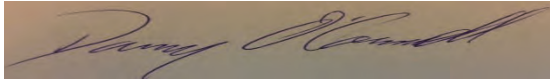


Region 6 - Enforcement & Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	02/13/2024 and 02/14/2024	
Media Program:	Drinking Water	
Regulatory Program(s)	Safe Drinking Water Act (SDWA)	
System Owner:	City of Sherman	
System Name:	City of Sherman Public Water System (PWS)	
System Physical Location:	243 La Cima Rd.	
(city, state, zip code)	Sherman, TX 75092	
Mailing address:	243 La Cima Rd.	
(city, state, zip code)	Sherman, TX 75092	
County/Parish:	Grayson County	
System Phone Number	(903) 892-7258	
System Contact:	Jim Cross	Water Systems Manager
	jimcross@cityofsherman.com	
FRS Number:	110013273698	
System Classification:	Community Water System (CWS)	
PWS ID:	TX0910006	
Media Identifier Number:	N/A	
NAICS:	N/A	
SIC:	4941	
Personnel participating in inspection:		
Sami Doupnik	EPA Region 6	Enforcement Officer
Fatima Shaikh	EPA Region 6	Enforcement Officer
Craig Young	EPA Region 6	Enforcement Officer
Daniel Kim	EPA Region 6	Enforcement Officer
Danny O'Connell	PG Environmental/ERG (EPA Contractor)	Inspector
Jake Okun	PG Environmental/ERG (EPA Contractor)	Inspector
Jim Cross	City of Sherman	Water Systems Manager
Everado Falcon	City of Sherman	Distribution
Jayson Risner	City of Sherman	Distribution
Oscar Canales	City of Sherman	Maintenance Supervisor
Michelle Reed	City of Sherman	Water Quality Manager
DeWayne Sutherland	City of Sherman	Water System Coordinator
LeRoy Dorley	City of Sherman	Water Production Supervisor
EPA Lead Inspector:		
Signature/Date		3/27/2024
	Danny O'Connell (PG Environmental, a division of ERG)	Date
EPA Supervisor:		
Signature/Date	LORI TANNER Digitally signed by LORI TANNER Date: 2024.03.29 08:55:10 -05'00'	3/29/2024
	Loribeth Tanner (EPA Region 6)	Date

Section I – INTRODUCTION

Purpose Of The Inspection

On February 13-14, 2024, U.S Environmental Protection Agency (EPA) Region 6 and EPA contract inspectors from PG Environmental, a division of ERG (hereinafter the EPA Inspection Team) conducted an announced Safe Drinking Water Act (SDWA) compliance inspection of the City of Sherman Public Water System (the System or City) ID No. TX0910006. The inspection began at approximately 8:30 a.m. on February 13, 2024 and finished at approximately 4:00 p.m. on February 14, 2024. The City of Sherman owns and operates the PWS.

Danny O’Connell and Jake Okun presented their SDWA inspector credentials to the System representatives during the opening conference. The EPA Inspection Team informed the System representatives that this was an EPA inspection to determine compliance with the SDWA and other applicable federal and state regulations. The EPA Inspection Team met with Jim Cross, the System’s Water Systems Manager, as well as other System representatives (see the attendance table on Page 1) for the opening conference.

This report summarizes observations made as part of the inspection, which consisted of the following major activities:

- Discussions with the City’s water system personnel regarding the operation and maintenance of the PWS
- Site visits to the System’s water treatment plants:
 - **Conventional Surface Water Treatment Plant (offline during inspection)**
 - Pre-Sedimentation Basin
 - Inline Static Mixers
 - Flocculation Basins
 - Sedimentation Basins
 - Multi-Media Filters
 - Electro-dialysis Reversal Demineralization (EDR) System
 - North and South Clearwells
 - High Service Pump Station
 - **Ultra-Filtration/Reverse Osmosis (UF/RO) Surface Water Treatment Plant**
 - Pre-Sedimentation Basin
 - Strainers
 - Ultra Filtration
 - RO Trains
 - Break Tank
 - North and South Clearwells
 - High Service Pump Station
- Site visits to the following sites:
 - **Fairview Site**
 - Groundwater well G0910006Q
 - Fairview underground storage tank (1.35 MG)
 - Fairview chlorine storage/injection room
 - Fairview distribution pump station

- **Stephens Site**
 - Groundwater wells G0910006U and G0910006W
 - Stephens ground storage tank (2 MG)
 - Stephens chlorine storage/injection room
 - Stephens distribution pump station
- **Fairview Tower (1 MG)**

Photos taken during the inspection are included in [Appendix 1, Photograph Log](#).

System Description

The City of Sherman Public Water System (PWS) is a surface water and groundwater system that provides service to 21,236 connections and an estimated population of 43,645 individuals, according to the Safe Drinking Water Information System (SDWIS) database. The City of Sherman PWS is classified as a community water system. The City operates a conventional surface water treatment plant, an ultra-filtration/reverse osmosis (UF/RO) surface water treatment plant (the UF/RO plant), and 10 groundwater treatment plants that correspond to the groundwater wells positioned throughout the System. The conventional surface water treatment plant was completely offline for rehabilitation during the inspection, and System representatives indicated that it had been offline since December 2022. 23 groundwater wells, nine pump stations, and the 10 groundwater treatment plants are on one pressure plane, while the two surface water treatment plants are on another pressure plane that is divided into three pressure zones. Raw water produced from the groundwater wells is disinfected by gaseous chlorination. The groundwater system is capable of producing 10 million gallons per day (MGD) while the surface water system can produce a combined 20 MGD between the conventional treatment plant and the UF/RO plant. The System is also in the process of adding an additional 5 MGD of capacity to the UF/RO plant to meet anticipated growth. Peak daily demand for the System is approximately 16 MGD while average daily demand is approximately 8.2 MGD.

