 10 through 13, 2018. 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 described in the Plan.

The CSSA groundwater monitoring program also follows the provisions of the groundwater monitoring program data quality objectives (DQOs) as well as the recommendations of all applicable project-specific work plans. **Appendix A** provides an evaluation of the DQO attainment for this sampling event. Approval for the updated DQOs and the long term monitoring optimization (LTMO) was received from the Texas Commission on Environmental Quality (TCEQ) on April 22, 2016 and the United States Environmental Protection Agency (USEPA) on May, 5, 2016. The sampling schedule provided in the 2015 LTMO update was implemented during the December 2016 sampling event.

The primary objective of the off-post groundwater monitoring program is to determine 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 2018 ANALYTICAL RESULTS

During the September 2018 event, groundwater samples were collected from 10 off-post wells shown in **Figure 2.1**. Well I10-2 was not sampled due to a pump outage. Seven granular activated carbon (GAC) filtered samples (LS-5-A2, LS-6-A2, LS-7-A2, OFR-3-A2, RFR-10-A2, RFR-10-B2, and RFR-11-A2) are collected semi-annually (March and September), and were collected during this event.

Table 2.1 includes the rationale for selection of the 10 wells scheduled to be sampled in September 2018. These included:

- Two wells used by the general public in the Interstate Highway 10 (I10) area (I10-10 and I10-2);
- One privately owned well in the Jackson Woods Subdivision (JW-20);
- Three privately owned wells in the Leon Springs Villa area (LS-5, LS-6, and LS-7);
- One privately-owned well on Old Fredericksburg Road (OFR-3);
- Two privately-owned wells (RFR-10 and RFR-11) and one public well (RFR-12) in the Ralph Fair Road area.

A total of 16 groundwater samples, two trip blanks, two field duplicates (FD), and one matrix spike/matrix spike duplicate (MS/MSD) included with the on-post data groups were submitted to Agriculture & Priority Pollutant Laboratories, Inc. (APPL) in Clovis, 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), tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride.

The data package (Parsons Government Services, Inc. [Parsons] internal reference 110093-#16 and -#23) contains the analytical results for this sampling event and are presented in **Appendix C**. Laboratory results were reviewed and verified according to the guidelines outlined in the CSSA Quality Assurance Project Plan (QAPP), Version 1.0. Parsons received these data packages from September 21 – October 5, 2018.

All active wells with submersible pumps 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.

Concentrations of the VOCs detected in September 2018 are presented in **Table 2.2**. Full analytical results from the September 2018 sampling event are presented in **Appendix B**. As shown in **Table 2.1**, 16 of 17 samples that were scheduled for collection in September 2018 were obtained. Well I10-2 was not sampled due to pump outage.

Table 3-1
Sampling Rationale for September 2018

| Well ID | 2001 | | 2002 | | | | 2003 | | | | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | |
|-----------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|--|--|--|
| | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | | | | |
| FO-J1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I10-2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I10-8 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | | | | |
| I10-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JW-7 | | NS | NS | NS | NS | NS | NS | NS | NS | | | | | | | | | | | | | | | | | | | | | | | | | |
| JW-8 | NS | NS | NS | NS | NS | NS | NS | NS | NS | | | | | | | | | | | | | | | | | | | | | | | | | |
| JW-20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-5-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-6-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-7-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OFR-3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OFR-3-A2 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | | | | |
| RFR-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-10-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-10-B2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-11-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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.

No VOCs detected. Sample on an as needed basis.

This well has a GAC filtration unit installed by CSSA. Post GAC samples are collected every six months.
A1 - after GAC canister #1
A2 - after GAC canister #2

Yes
To be sampled in Sept. 2018.

NS
Not sampled for that event.

