



The purpose of this Fact Sheet is to provide an update on the status of Camp Stanley Storage Activity's (CSSA) environmental program, as well as an overview of groundwater sampling conducted in 2021. CSSA's Administrative Record and results for all groundwater sampling events are available in the CSSA Environmental Encyclopedia located on the internet at [www.stanley.army.mil](http://www.stanley.army.mil).

## Overview of CSSA's Environmental Program

In 1991, routine water well testing by the Texas Department of Health detected the presence of dissolved cleaning solvent tetrachloroethene (PCE) and related degradation products above maximum contaminant levels (MCLs) in a former CSSA water supply well (Well CS-MW-16). Subsequent sampling showed volatile organic compound (VOC) contaminant concentrations greater than MCLs in other wells. VOCs make up substances such as paint thinners, dry cleaning solvents, and some constituents of petroleum fuels. CSSA ceased using VOC solvents in the mid-1990s and monitors for VOCs and metals associated with its past industrial processes.

In May 1999, the U.S. Environmental Protection Agency (USEPA) issued a Resource Conservation and Recovery Act (RCRA) 3008(h) Administrative Order on Consent (Order) requiring CSSA to identify, investigate, and prevent further spread of releases of hazardous wastes and/or hazardous constituents to the environment, and to ensure that corrective action activities are implemented to protect human health and the environment.

Sources of CSSA's groundwater contamination were determined to be Solid Waste Management Unit (SWMU) O-1 and SWMU B-3; this area is referred to as Plume 1. Area of Concern 65 (AOC-65) was identified as the source of groundwater contamination at Plume 2.

Following completion of a RCRA Facility Investigation and Corrective Measures Study in 2014, the following corrective measures were documented in the Decision Document, approved by USEPA in July 2015:

- Source area treatment for Plume 1 at SWMU B-3;
- Source area treatment for Plume 2 at AOC-65;
- Granular activated carbon (GAC) units on six off-post private drinking water wells;
- Long-term monitoring of on- and off-post groundwater; and
- Land use controls (restricted entry to CSSA and underground/dig activity permits).

## Plume 1 Remediation Status

Plume 1 continues to be treated using an in-ground bioreactor which has been operating since 2007. Contaminated groundwater is pumped out of the ground and into the bioreactor where contaminants are

broken down by natural bacteria into nonhazardous substances. Since the construction of the bioreactor, over 276 million gallons of contaminated groundwater have been treated by the system.

Groundwater collected from monitoring wells within and surrounding SWMU B-3 is analyzed to evaluate the effectiveness of the bioreactor treatment. Concentrations of PCE in groundwater at SWMU B-3 have continued to show a decreasing trend over time.

## Plume 2 Remediation Status

Plume 2 continues to be treated using in-situ chemical oxidation (ISCO), a process by which a substance called an oxidant is applied to the surrounding groundwater where it reacts with contaminants to break them down into nonhazardous substances. This process has been in place since 2012, and prior to that, the area was treated using various other remediation techniques.

Groundwater collected from monitoring wells at AOC-65 and off-post private wells near AOC-65 is analyzed to evaluate the effectiveness of the ISCO treatment, and to determine if additional oxidant is needed to treat the groundwater. Concentrations of PCE in groundwater down-gradient from AOC-65 have continued to show a decreasing trend over time.

## 2021 Groundwater On- and Off-Post Sampling Results

On- and off-post groundwater monitoring has been conducted for 30 years and continues on a regular basis. Samples collected during monitoring events are analyzed by a laboratory, and the results are evaluated to determine if the corrective measures in place remain protective of human health and the environment.

The locations of all on- and off-post wells sampled in 2021 are shown on the map on the back side of this Fact Sheet. Table 1 on the map presents off-post groundwater data for PCE and trichloroethene (TCE) from all 2021 sampling events. No on-post monitoring wells exceeded the MCLs for PCE and TCE in 2021. Two off-post wells (OFR-3 and RFR-10) exceeded the MCLs for PCE and/or TCE in samples collected prior to treatment within the well's GAC filter. In all other wells tested, any VOCs that were detected had concentrations below the drinking water MCLs for PCE and TCE.