Surface water is sourced from Lake Texoma via a pump station that is shared with the North Texas Municipal Water District. System representatives explained that the state of Oklahoma owned the water, and that there may be some challenges in the future regarding water rights and the coordination of activities that require the use of the water. The surface water and groundwater pressure planes operate independently of each other, but interconnections exist between the two. The City also has interconnections with five other water systems, including the City of Knollwood PWS, the Marilee Special Utility District PWS, the City of Dorchester PWS, the Pink Hill Water Supply Corporation, and an emergency interconnection with Starr WSC. There are four elevated storage tanks and one ground tank throughout the surface water pressure plane, and two elevated storage tanks, two ground tanks, and eight underground storage tanks throughout the groundwater pressure plane.

A hydraulic profile of the main water system can be seen in [Appendix 2, Exhibit 1, Main Water System Hydraulic Profile](#). A process flow diagram of the conventional plant can be seen in [Appendix 2, Exhibit 2, Conventional Plant Process Flow Diagram](#), and a process flow diagram of the membrane (UF/RO) plant can be seen in [Appendix 2, Exhibit 3, Membrane \(UF/RO\) Plant Process Flow Diagram](#). Each of these diagrams were obtained from a compliance investigation report generated by Texas Commission on Environmental Quality (TCEQ). The report was titled "Texas Commission on Environmental Quality Investigation Report" for the City of Sherman. The investigation was conducted at the City of Sherman PWS on June 21, 2023.

Staffing Information

The treatment plants are staffed twenty-four hours per day, seven days per week (24/7) through two, 12-hour shifts. The City also has a call center to assist customers 24/7. The treatment plant and operators and distribution staff are responsible for preventative maintenance (PM) activities and corrective maintenance (CM) activities (e.g., main breaks). At the time of the inspection, the System had open job positions for six distribution positions (two of which will be responsible for valve maintenance) and one for general plant operations.

Section II – INSPECTION ACTIVITY SUMMARY

The EPA Inspection Team conducted an array of interviews and field activities to discuss and observe PWS operation and maintenance (O&M) and to assess the condition of drinking water system assets. The physical inspection occurred over two days. Previous TCEQ Compliance Investigation reports were provided beforehand. The information in this report is based on document review, conversations with System representatives, and observations made during this inspection.

Supervisory Control and Data Acquisition (SCADA) System

The City uses a supervisory control and data acquisition (SCADA) system to monitor, trend, and operate flow/pumping rates and run times for all the wells and to monitor water levels inside finished water storage tanks. The wells are programmed, through the SCADA system, to turn on and off based on the level of the associated storage tank and the known hydraulic demand of its pressure zone.

Alarms are programed into the SCADA system to alert operators of failures in the treatment system, of well pump operational status, and of low tank levels. [REDACTED]

Asset Management/Computerized Management Maintenance System (CMMS)

The City does not have a formal asset management system or computerized maintenance management system (CMMS) for the treatment plants, and the distribution system is currently using components of an 'in-house' developed support system to track some aspects of its maintenance activities. The City tracks ongoing corrective maintenance activities in the distribution system through a customized work order system created using Microsoft Access and utilizes a written inventory to track warehoused distribution system parts. PM activities are not formally tracked at either the conventional treatment plant or the UF/RO plant. The City maintained a list of some ongoing CM activities; however, it is unclear to the EPA Inspection Team if it is a complete list (refer to [Appendix 2, Exhibit 6, Ongoing Corrective Maintenance List](#)). The City has redundant equipment (i.e., pumps, filters, EDR membranes, strainers, UF/RO units etc.) and backup equipment such as chemical injection pumps, but unique details for the equipment such as past maintenance activity, equipment age, run hours, and location are not formally tracked using an asset management system.

Work Order Log Sheets/Call Logs

The EPA Inspection Team received "Work Order Log Sheets" (call logs) from System representatives that range from July 5, 2023 through February 9, 2024. The call logs are not included in this report because they contain personally identifiable information such as caller name, address, and phone number. The

call logs contain information such as caller contact information, the problem reported by the caller, who received the call, what time the call was received, and the associated work order number. The logs did not identify the location where the call was received (i.e., control room at the plant, city hall, etc.).

The EPA Inspection Team identified the following during a review of the provided call logs:

- 109 water leaks
- 58 meter leaks
- 63 main breaks
- 132 “busted service lines”
- One water color complaint
- One water taste complaint
- 37 “N/W” (no water) complaints
- 20 fire hydrant leaks
- 23 low pressure complaints
- 7 dirty water/water quality complaints

Additionally, there were several work order logs pertaining to contractors hitting water lines, or just “water line hit” without additional detail. These work orders primarily span September 1, 2023 through November 30, 2023. There were also numerous call logs regarding a “choked” sanitary sewer, particularly spanning December 1, 2023 through January 31, 2024. Although logs pertaining to the sanitary sewer/wastewater collection system do not directly pertain to drinking water quality, it is worth noting due to the high volume of entries.