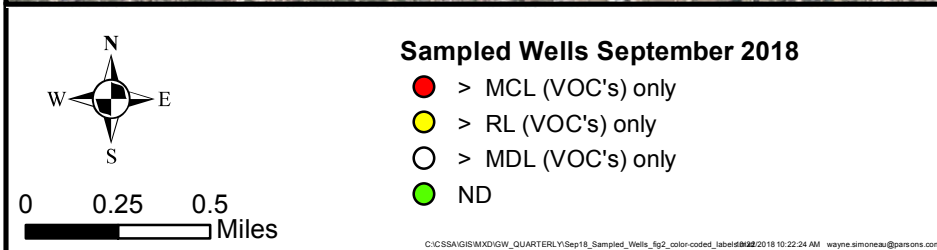
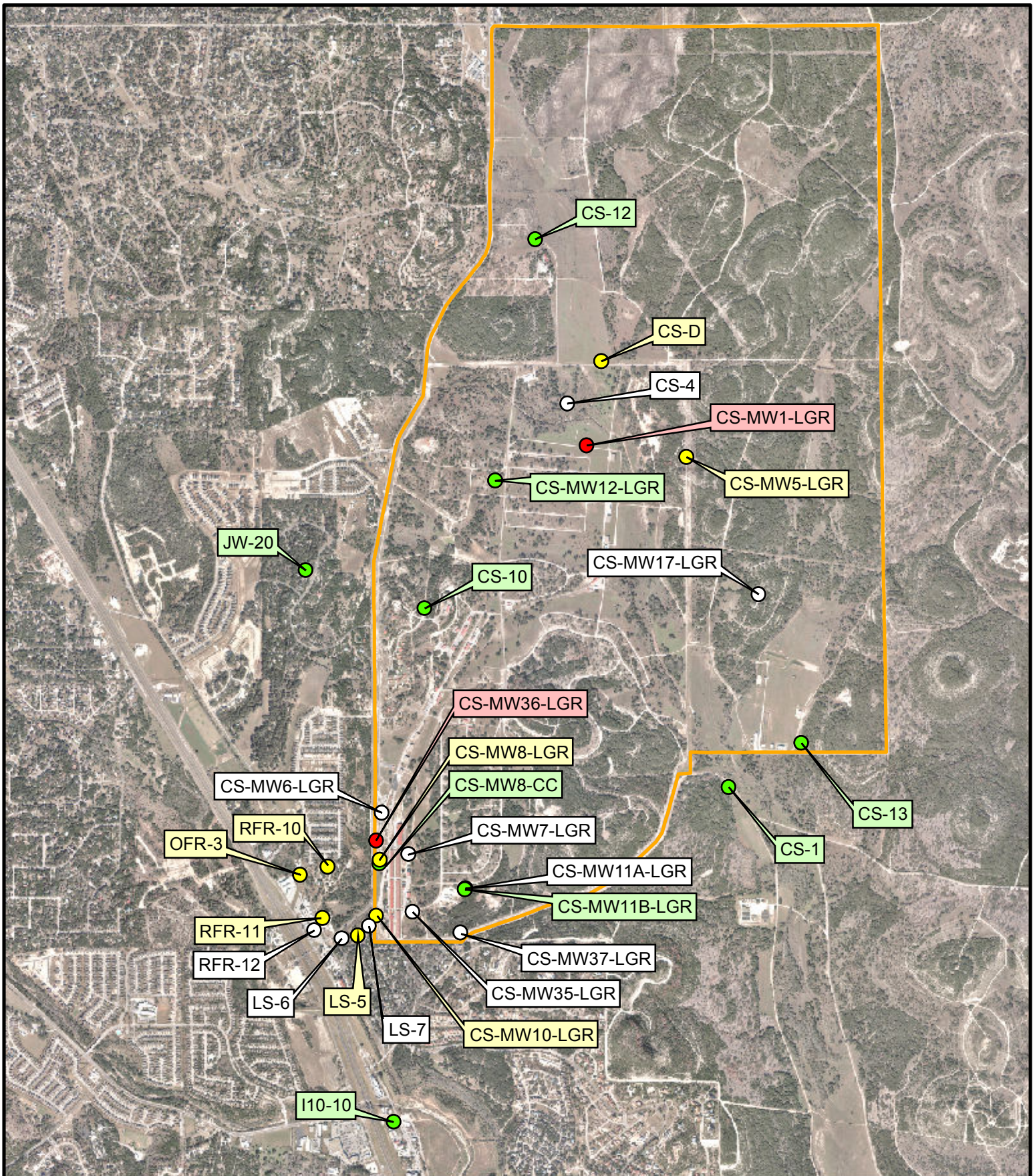
NA
Not applicable, sample could not be collected due to pump outage or well access conflict.