All GAC-filtered samples collected in 2021 were non-detect indicating the GAC units were functioning properly as shown on Table 2. Semi-annual GAC maintenance was performed in March and September 2021. This involved replacing the first carbon canister in each GAC system and other routine maintenance. Carbon canisters were replaced in March 2022 and will be replaced again in September 2022.

CSSA will continue to sample both on- and off-post groundwater wells at frequencies approved by USEPA and TCEQ; and to coordinate the groundwater monitoring program with the regulatory agencies and other potentially affected parties in the community.

In addition to CSSA's standard long-term groundwater monitoring, a sample was collected from each of the four on-post drinking water wells for analysis of 16 different per- and polyfluoroalkyl substances (PFAS) in October 2021. PFAS are widely used, long lasting

chemicals which break down very slowly over time. There are many types of PFAS chemicals, and they are found in many different consumer, commercial, and industrial products. When the 2021 sample results were compared to USEPA health screening values and TCEQ Protective Contaminant Levels (PCLs), one compound (Perfluorooctyl Sulfonate or PFOS) out of the 16 analyzed for at a laboratory was above the USEPA residential screening level for that compound at one well, CS-10. A risk analysis of the concentration of PFOS detected at CS-10 (8.4 parts per billion), determined any risk to human health and the environment at the well is very low. All other PFAS compounds at CS-10 and all samples from the other three wells were below both TCEQ and USEPA criteria.

## Prescribed Burning at CSSA

Prescribed burning is periodically conducted by trained fire practitioners of the Bureau of Land Management at CSSA to reduce hazardous accumulations of potential wildfire fuels. Unlike wildfires—unplanned fires caused by lightning and other natural causes, or accidental fires ignited by humans—prescribed burns take place under specific weather conditions, require significant preparation, and follow explicit safety protocols. There are a number of benefits to prescribed burning including:

- Reduce hazardous wildfire fuels, protecting nearby communities;
- Minimize the spread of pest insects and disease;
- Remove unwanted plant species that threaten native species;
- Provide forage for game;
- Improve habitat for threatened and endangered species;
- Recycle nutrients back to the soil; and
- Promote the growth of trees, wildflowers, and other plants.

CSSA maintains and follows a burn plan to help determine where the burn should be conducted, what type should be done before burning, how to conduct the burn, when to burn, and what should be done after the burn. CSSA will not conduct any prescribed burns when state or local burn-bans are in place.

## Connecting to SAWS

CSSA is in the process of converting its on-post water supply from a network of four wells and on-post storage reservoir to a connection to the San Antonio Water System (SAWS). A study conducted in 2020 determined that the 80-year-old reservoir, integral to CSSA's water supply system to maintain pressure and fire-fighting capacity, is deteriorating structurally.

Several alternatives were evaluated to determine the safest and most cost-effective way to ensure CSSA can maintain water quantity and



pressure needed for fire suppression and drinking water throughout CSSA. The three primary alternatives included: 1) No Action (retain the aging reservoir); 2) demolish the aging reservoir and construct a new one; 3) connect the CSSA water system to SAWS and remove the existing four water supply wells from the distribution system. An Environmental Assessment (EA) was performed in 2021 to evaluate any potential environmental impacts from the various alternatives. The decision to connect to SAWS was determined to be the best alternative because it would not cause an interruption to CSSA's water supply, and the EA found it to have No Significant Impact on the environment or communities in and around CSSA.

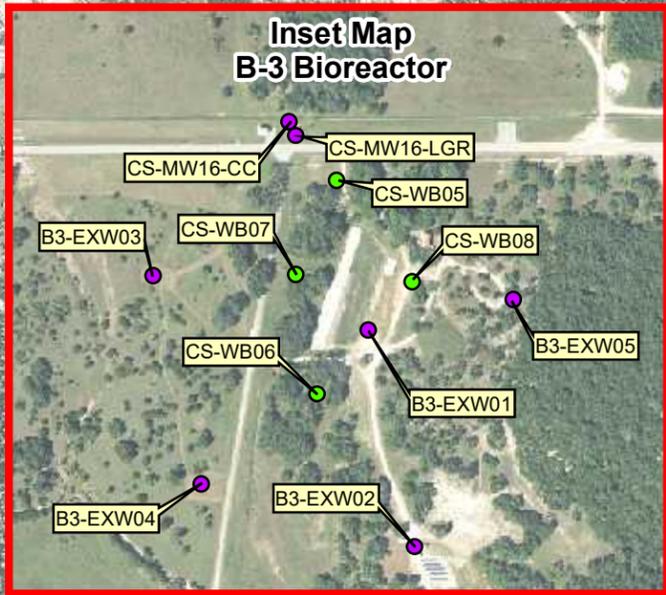
## Activities Planned for the Remainder of 2022