Examples of comments associated with the above complaints included the following:

- 7/30/2023 – “No Pressure”
- 8/22/2023 – “test pressure L/P [low pressure]”
- 8/25/2023 – “valve is leaking”
- 8/26/2023 – “contractor hit water line”
- 8/31/2023 – “MH running over”
- 9/9/2023 – “sewer leak/MH running over”
- 9/11/2023 – “contractor hit water line”
- 9/12/2023 – “dirty water”
- 9/20/2023 – “m/h running over” (Note: the definition of “m/h” is unknown, but it may refer to a possible sanitary sewer overflow in the collection system)
- 10/2/2023 – “hit water line”
- 11/3/2023 – “Brown water”
- 11/7/2023 – “water line hit”
- 11/10/2023 – “@ 0340 main line break”
- 11/13/2023 – “water line hit”
- 11/16/2023 – “water line hit”
- 11/20/2023 – “water line hit”
- 11/28/2023 – “Milky Water”
- 12/28/2023 – “Cont [contractor] hit water line”
- 1/16/2024 – three separate entries for “structure fire,” two for “N/W”, one for “brown water”
- 1/18/2024 – “flush hydrant, water tastes like dirt”
- 1/20/2024 – “MH running over” (Note: refer to the earlier entry regarding “m/h” above)

Use of Geographic Information System (GIS)

The System utilizes a GIS database to inventory and track assets in the distribution system. Valves, lines, and hydrants are mapped in their GIS system, and it is primarily used as a tool to locate assets. Information regarding the type of material used in the construction of distribution assets is not currently maintained in the GIS system.

Lead and Copper Rule (LCR) Evaluation

While onsite, the EPA Inspection Team discussed LCR monitoring activities, including customer notifications and the last sampling event that occurred in 2022 when the UF/RO plant was brought online. During this sampling period, there was a sample taken on January 26, 2022 that showed elevated concentrations for Total Copper and Total Lead. The Total Copper value was 0.495 mg/L, and the Total Lead value was 0.482 mg/L. The sample site was retested on April 5, 2022 as it was suspected that a sampling error resulted in the elevated values. The retest results indicated a Total Copper value of 0.077 mg/L and a Total Lead value of <0.00025 mg/L.

The EPA Inspection Team reviewed the City of Sherman PWS Lead and Copper sampling plan following the onsite inspection. A document from 2016 titled “Lead/Copper Sample Site Selection Pool and Materials Survey Form” was provided via email after the conclusion of the onsite inspection (refer to [Appendix 3, 2016 Sherman LCR Sampling Plan](#)). The plan identifies the 35 regular sample sites and the 37 backup sample sites. The plan outlines the criteria for designating a sample site as Tier 1, Tier 2, Tier 3, or Other. When the UF/RO plant was brought online, TCEQ required the City to collect 60 Lead and Copper samples for two consecutive six-month monitoring periods.

In addition to the City’s LCR sampling plan, the EPA Inspection Team also reviewed the City’s process to meet EPA’s LCR Inventory requirement by October 16, 2024. The City is in the process of working with a contract engineering company, carrying out a two-phase plan that involves generating a comprehensive lead service line inventory.

Hydrant Flushing

The EPA Inspection Team reviewed the City’s hydrant flushing program, including 12 months’ worth of dead-end main flushing reports for 2023, which contained monthly flushing routes and monthly total coliform monitoring results. According to the 2023 reports, the City flushed between 128 and 152 of their dead-end hydrants each month. It was unclear to the EPA Inspection Team how many total dead-end hydrants were present in the distribution system. In general, the hydrants that weren’t flushed were due to holidays, weather events (freezing rain, snow, etc.), or ongoing maintenance in the area (main breaks, line repairs, road construction). However, multiple hydrants were repeatedly not flushed each month for reasons such as mechanical failures and being located on private property. In addition to missing dead-end hydrant flushing, there was an example of a hydrant flushing colorimeter result that showed a Total Chlorine value that did not reach greater than 0.5 mg/L. The hydrant flushing summary report from November 2023 contains an example of each of these observations, so a portion of the summary will be included as an appendix of this report (refer to [Appendix 2, Exhibit 4, Abbreviated November 2023 Hydrant Flushing Summary](#)).

Previous Sanitary Surveys

The EPA Inspection Team reviewed a document titled, "Texas Commission on Environmental Quality Investigation Report" for the City of Sherman conducted at the City of Sherman PWS on June 21, 2023. The EPA Inspection Team reviewed the document with the System representatives to ensure that the corrective actions identified in the sanitary survey had been completed.

Emergency Response Plan and Risk and Resiliency Assessment

The System used a contractor, Municipal H₂O, to complete its Emergency Response Plan (ERP) and Risk and Resiliency Assessment (RRA) documents. The System certified to EPA the completion of its RRA on May 5, 2021 and the its ERP on September 23, 2021. Both documents were certified as complete by the appropriate deadlines. System representatives indicated that the ERP and RRA documents were last updated on February 5, 2024. The documents were complete, and fulfilled the requirements outlined in SDWA Sections 1433(a) and (b).

Anticipated Growth and Status of the Conventional Treatment Plant

The conventional treatment plant was out of service for rehabilitation during the inspection, and System representatives indicated that it had been offline since December 2022. Prior to 2021, the City was in the process of evaluating the cost of permanently decommissioning the plant versus rehabilitating it, and they determined that it would cost approximately \$50 million to permanently decommission the plant. Based on this analysis, the City decided to formally decommission the conventional plant and to operate the UF/RO plant as its sole surface water treatment plant. Therefore, the City began allowing equipment at the conventional plant to reach the end of its useful life without conducting routine preventative maintenance to extend the life of the assets. For example, one of the two inline static mixers at the conventional plant had experienced a complete structural failure due to heavy corrosion before it was taken offline. Additionally, components of the EDR units were being scavenged from redundant EDR units when they experienced failure, rather than replacing the failed EDR components with new ones.