| Well ID | 2010 | | | | 2011 | | | | 2012 | | | | 2013 | | | | 2014 | | | | 2015 | | | | 2016 | | | | 2017 | | | | 2018 | | | Sampling Frequency |
|-----------|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|----------|---------------------------------|------|--|--|--------------------|
| | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | Dec | Mar | June | Sept | | | | | |
| FO-J1 | | | | | | | | NS | NS | NA | NS | NS | NA | NS | NS | | | | | | | | | | | | | | | | 30 month | | | | | |
| I10-2 | | | | NA | NS | | NS | NS | | | | | NS | NS | | | | | | | | | | | | | | | | | Yes | exclude after June-18; pump out | | | | |
| I10-8 | | | | | | | NS | NS | | | | | NS | NS | | | | | | | | | | | | | | | | | NS | 30 month | | | | |
| I10-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | 15 month | | | | |
| JW-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NS | 30 month | | | | |
| JW-8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NS | 30 month | | | | |
| JW-20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | exclude after Mar-19 | | | | |
| LS-5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly | | | | |
| LS-5-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Biannually (Mar & Sept) | | | | |
| LS-6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly | | | | |
| LS-6-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Biannually (Mar & Sept) | | | | |
| LS-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly | | | | |
| LS-7-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Biannually (Mar & Sept) | | | | |
| OFR-3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly | | | | |
| OFR-3-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Biannually (Mar & Sept) | | | | |
| RFR-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly | | | | |
| RFR-10-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Biannually (Mar & Sept) | | | | |
| RFR-10-B2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Biannually (Mar & Sept) | | | | |
| RFR-11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly | | | | |
| RFR-11-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Biannually (Mar & Sept) | | | | |
| RFR-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | 15 month | | | | |
| RFR-14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NS | 30 month | | | | |

Wells Sampled: 10
Post GAC Samples: 7
Total Samples: 17

LTMO has excluded the following wells from the program:
-Dec. 2015: BSR-03, FO-8, FO-17, FO-22, HS-2, HS-3, I10-5, I10-7, JW-6, JW-9, JW-12, JW-13, JW-14, JW-15, JW-26, JW-27, JW-28, JW-29, JW-30, JW-31, OW-HH1, OW-CE1, OW-MT2, OW-DAIRYWELL, OW-HH3, RFR-3, RFR-4, RFR-5, RFR-8, RFR-9, RFR-13, SLD-01, and SLD-02. OW-HH3, RFR-3, RFR-4, RFR-5, RFR-8, RFR-9, RFR-13, SLD-01, and SLD-02.
-Sept. 2016: JW-5, OW-HH2, and OW-BARNOWL.
-Sept. 2017: BSR-04 and HS-1.

The following wells have been plugged and abandoned: I10-4, I10-9, LS-1, LS-4, OFR-1, and OFR-4.



Sampled Wells September 2018

- > MCL (VOC's) only
- > RL (VOC's) only
- > MDL (VOC's) only
- ND

Figure 2-1
 On-Post and Off-Post Well Sampling
 Locations for September 2018
 Camp Stanley Storage Activity

PARSONS

Table 2.2
September 2018 Off-Post Groundwater Results, Detected Analytes Only

| Subdivision | Well ID | Sample Date | cis-1,2-DCE | PCE | TCE | Vinyl Chloride |
|--|-----------|-------------|-------------|--------------|--------------|----------------|
| IH10 Area | I10-10 | 9/10/2018 | -- | -- | -- | -- |
| Jackson Woods Subdivision | JW-20 | 9/12/2018 | -- | -- | -- | -- |
| Leon Springs Villas | LS-5 | 9/13/2018 | -- | 0.79F | 2.59 | -- |
| | LS-5-A2 | 9/13/2018 | -- | -- | -- | -- |
| | LS-6 | 9/13/2018 | -- | 0.66F | -- | -- |
| | LS-6-A2 | 9/13/2018 | -- | -- | -- | -- |
| | LS-7 | 9/13/2018 | -- | 1.04F | -- | -- |
| | LS-7-A2 | 9/13/2018 | -- | -- | -- | -- |
| Old Fredericksburg Road | OFR-3 | 9/13/2018 | -- | 2.30 | 1.72 | -- |
| | OFR-3 FD | 9/13/2018 | -- | 2.32 | 1.72 | -- |
| | OFR-3-A2 | 9/13/2018 | -- | -- | -- | -- |
| Ralph Fair Road | RFR-10 | 9/13/2018 | -- | 4.45 | 2.6 | -- |
| | RFR-10 FD | 9/13/2018 | -- | 4.52 | 2.73 | -- |
| | RFR-10-A2 | 9/13/2018 | -- | -- | -- | -- |
| | RFR-10-B2 | 9/13/2018 | -- | -- | -- | -- |
| | RFR-11 | 9/13/2018 | -- | 3.06 | -- | -- |
| | RFR-11-A2 | 9/13/2018 | -- | -- | -- | -- |
| | RFR-12 | 9/10/2018 | -- | 0.22F | 0.82F | -- |
| Laboratory Detection Limits & Maximum Contaminant Level | | | | | | |
| Method Detection Limit (MDL) | | | 0.07 | 0.06 | 0.05 | 0.08 |
| Reporting Limit (RL) | | | 1.2 | 1.4 | 1 | 1.1 |
| Max. Contaminant Level (MCL) | | | 70 | 5 | 5 | 2 |