- Continued remediation of groundwater at the AOC-65 ISCO remediation area and the SWMU B-3 bioreactor system.
- Continued remediation and addition of oxidants throughout AOC-65 to distribute ISCO solution over a wider area.
- Continued groundwater monitoring at on- and off-post wells, AOC-65, and SWMU B-3 in accordance with the most recent long-term monitoring optimization results and data quality objectives approved by USEPA and TCEQ to assess the corrective measures' impacts on contaminant concentrations.
- On-post drinking water system monitoring, operation, and maintenance, and off-post GAC maintenance.
- Continue construction on CSSA's water system connection to SAWS.

## Public Outreach and Future Fact Sheets

CSSA has been issuing Fact Sheets similar to this one since 2000. We will continue to mail Fact Sheets annually to provide information on sampling results, ongoing investigations, and cleanup activities. Each well owner involved in the groundwater monitoring program will continue to receive a separate letter concerning laboratory results for their wells after sampling by CSSA. The public is welcome to comment on this Fact Sheet and the environmental activities at CSSA by writing or calling:

- CSSA Installation Manager at (210) 295-7416;
- USEPA Regional Program Manager, Mr. Greg Lyssy, at (214) 665-8317;
- TCEQ Regional Program Manager, Mr. Timothy Brown, at (512) 239-6526; or
- SGM Dean Welch, ARNORTH Public Affair Office, office (210) 221-0765, mobile (210) 216-5546, email [usarmy.jbsa.arnorth.list.pao-owner@mail.mil](mailto:usarmy.jbsa.arnorth.list.pao-owner@mail.mil).



**TABLE 1: OFF-POST GROUNDWATER SAMPLING RESULTS**

Well ID	Date (2021)	PCE (ppb)	TCE (ppb)
LS-5	Mar	1.01F	3.99
	Jun	1.07F	4.21
	Sep	1.24F	4.04
	Dec	1.17	3.67
LS-6	Jun	0.51F	ND
	Sep	0.99F	0.23F
	Dec	1.01	0.792J
LS-7	Mar	1.61	ND
	Jun	0.65F	ND
	Sep	0.95F	ND
	Dec	0.991J	0.82J
OFR-3	Mar	4.25	2.38
	Jun	4.5	3.26
	Sep	<b>5.5</b>	3.31
	Dec	4.77	3.44
RFR-10	Mar	<b>6.12</b>	1.71
	Jun	<b>6.3</b>	4.93
	Jun	<b>6.13</b>	<b>5.12</b>
	Sep	<b>8.13</b>	4.34
RFR-11	Dec	<b>10.50</b>	<b>5.62</b>
	Mar	ND	2.55
	Jun	1.61	ND
	Spe	1.69	0.76F
Dec	1.49	1.3	

**TABLE 2: POST-GAC SYSTEM SAMPLING RESULTS**

Well ID	Date (2021)	PCE (ppb)	TCE (ppb)
RFR-10-A2	Mar	ND	ND
	Sep	ND	ND
RFR-10-B2	Mar	ND	ND
	Sep	ND	ND
RFR-11-A2	Mar	ND	ND
	Sep	ND	ND
LS-5-A2	Mar	ND	ND
	Sep	ND	ND
LS-6-A2	Mar	ND	ND
	Sep	ND	ND
LS-7-A2	Mar	ND	ND
	Sep	ND	ND
OFR-3-A2	Mar	ND	ND
	Sep	ND	ND

Aerial Photo Date: 2020



- Wells with VOC concentrations > MCL
- Wells with VOC concentrations between RL and MCL
- Wells with VOC concentrations < RL
- Non-detect
- Multipoint Westbay Wells
- Other wells
- Fence Line

2021 Sampled On-Post and Off-Post Groundwater Wells Camp Stanley Storage Activity

**PARSONS**