However, in November 2023 Texas Instruments (TI) announced plans to build a semiconductor manufacturing factory in Sherman, Texas that would use water at a rate of 12 to 15 MGD. In June 2022 GlobalWafers) also announced plans to build a silicon wafer fabrication factory in Sherman, Texas which would require an additional 8-10 MGD for their industrial processes. The City also anticipates an additional demand of 5 MGD to accommodate over 30 planned developments, restaurants, hotels, and shopping centers in Sherman. To help meet the forecasted demand, the City decided to invest the \$50 million into rehabilitating the conventional plant rather than formally decommissioning it, adding an additional 10 MGD of treatment capacity to what they would be able to produce without the conventional plant. The City is in the process of replacing/repairing treatment equipment such as valves, pipes, mixers, chain and flight mechanisms, EDR components, and pumps to prepare to bring the plant back online once TI begins their operations. The City is also in the process of adding additional UF/RO membrane treatment units which will add an additional 5 MGD of treatment capacity.

FACILITY/SYSTEM WALKTHROUGH

Conventional Surface Water Treatment Plant

The Facility walkthrough began at the conventional treatment plant, which was offline for rehabilitation at the time of the inspection. Various treatment components were completely removed during the inspection. Refer to [Appendix 2, Exhibit 2](#) for a process flow diagram of the conventional treatment plant.

First, the EPA inspection Team observed the raw water meter vault. There were three chemical injection ports into the raw water line entering the plant, but System representatives indicated that only one, the copper sulfate port, was used (refer to [Appendix 1, Photograph 1](#)). The other two injection lines had been disconnected. Copper sulfate is used for algae control during normal operation. System representatives indicated that potassium permanganate could also be fed through one of the ports, but that it hadn't been used in the treatment process for approximately four years. A process flow diagram of the conventional treatment plant provided by the TCEQ indicates that the chemical injection of copper sulfate and potassium permanganate occurs in the raw water vault prior to the raw water flow meter. However, the raw water flow meter is located upstream of the chemical injection points.

Following the raw water vault, the pre-sedimentation basin was observed. Water was observed to be leaking into the pre-sedimentation basin at an estimated rate of a few gallons per minute during the inspection, and System representatives suggested that the raw water valve might have been leaking or not completely closed (refer to [Appendix 1, Photograph 2](#)). The water was discharging through a partially open gate to the sanitary sewer (refer to [Appendix 1, Photograph 3](#)). It was unclear to the EPA Inspection Team how the sanitary sewer was connected to the basin or if there was a structure between the basin and the sanitary sewer. The potential for a cross-connection was not evaluated during the inspection. System representatives closed the raw water valve completely following the observation, and the leak stopped.

After the pre-sedimentation basin, water enters two parallel lines (an 18-inch line and a 36-inch line) each equipped with a static in-line mixer (refer to [Appendix 1, Photograph 4](#)). During normal operation, chemical injection of hydrochloric acid (HCl), chlorine, ammonia, polymer, and alum occurs prior to the mixers. The 18-inch line was already replaced and the 36-inch line was in the process of being replaced. System representatives stated that the lines were being replaced due to heavy corrosion and structural failure that resulted in water leaking from the lines. After the inline mixers, water flows into two flocculation basins. During normal operation, the flocculator system treats effluent from the pre-sedimentation basin. The interior metal components of the flocculation basins were corroded, but System representatives indicated that the metal components would be replaced before the plant was brought back online (refer to [Appendix 1, Photograph 5](#)). Next, two parallel sedimentation basins were observed (refer to [Appendix 1, Photograph 6](#)). During normal operation, flights operate on skid tracks at the bottom of the basin to remove settled solids. The components of the chain and flight system used to remove solids from the basin had been completely removed. Solids are wasted to one of two onsite sludge ponds, and the decant water is pumped to the City's wastewater treatment plant.

The four dual media (sand and granular activated carbon) filters were observed next (refer to [Appendix 1, Photograph 7](#)). System representatives indicated that the valves and actuators on the filter lines were recently replaced. Backwashes occur on a time-based schedule (every 100 hours) rather than based on pressure differential or head loss. A backwashing standard operating procedure (SOP) was present in the

filter room (refer to [Appendix 1, Photograph 8](#)). System representatives indicated that finished water stored in a 0.6 MG backwash storage tank was used for backwashes (refer to [Appendix 1, Photograph 9](#)). The EPA Inspection Team observed the pipe gallery below the filters which included the new actuators on the filter lines, as well as chemical delivery lines to different areas of the treatment process. The potassium permanganate line was severed (refer to [Appendix 1, Photograph 10](#)). In addition, the HCl feed line had been modified in a few locations so that lines could be drained during the plant shut-down process.

The chemical storage room was observed following the pipe gallery. Two copper sulfate day tanks were observed, but they were labeled with potassium permanganate signs (refer to [Appendix 1, Photograph 11](#)). System representatives indicated that potassium permanganate used to be stored in the tanks but was no longer used in the treatment process. The secondary containment wall surrounding the day tanks was damaged in one location (refer to [Appendix 1, Photograph 12](#)). The wall was repaired and a photo was provided to the EPA Inspection Team prior to the conclusion of the inspection (refer to [Appendix 4, Follow-Up Material](#)). Next, the Electro-dialysis Reversal Demineralization (EDR) system was observed (refer to [Appendix 1, Photograph 13](#)). System representatives indicated that they had been scavenging parts from redundant EDR units to repair other EDR units while the plant was in operation rather than replacing the parts. However, the City was in the process of rehabbing all of the EDR units during the inspection. Following EDR treatment, the water flows through a clearwell meter vault prior to flowing into the North and South clearwells.

Membrane (UF/RO) Plant

The UF/RO plant was in operation during the inspection and was therefore treating 100% of the water being produced by the System. Refer to [Appendix 2, Exhibit 3](#) for a process flow diagram of the UF/RO system.