| | |
|-------------|-------|
| BOLD | ≥ MDL |
| BOLD | ≥ RL |
| BOLD | ≥ MCL |

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

No wells exceeded the Maximum Contaminant Level (MCL) of 5 micrograms per liter ($\mu\text{g/L}$) in September 2018 for PCE and/or TCE. PCE and/or TCE was detected above the Reporting Limits (RLs) in private drinking water wells LS-5, OFR-3, RFR-10, and RFR-11. These wells are equipped with GAC filtration systems. Vinyl chloride and *cis*-1,2-DCE were not detected in any of the off-post wells sampled in September 2018.

On September 12, 2018, routine semi-annual maintenance was performed on the GAC treatment systems at LS-5, LS-6, LS-7, OFR-3, RFR-10, and RFR-11. Carbon canisters were exchanged and other routine maintenance was performed. GAC-filtered samples were collected this quarter as part of the groundwater project. All GAC-filtered samples were non-detect indicating the GAC systems are functioning properly. GAC-filtered samples will be collected again during the March 2019 event.

Based on historical detections, the lateral extent of VOC detections extends beyond the south and west boundaries of CSSA. Past detections of VOCs have extended 0.37 miles south to well LS-4 and 2.9 miles west towards Scenic Loop Drive (SLD) at well SLD-01. Detections above the RL ($1.4 \mu\text{g/L}$) and MCL ($5 \mu\text{g/L}$) however, are confined to within 0.5 miles of the southwest corner of CSSA. VOC detections beyond that distance range between 1% and 28% of the regulatory MCL thresholds of $5 \mu\text{g/L}$ for PCE and TCE and are therefore considered trace detections. The CSSA action levels that trigger the requirement for installation of wellhead protection on water supply wells for both PCE and TCE are 80% of the MCL ($4 \mu\text{g/L}$), and the furthest historical detection exceeding the action level is 0.43 miles from the southwest corner of the post (and 0.32 miles to the closest point along the CSSA boundary).

3.0 SUMMARY AND RECOMMENDATIONS

Results of the September 2018 sampling event are summarized as follows:

- Sixteen of 17 samples scheduled for collection in September 2018 were obtained during the quarterly monitoring event. Well I10-2 was not sampled due to a pump outage.
- No wells exceeded the MCL for PCE or TCE in September 2018.
- TCE and/or PCE was detected above the RL in private drinking water wells LS-5, OFR-3, RFR-10, and RFR-11. These wells have GAC filtration systems in place.
- Vinyl chloride and cis-1,2-DCE were not detected in any of the off-post wells sampled in September 2018.
- GAC-filtered samples were collected as part of the quarterly groundwater monitoring in September 2018. These samples were non-detect indicating the GAC systems are functioning properly. GAC-filtered samples are collected semi annually, every March and September. The next GAC-filtered samples will be collected in March 2019.
- Semi-annual GAC maintenance, including carbon change-out, was performed September 12, 2018. The next semi-annual GAC maintenance is due in March 2019.
- Well I10-2 has not been sampled since December 2015 due to a pump outage. In accordance with the 2015 LTMO study this well can be excluded from the sampling program based on 5 years of no detections in June 2018. With no samples being collected for the last 3 years CSSA will continue to attempt to collect one final sample before excluding the well from the program.
- In accordance with project DQOs and LTMO schedule, the rationale for selection of 7 samples to be collected in December 2018 is provided in **Table 3.1**.

Table 3-1
Sampling Rationale for December 2018

| Well ID | 2001 | | 2002 | | | | 2003 | | | | 2004 | | | | 2005 | | | | 2006 | | | | 2007 | | | | 2008 | | | | 2009 | | | | | |
|-----------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|--|--|
| | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | | |
| FO-J1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I10-2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I10-8 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | | |
| I10-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JW-7 | | NS | NS | NS | NS | NS | NS | NS | NS | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JW-8 | NS | NS | NS | NS | NS | NS | NS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JW-20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-5-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-6-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | |
| LS-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS-7-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | |
| OFR-3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OFR-3-A2 | NS | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | |
| RFR-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-10-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | |
| RFR-10-B2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | |
| RFR-11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-11-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | |
| RFR-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RFR-14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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.

No VOCs detected. Sample on an as needed basis.

This well has a GAC filtration unit installed by CSSA. Post GAC samples are collected every six months. A1 - after GAC canister #1 A2 - after GAC canister #2

| Well ID | 2010 | | | | 2011 | | | | 2012 | | | | 2013 | | | | 2014 | | | | 2015 | | | | 2016 | | | | 2017 | | | | 2018 | | | | Sampling Frequency | |
|-----------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|---------------------------------|---------------------------|-------------------------|
| | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | Mar | Jun | Sept | Dec | | |
| FO-J1 | | | | | | | NS | NS | NA | NS | NS | NA | NS | NS | | NS | NS | NS | NS | | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | 30 month | | |
| I10-2 | | | | NA | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | NA | NS | NS | NS | NS | NS | NS | NS | NS | exclude after June-18; pump out | | |
| I10-8 | | | | | | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | NS | NS | NS | 30 month | | |
| I10-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | access agreement received | 15 month |
| JW-7 | | | | | | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | NS | NS | NS | 30 month | | |
| JW-8 | | | | | | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | | NS | NS | NS | NS | NS | 30 month | | |
| JW-20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | access agreement received | exclude after Mar-19 |
| LS-5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly |
| LS-5-A2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NS | Biannually (Mar & Sept) |
| LS-6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly |
| LS-6-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | Biannually (Mar & Sept) | |
| LS-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly |
| LS-7-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | Biannually (Mar & Sept) | |
| OFR-3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly |
| OFR-3-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | Biannually (Mar & Sept) | |
| RFR-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly |
| RFR-10-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | Biannually (Mar & Sept) | |
| RFR-10-B2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | Biannually (Mar & Sept) | |
| RFR-11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Yes | Quarterly |
| RFR-11-A2 | | | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | | NS | Biannually (Mar & Sept) | |
| RFR-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NS | 15 month |
| RFR-14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | NS | 30 month |

Yes
To be sampled in Dec. 2018.

NS
Not sampled for that event.

NA
Not applicable, sample could not be collected due to pump outage or well access conflict.

Wells Sampled: 7
Post GAC samples: 0
Total Samples: 7

LTMO has excluded the following wells from the program:
-Dec. 2015: BSR-03, FO-8, FO-17, FO-22, HS-2, HS-3, I10-5, I10-7, JW-6, JW-9, JW-12, JW-13, JW-14, JW-15, JW-26, JW-27, JW-28, JW-29, JW-30, JW-31, OW-HH1, OW-CE1, OW-MT2, OW-DAIRYWELL, OW-HH3, RFR-3, RFR-4, RFR-5, RFR-8, RFR-9, RFR-13, SLD-01, and SLD-02. OW-HH3, RFR-3, RFR-4, RFR-5, RFR-8, RFR-9, RFR-13, SLD-01, and SLD-02.
-Sept. 2016: JW-5, OW-HH2, and OW-BARNOWL.
-Sept. 2017: BSR-04 and HS-1.

The following wells have been plugged and abandoned: I10-4, I10-9, LS-1, LS-4, OFR-1, and OFR-4.