The head of the UF/RO membrane plant contains a raw water meter vault and pre-sedimentation basin. After the pre-sedimentation basin, the five ultra-filtration feed pumps were observed (refer to [Appendix 1, Photograph 14](#)). A fifth pump had recently been added to accommodate the upgraded treatment capacity at the plant. Next, the seven, 130-micron strainers were observed (refer to [Appendix 1, Photograph 15](#)). System representatives indicated that the strainers were backwashed based on loss of pressure. Following the strainers, water flows through the five UF units (refer to [Appendix 1, Photograph 16](#)). Two UF units were being added during the inspection. 50% of the UF permeate is sent through an RO supply line via two RO feed pumps (one for each RO train). There were three unlabeled chemical injection ports into the RO supply line (reported to be for HCl, NaHSO₄, and Anti-Scalant), however the HCl line had failed and was disconnected (refer to [Appendix 1, Photographs 17 and 18](#)). The line was in the process of being replaced. System representatives indicated that they weren't having trouble with maintaining target pH levels so the line didn't need to be immediately replaced.

RO permeate flows into an RO break tank. During the inspection, a third RO unit was being constructed (refer to [Appendix 1, Photograph 19](#)). The remaining 50% of the permeate from the UF system is bypassed around the RO units and sent directly to a UF break tank. The UF permeate and the RO permeate each enter a separate location in the break tank. They mix in a third section of the break tank and the mixture is injected with chlorine. The produced water from the UF/RO process is then injected with fluoride, phosphate, and caustic into the 84-inch clearwell feed line. The three chemical injection ports for the clearwell feed line were unlabeled. System representatives were unsure which line fed which chemical (refer to [Appendix 1, Photograph 20](#)). One of the injection ports was upstream of a flow

meter, and the other two were downstream. The water from the UF/RO plant is mixed with the produced water from the conventional process at the end of the baffled portion of the North and South clearwells.

North and South Clearwells

After the clearwell feed line, the North and South clearwells were observed (refer to [Appendix 1, Photograph 21](#)). There were cracks that appeared to have been repaired on the surface of the clearwells roof/operation deck (refer to [Appendix 1, Photograph 22](#)). Chlorine is injected at the influent ends of the clearwells, which are baffled. Ammonia is injected after the baffles prior to the main clearwell basins to generate chloramines. Produced water from the UF/RO membrane plant is mixed with produced water from the conventional plant in the clearwells. During the inspection, only water from the UF/RO membrane plant was being sent to the clearwells. There were ultrasonic level sensors with electrical wiring on the surface of the clearwells that contained electrical conduits with openings, providing direct access to the water inside of the clearwells (refer to [Appendix 1, Photograph 23](#)). It was also unclear if there was a sealed gasket between the base of the ultrasonic level sensors and the top of the clearwell (refer to [Appendix 1, Photograph 24](#)). When this observation was made, System representatives covered the openings with electrical tape and provided a picture to the EPA Inspection Team (refer to [Appendix 4, Follow-Up Material](#)). Additionally, one of the hatchways on top of the clearwell contained a vault-style lid, and a drainage line that extended from the hatchway water trough was not covered by a mesh screen (refer to [Appendix 1, Photograph 25](#)). When this observation was made, System representatives placed a screen over the end of the line and provided a picture to the EPA Inspection Team (refer to [Appendix 4, Follow-Up Material](#)).

High Service Pump Station

The EPA Inspection Team observed the high service pump station which pumps finished water from a finished water vault into the distribution system (refer to [Appendix 1, Photograph 26](#)). There were four high service pumps present, and a fifth pump was removed for maintenance. The platform of the removed pump was covered with tarp, plywood, and caulking to prevent contaminants from entering the finished water supply (refer to [Appendix 1, Photograph 27](#)). The concrete pump pad appeared to be new. The metal bases of the other high service pump motors were heavily corroded and the concrete around the bases were cracked in places. The cracks provided potential access for contaminants to enter the finished water supply (refer to [Appendix 1, Photograph 28](#)).

Chlorine Storage and Injection Rooms

Following the inspection of the treatment plants, the chlorine storage and injection rooms were observed. There was one chlorine facility onsite that serves both the conventional and UF/RO plants. There was a respirator on the outside wall of the chlorine storage room, and System representatives stated that each of the facility personnel were fit tested for a respirator (refer to [Appendix 1, Photograph 29](#)). There was an observation window and crash bar for exiting on the door leading to the chlorine storage room and the chlorine injection room (refer to [Appendix 1, Photograph 30](#)). Chlorine gas sensors were present near the floor of the chlorine storage room and alarms were also present (refer to [Appendix 1, Photograph 31](#)). There was a bottle of liquid ammonia next to the chlorine cylinders. The chlorine injection room was located adjacent to the chlorine storage room and also contained a sensor and alarms. The ventilation system for both rooms was functional.

Fairview Site

On the second day of the inspection, the Fairview Site was observed. The site was surrounded by a locked perimeter fence with barbed wire. The site consists of a groundwater well (G0910006Q), the Fairview Water Treatment Plant, a 1.35 MG underground storage tank (Fairview Tank), and a pump station. System representatives indicated that the well/pump station hadn't been operated since October/November 2023, and that the storage tank would be completely drained and refilled before the system was put back into operation. There was one, 2,000 gallon per minute (GPM) pump at the pump station, and the other had been removed for maintenance in October 2023 (refer to [Appendix 1, Photograph 32](#)). The pump pad for the removed pump was covered with plywood and a caulking seal.