**APPENDIX A
EVALUATION OF DATA QUALITY OBJECTIVES ATTAINMENT**

| Activity | Objectives | Action | Objective Attained? | Recommendations |
|--|---|---|----------------------------|--|
| Field Sampling | Conduct field sampling in accordance with procedures defined in the project work plan, SAP, QAPP, and HASP. | All sampling was conducted in accordance with the procedures described in the project plans. | Yes | NA |
| Contamination Characterization (Groundwater Contamination) | Determine the potential extent of off-post contamination (§2.1 of the DQOs for the Groundwater Contamination Investigation, revised February 2016). | Samples for laboratory analysis were collected from selected off-post public and private wells, which are located within a 3 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 Area of Concern (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 requirements. | Samples were analyzed in accordance with the CSSA QAPP, and approved variances. A chemist verified all data. | Yes | NA |
| | | All data flagged with a “U” and “J” are usable for characterizing contamination. | Yes | NA |

| Activity | Objectives | Action | Objective Attained? | Recommendations |
|--|--|---|---------------------|--|
| | <p>Evaluate CSSA monitoring program and expand as necessary (§2.1 of the DQOs for the Groundwater Contamination Investigation, revised February 2016). Determine locations of future monitoring locations.</p> | <p>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.</p> | <p>Yes</p> | <p>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.</p> |
| <p>Project Schedule/ Reporting</p> | <p>The quarterly monitoring project schedule shall provide a schedule for sampling, analysis, validation, verification, reviews, and reports for monitoring events off-post.</p> | <p>A schedule for sampling, analysis, 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 Volume 5, CSSA Environmental Encyclopedia.</p> | <p>Yes</p> | <p>Continue quarterly reporting to include a schedule for sampling, analysis, validation, and verification and data review and data reports.</p> |

| Activity | Objectives | Action | Objective Attained? | Recommendations |
|-------------|--|--|---------------------|---|
| Remediation | Evaluate the effectiveness of GACs and install as needed (§3.2 both of the DQOs for the Groundwater Contamination Investigation, revised February 2016). | 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 2018 QUARTERLY OFF-POST
GROUNDWATER ANALYTICAL RESULTS

Appendix B
September 2018 Quarterly Off-post Groundwater Analytical Results

| Well ID | Sample Date | cis-1,2-DCE | PCE | TCE | Vinyl Chloride |
|-----------|-------------|-------------|--------------|--------------|----------------|
| I10-10 | 9/10/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| JW-20 | 9/12/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| LS-5 | 9/13/2018 | 0.07U | 0.79F | 2.59 | 0.08U |
| LS-5-A2 | 9/13/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| LS-6 | 9/13/2018 | 0.07U | 0.66F | 0.05U | 0.08U |
| LS-6-A2 | 9/13/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| LS-7 | 9/13/2018 | 0.07U | 1.04F | 0.05U | 0.08U |
| LS-7-A2 | 9/13/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| OFR-3 | 9/13/2018 | 0.07U | 2.30 | 1.72 | 0.08U |
| OFR-3 FD | 9/13/2018 | 0.07U | 2.32 | 1.72 | 0.08U |
| OFR-3-A2 | 9/13/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| RFR-10 | 9/13/2018 | 0.07U | 4.45 | 2.6 | 0.08U |
| RFR-10 FD | 9/13/2018 | 0.07U | 4.52 | 2.73 | 0.08U |
| RFR-10-A2 | 9/13/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| RFR-10-B2 | 9/13/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| RFR-11 | 9/13/2018 | 0.07U | 3.06 | 0.05U | 0.08U |
| RFR-11-A2 | 9/13/2018 | 0.07U | 0.06U | 0.05U | 0.08U |
| RFR-12 | 9/10/2018 | 0.07U | 0.22F | 0.82F | 0.08U |

| | |
|-------------|-------|
| BOLD | ≥ MDL |
| BOLD | ≥ RL |
| BOLD | ≥ MCL |

All samples were analyzed by APPL, Inc.

VOC data reported in ug/L.

Abbreviations/Notes:

TCE Trichloroethene
PCE Tetrachloroethene
DCE Dichloroethene
FD Field Duplicate

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.

**APPENDIX C
DATA VALIDATION REPORTS**

**SDG 86883
SDG 86882**

DATA VERIFICATION SUMMARY REPORT
for groundwater samples collected from
CAMP STANLEY STORAGE ACTIVITY

BOERNE, TEXAS

Data Verification by: Sandra de las Fuentes
 Parsons - Austin

INTRODUCTION

The following data verification summary report covers four water samples and the associated field quality control (QC) samples collected from Camp Stanley Storage Activity (CSSA) on June 12 and 13, 2018. The samples were assigned to the following Sample Delivery Group (SDG).

86882

The samples were analyzed for the following parameters: volatile organic compounds by SW8260B. The field QC samples associated with this SDG were two field duplicates (FD), one set of matrix spike/matrix spike duplicate (MS/MSD), and one trip blank (TB) sample. No ambient blanks were collected. During the initiation of this project, it was determined that ambient blanks were not necessary due to the absence of a source at these sites.

All samples were collected by Parsons and analyzed by APPL, Inc. following the procedures outlined in the Statement of Work and CSSA QAPP, Version 1.0. Samples in this SDG were shipped to the laboratory in a single cooler, which was received by the laboratory at a temperature of 2.0°C.

SAMPLE IDs AND REQUESTED PARAMETERS

| Sample ID | Matrix | VOCs | Comments |
|-----------|--------|------|---------------------------|
| TB-1 | Water | X | Trip blank |
| JW-20 | Water | X | |
| LS-7 | Water | X | |
| LS-6 | Water | X | |
| LS-5 | Water | X | MS/MSD |
| OFR-3 | Water | X | |
| OFR-3 FD | Water | X | Field duplicate of OFR-3 |
| RFR-10 FD | Water | X | Field duplicate of RFR-10 |
| RFR-10 | Water | X | |

| Sample ID | Matrix | VOCs | Comments |
|-----------|--------|------|----------|
| RFR-11 | Water | X | |

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

| Parameter | Matrix | Prep Method | Analytical Method | Units |
|-----------|--------|-------------|-------------------|-------|
| VOCS | WATER | SW5030B | SW8260B | µg/L |

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and verified following the guidelines outlined in the CSSA QAPP, Version 1.0. Information reviewed in the data package included sample results; field and laboratory quality control samples; calibrations; case narratives; raw data; chain-of-custody (COC) forms and the sample receipt checklist. The findings presented in this report are based on the reviewed information, and whether the guidelines in the CSSA QAPP, Version 1.0, were met.

VOLATILES

General

The volatiles portion of this data package consisted of twelve (12) water samples that include seven (7) groundwater samples, two (2) field duplicates, one (1) MS/MSD pair, and one (1) trip blank. All samples were collected on September 12 and 13, 2018 and analyzed for a reduced list of VOCs which included: *cis*-1,2-dichloroethene, tetrachloroethene, trichloroethene, and vinyl chloride.

The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. The samples were analyzed in two analytical batches, #233395 and #233430 under one initial calibration (ICAL). All samples were analyzed following the procedures outlined in the CSSA QAPP and were prepared and analyzed within the holding time required by the method. All analyses were performed undiluted.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from two laboratory control spike (LCS) samples, the MS/MSD, and the surrogate spikes. Sample LS-5 was designated as the MS/MSD on the COC.

All LCS, MS/MSD, and surrogate spike recoveries were within acceptance criteria.

Precision

Precision was evaluated using the relative percent difference (RPD) obtained from the MS/MSD results. Precision was further evaluated by comparing the field duplicate analyte results. Sample OFR-3 FD was collected and analyzed as the FD of OFR-3 and RFR-20 FD was collected and analyzed as the FD of RFR-20.

All MS/MSD RPDs were within acceptance criteria.

The following target VOCs were detected above the reporting limit (RL) and met RPD criteria, as follows:

Parent: OFR-3

| Analyte | Parent (µg/L) | FD (µg/L) | %RPD | Criteria (RPD) |
|-------------------|---------------|-----------|------|----------------|
| TCE | 1.72 | 1.72 | 0 | ≤20 |
| Tetrachloroethene | 2.30 | 2.32 | 0.9 | |

Parent: RFR-10

| Analyte | Parent (µg/L) | FD (µg/L) | %RPD | Criteria (RPD) |
|-------------------|---------------|-----------|------|----------------|
| TCE | 2.73 | 2.60 | 4.9 | ≤20 |
| Tetrachloroethene | 4.52 | 4.45 | 1.6 | |

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the CSSA QAPP;
- Comparing actual analytical procedures to those described in the CSSA QAPP;
- Evaluating holding times; and
- Examining laboratory blank and TB for cross contamination of samples during sample collection, transportation, and analysis.

All samples in this data package were analyzed following the COC and the analytical procedures described in the CSSA QAPP, Version 1.0. All samples were prepared and analyzed within the holding time required by the method.

- All instrument performance check criteria were met.
- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met. The ICV was prepared using a secondary source standard. All second source verification criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All internal standard criteria were met.