The vents on the top of the tank had bases that were constructed of sheet metal that appeared to have voids and lacked sanitary seals (refer to [Appendix 1, Photograph 33](#)). Dirt was accumulating beneath the metal, and ants were observed crawling under the metal (refer to [Appendix 1, Photograph 34](#)). There were several manhole structures that appeared to be similar to sanitary sewer manholes on the surface of the tank that provided access to the tank (refer to [Appendix 1, Photograph 35](#)). The structures were approximately 1 to 2 inches above the ground. The manhole structures were covered with cylindrical metal lids that were locked. The lids lacked sealed gaskets, and dirt had accumulated inside of the lids (refer to [Appendix 1, Photograph 36](#)). Ants were also observed to be crawling under the lids. The manhole covers were sealed with duct tape and silicon caulking. The caulking was deteriorated in places and the duct tape was peeling (refer to [Appendix 1, Photograph 37](#)). Corrosion, moisture, and roots were observed on the interior surface of the manholes structures (refer to [Appendix 1, Photographs 38 and 39](#)). There were areas of depression surrounding some of the manhole structures where it appeared that water would pond during rain events (refer to [Appendix 1, Photograph 40](#)).

The EPA Inspection Team observed a heavily corroded pipe inside the tank that was visible from one of the manhole structures (refer to [Appendix 1, Photograph 41](#)). Operators indicated that the metal pipe was the end of an old line that extended from a small surge tank that used to be fed by a groundwater well that was no longer present at the site. The pipe did not appear to be plugged, leaving an open pipe into the tank. Therefore, there is potential for contaminants to enter through the pipe from the old surge tank. There was also a void surrounding the pipe and it was unclear if the void was from the pipe settling or if there was a failure in the tank wall (refer to [Appendix 1, Photograph 42](#)). There was a metal cap covering a cylindrical concrete structure next to the manhole from which the corroded metal pipe was observed. System representatives were unsure what this asset was (refer to [Appendix 1, Photograph 43](#)).

Following the Fairview Tank, Well G0910006Q was observed at the Fairview site (refer to [Appendix 1, Photograph 44](#)). The well was operational but not in use during the inspection. There was a gap between the base of the well pedestal and the well pad (refer to [Appendix 1, Photograph 45](#)).

The chlorine storage and injection room were observed at the Fairview site. The door to the chlorine room lacked a crash bar and observation window (refer to [Appendix 1, Photograph 46](#)). The room also lacked an alarm system, and a full-face self-contained breathing apparatus or supplied air respirator was not present outside of the room. A threaded hose tap without backflow prevention was observed extending from a finished water line in the chlorine room (refer to [Appendix 1, Photograph 47](#)). A hose was attached to the hose tap, and it was disconnected when pointed out to System representatives. Chlorine is injected into the Fairview Tank via a finished carrier water line. The EPA Inspection Team observed the chlorine injection vault. The bottom of the vault was lined with dirt and showed signs of

past flooding and/or water accumulation inside of the vault (i.e., water marks, mud cracks). There was also an unattached port leading into the vault, and System representatives were unsure of the port's purpose (refer to [Appendix 1, Photograph 48](#)).

The Fairview site, including the pump station and Fairview Tank were inspected by Texas Tank Services on January 18, 2023. The associated tank inspection report was provided to the EPA Inspection Team (refer to [Appendix 2 Exhibit 5, Contractor Fairview Tank Inspection Report 1/18/2023](#)). Multiple observations regarding the Fairview Tank that were made by Texas Tank Services were also made by the EPA Inspection during this inspection. See *Section III-Observations* below for more detail.

Stephens Site

The Stephens Site, including two groundwater wells (G0910006U and G0910006W), the Stephens Water Treatment Plant, a 2 MG ground storage tank (Stephens Tank), and a pump station, was observed following the Fairview site. The Stephens site was surrounded by a locked perimeter fence with barbed wire, but there were trees growing against and through the perimeter fence in some locations (refer to [Appendix 1, Photograph 49](#)). When the EPA Inspection Team arrived at the Stephens site at approximately 1:30 p.m. on February 14th, the tank was leaking water onto the ground at an estimated rate of several gallons per minute (refer to [Appendix 1, Photograph 50](#)). System representatives had become aware of the leak on the morning of February 14th and were in the process of pumping the remaining water in the tank into the distribution system while also draining the tank water via a drain line (refer to [Appendix 1, Photograph 51](#)). It was unclear if the tank leak presented a threat to the finished water quality that was being sent to the distribution system. There was an approximately one-inch void between the tank bottom plate and the concrete foundation tank (refer to [Appendix 1, Photograph 52](#)). Caulking was not visible at the base of the tank. In terms of security, there was graffiti that had been painted over on the side of the tank, and System representatives indicated that they had experienced challenges with trespassers in the past. The tank's ladder lacked a ladder shield and extended to the ground (refer to [Appendix 1, Photograph 53](#)). The chlorine injection vault at the base of the tank was flooded (refer to [Appendix 1, Photograph 54](#)).

The Stephens Pump Station has three pumps, one of which was out of service due to a pump motor that had been removed for maintenance (refer to [Appendix 1, Photograph 55](#)). Of the two remaining in-service pumps, System representatives indicated that the 1,350 GPM pump was the primary pump and the 2,500 GPM pump was a backup pump that hadn't been used in approximately 20 years. System representatives stated that both groundwater wells were operational. Components of the well motor for well G0910006U had various unattached electrical wires. Additionally, it was unclear if the food-grade oil barrel used for lubrication at the well contained oil (refer to [Appendix 1, Photograph 56](#)). There were also two sand separators present at the Stephens site used to support the wells (refer to [Appendix 1, Photograph 57](#)).

The chlorine storage and injection room were observed at the Stephens site. The door to the chlorine room lacked a crash bar and observation window. The room also lacked an alarm system, and a self-contained breathing apparatus or supplied air respirator was not present outside of the room. A threaded hose tap without backflow prevention was observed extending from a finished water line in the chlorine room (refer to [Appendix 1, Photograph 58](#)). During the inspection, the chlorination pump had been manually turned off (unplugged and closed valve) due to the water leak from the tank (refer to [Appendix 1, Photograph 59](#)).

Fairview Elevated Tower

The 1 MG elevated Fairview Tower was observed next. The tower was surrounded by a locked perimeter fence with barbed wire. There were multiple small tree branches growing through the ground near the base of the tank, as well as along the fence surrounding the tower (refer to Appendix 1, Photographs 60 and 61). When this observation was made to System representatives, the trees and branches were removed (refer to Appendix 1, Photographs 62 and 63).

Hydrant Flushing

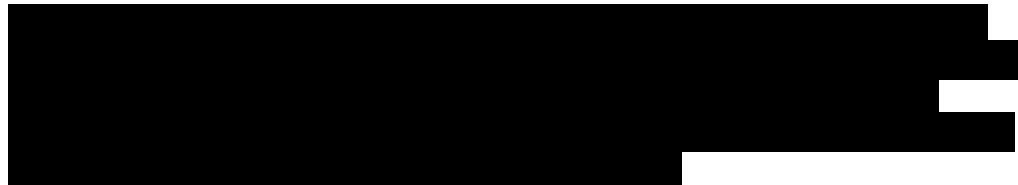
As a component of the inspection, the EPA Inspection Team observed a hydrant flushing at the “3300 Mimosa @ Cypress G Rd North Side” hydrant. An operator completed a flushing log during the flushing event (refer to Appendix 1, Photograph 64). A dechlorination diffuser was attached to the hydrant prior to the beginning of the flush. At the start of the flushing event, the water was slightly cloudy but became clear within a minute (refer to Appendix 1, Photograph 65). A Total Chlorine measurement, obtained by the operator after the hydrant had been flushing for multiple minutes, documented a total chlorine residual of 2.95 mg/L (refer to Appendix 1, Photograph 66).

Section III – OBSERVATIONS

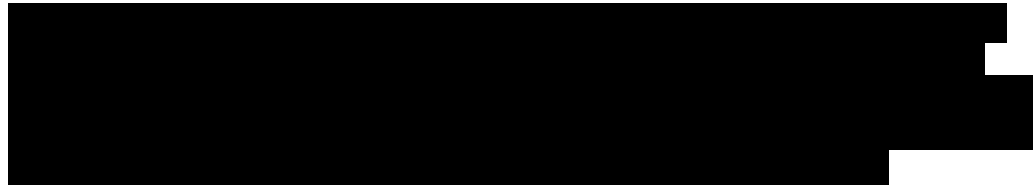
Asset Management



Observation 1.



Observation 2.



The following observations pertain to the SDWA and Texas Administrative Code (TAC) Title 30, Part 1, Chapter 290, Subchapter D¹.

Asset Management

Observation 3. The City does not have a formal computerized maintenance management system (CMMS) or asset management program (AMP) for the treatment plants or the distribution system. Ongoing maintenance activities in the distribution system are tracked through a City-developed work order system created using Microsoft Access,

¹ TAC Title 30, Part 1, Chapter 290, Subchapter D can be found at the following link:
[https://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=290&sch=D&rl=Y](https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=290&sch=D&rl=Y)

and the City utilizes a written inventory to track warehoused parts used to make repairs in the distribution system. Preventative and corrective maintenance activities are not formally tracked at either the conventional treatment plant or the UF/RO plant. The City has redundant equipment (i.e., pumps, filters, EDR membranes, UF strainers, RO units etc.) and backup equipment such as chemical injection pumps, but maintenance activity associated with the equipment is not formally tracked using a CMMS.

Work Order Log Sheets/Call Logs

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.46(f) states, “Operating records and reports. All public water systems must maintain a record of water works operation and maintenance activities and submit periodic operating reports.”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.46(f)(1) states, “The public water system's operating records must be organized, and copies must be kept on file or stored electronically.”

Observation 4. The System maintains hard copy “Work Order Log Sheets” containing daily logs of customer calls/complaints, but they lack organization and detail regarding the nature of the complaint, the specific problem being reported, and if/when the problem was resolved based on subsequent evaluation. Based on the lack of information provided in the call logs reviewed by the EPA Inspection Team, it is unclear what the true impact was on the potable water or if any of these complaints represent a threat to consumer health based on finished water quality.

Hydrant Flushing

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.46(l) states “Flushing of mains. All dead-end mains must be flushed at monthly intervals. Dead-end lines and other mains shall be flushed as needed if water quality complaints are received from water customers or if disinfectant residuals fall below acceptable levels as specified in §290.110 of this title.”

Observation 5. Based on records reviewed by the EPA Inspection Team, the System was not flushing all dead-end mains in the distribution system at monthly intervals (refer to [Appendix 2, Exhibit 4](#)). According to 12 months’ worth of Dead End Main Flushing 2023 reports, monthly flushing routes, and monthly total coliform monitoring reports from 2023, multiple hydrants were repeatedly not flushed each month (for example, 3800 Town Center - Home Depot and Hilltop Dr @ Premium Storage), and the comments entered for these hydrants stated “DNF [did not flush]- metered,” “DNF has meter on it,” or just “DNF.” Additionally, one hydrant (5100 Marshall St.) was repeatedly not flushed in 2023 because it was “seized up” or “too hard to open.” It was unclear to the EPA Inspection Team if the City is referring to a valve stem for hydrant activation or if the hydrant caps are seized/too difficult to open.