There were two method blanks and one trip blank sample associated with the VOC analyses in this SDG. The blanks were non-detect for all target VOCs.

Completeness

Completeness has been evaluated in accordance with the CSSA QAPP. The number of usable results has been divided by the number of possible individual analyte results and expressed as a percentage to determine the completeness of the data set.

All VOC results for the samples in this SDG were considered usable. The completeness for this SDG is 100%, which meets the minimum acceptance criteria of 95%.

DATA VERIFICATION SUMMARY REPORT
for groundwater samples collected from
CAMP STANLEY STORAGE ACTIVITY

BOERNE, TEXAS

Data Verification by: Sandra de las Fuentes
Parsons - Austin

INTRODUCTION

The following data verification summary report covers seven water samples collected from Camp Stanley Storage Activity (CSSA) on September 13, 2018. The samples were assigned to the following Sample Delivery Group (SDG).

86883

There were no field QC sample associated with this SDG, nor were there any ambient blanks collected. During the initiation of this project, it was determined that ambient blanks were not necessary due to the absence of a source at these sites.

All samples were collected by Parsons and analyzed by APPL, Inc. following the procedures outlined in the Statement of Work and CSSA QAPP, Version 1.0. Samples in this SDG were shipped to the laboratory in two coolers, which were both received by the laboratory at temperatures of 3.0°C and 2.0°C.

SAMPLE IDs AND REQUESTED PARAMETERS

| Sample ID | Matrix | VOCs | Comments |
|-----------|--------|------|----------|
| LS-7-A2 | Water | X | |
| LS-6-A2 | Water | X | |
| LS-5-A2 | Water | X | |
| OFR-3-A2 | Water | X | |
| RFR-10-A2 | Water | X | |
| RFR-10-B2 | Water | X | |
| RFR-11-A2 | Water | X | |

EXTRACTION, ANALYTICAL, AND REPORTING DETAILS

| Parameter | Matrix | Prep Method | Analytical Method | Units |
|-----------|--------|-------------|-------------------|-------|
| VOCS | WATER | SW5030B | SW8260B | µg/L |

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and verified following the guidelines outlined in the CSSA QAPP, Version 1.0. Information reviewed in the data package included sample results; field and laboratory quality control samples; calibrations; case narratives; raw data; chain-of-custody (COC) forms and the sample receipt checklist. The findings presented in this report are based on the reviewed information, and whether the guidelines in the CSSA QAPP, Version 1.0, were met.

VOLATILES

General

The volatiles portion of this data package consisted of seven (7) groundwater samples. All samples were collected on September 13, 2018 and analyzed for a reduced list of VOCs which included: *cis*-1,2-dichloroethene, tetrachloroethene, trichloroethene, and vinyl chloride.

The VOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8260B. The samples were analyzed in two analytical batches, #233395 and #233430 under one initial calibration (ICAL). All samples were analyzed following the procedures outlined in the CSSA QAPP and were prepared and analyzed within the holding time required by the method. All analyses were performed undiluted.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the two laboratory control spike (LCS) samples and the surrogate spikes.

All LCS and surrogate spike recoveries were within acceptance criteria.

Precision

Precision could not be evaluated due to the lack of duplicate analyses involved in this SDG.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the CSSA QAPP;
- Comparing actual analytical procedures to those described in the CSSA QAPP;
- Evaluating holding times; and
- Examining laboratory blank and TB for cross contamination of samples during sample collection, transportation, and analysis.

All samples in this data package were analyzed following the COC and the analytical procedures described in the CSSA QAPP, Version 1.0. All samples were prepared and analyzed within the holding time required by the method.

- All instrument performance check criteria were met.
- All initial calibration criteria were met.
- All initial calibration verification (ICV) criteria were met. The ICV was prepared using a secondary source standard. All second source verification criteria were met.
- All continuing calibration verification (CCV) criteria were met.
- All internal standard criteria were met.

There were two method blanks associated with the VOC analyses in this SDG. The MBs were non-detect for all target VOCs.

Completeness

Completeness has been evaluated in accordance with the CSSA QAPP. The number of usable results has been divided by the number of possible individual analyte results and expressed as a percentage to determine the completeness of the data set.

All VOC results for the samples in this SDG were considered usable. The completeness for this SDG is 100%, which meets the minimum acceptance criteria of 95%.