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.46(d)(2) states, “The disinfection equipment shall be operated to maintain the following minimum disinfectant residuals in each finished water storage tank and throughout the distribution system at all times:

- A) a free chlorine residual of 0.2 milligrams per liter (mg/L); or

- B) a chloramine residual of 0.5 mg/L (measured as total chlorine) for those systems that distribute chloraminated water.”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.110(a) states, “Applicability. All public water systems shall properly disinfect water before it is distributed to any customer and shall maintain acceptable disinfectant residuals within the distribution system.”

Observation 6. In the dead-end flushing reports from 2023, the EPA Inspection Team observed at least one example of a hydrant flushing colorimeter result that showed a Total Chlorine residual that was not at least 0.5 mg/L (Bob Utter Ford). The flushing reports also document multiple hydrant flushing events during which Total Chlorine values were lower than expected (<1.0 mg/L) over the course of multiple months (for example, 1915 Hwy 82 @ Dr Pepper). In one instance, a Total Chlorine sample at a hydrant (1604 Ann Ave) was <1.0 mg/L, and “High Water Age” was written in the comment field. The hydrant flushing summary report from November 2023 contains an example of each of these observations (refer to Appendix 2 Exhibit 4, Abbreviated November 2023 Hydrant Flushing Summary).

Conventional Water Treatment Plant

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.42(c)(4) states, that “All plant piping shall be constructed to minimize leakage. No cross-connection or interconnection shall be permitted to exist between a conduit carrying potable water and another conduit carrying raw water or water in a prior stage of treatment.”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.42(13) states, “The identification of influent, effluent, waste backwash, and chemical feed lines shall be accomplished by the use of labels or various colors of paint. Where labels are used, they shall be placed along the pipe at no greater than five-foot intervals. Color coding must be by solid color or banding. If bands are used, they shall be placed along the pipe at no greater than five-foot intervals.”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.46(m) states, “Maintenance and housekeeping. The maintenance and housekeeping practices used by a public water system shall ensure the good working condition and general appearance of the system's facilities and equipment. The grounds and facilities shall be maintained in a manner so as to minimize the possibility of the harboring of rodents, insects, and other disease vectors, and in such a way as to prevent other conditions that might cause the contamination of the water.”

Observation 7. The following observations were made regarding the status of various assets at the conventional water treatment plant, which was offline during the inspection (and had been since December 2022):

- a. There were three chemical injection ports into the raw water influent line, and the only port that had a chemical line attached to it (the copper sulfate line) was unlabeled.
- b. Water was leaking into the conventional plant pre-sedimentation basin at a rate of approximately a few gallons per minute on the first day of the inspection even though the influent gate valve leading to the basin was supposed to be closed, indicating a lack of

maintenance on the valve (refer to [Appendix 1, Photographs 2 and 3](#)). The water was draining to the sanitary sewer through an open gate in the corner of the basin. This gate was designed to drain the basin as well as to remove solids as required. When System representatives were made aware of the leak, the valve was fully closed, and the leak stopped. A potential cross connection between the sanitary sewer and this basin was not evaluated but could potentially present a concern. It was unclear to the EPA Inspection Team if there was an intermediate asset between the pre-sedimentation basin and the sanitary sewer, or if the pre-sedimentation basins drained to the on-site sludge ponds.

- c. The static mixing lines downstream of the HCL addition were in the process of being replaced due to heavy corrosion (refer to [Appendix 1, Photograph 4](#)). System representatives stated that the corrosion had led to structural failure of the lines while the plant was operating, which resulted in water leaking from the lines.
- d. In the chemical storage room, the secondary containment wall that surrounded the copper sulfate day tanks was damaged (refer to [Appendix 1, Photograph 12](#)). The wall was repaired after this observation was made to System representatives, and a photo was provided to the EPA Inspection Team (refer to [Appendix 4, Follow-Up Material](#)). Additionally, the copper sulfate day tanks still contained potassium permanganate labels, even though the tanks were no longer used to hold potassium permanganate (since it is no longer used at the plant) (refer to [Appendix 1, Photograph 11](#)).

Membrane (UF/RO) Treatment Plant

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.42(13) states, “The identification of influent, effluent, waste backwash, and chemical feed lines shall be accomplished by the use of labels or various colors of paint. Where labels are used, they shall be placed along the pipe at no greater than five-foot intervals. Color coding must be by solid color or banding. If bands are used, they shall be placed along the pipe at no greater than five-foot intervals.”

Observation 8. The following observations were made regarding the status of various assets at the membrane (UF/RO) water treatment plant:

- a. Three unlabeled chemical injection points were upstream of the RO trains. One of the injection ports didn’t have a hose (refer to [Appendix 1, Photographs 17 and 18](#)). System representatives stated the HCL line experienced a failure approximately a week earlier.
- b. Three unlabeled chemical injection points were present on the 84-inch produced water line that conveys water from the UF/RO break tank to the North and South clearwells (refer to [Appendix 1, Photograph 20](#)). Operators were unsure which injection point was for which chemical. A process flow diagram of the UF/RO treatment plant provided by TCEQ indicates that fluoride, phosphate, and caustic are injected following the finished water flow meter. However, the EPA Inspection Team observed that one of the chemical injection points was positioned upstream of the flow meter and the other two were downstream of the flow meter.

Finished Water Storage

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.43(c), Design and construction of clearwells, standpipes, ground storage tanks, and elevated tanks, states “All facilities for potable water storage shall be covered and designed, fabricated, erected, tested, and disinfected in strict accordance with current American Water Works Association (AWWA) standards and shall be provided with the minimum number, size and type of roof vents, man ways, drains, sample connections, access ladders, overflows, liquid level indicators, and other appurtenances as specified in these rules. The roof of all tanks shall be designed and erected so that no water ponds at any point on the roof and, in addition, no area of the roof shall have a slope of less than 0.75 inch per foot.”

Observation 9. The following observations were made regarding the clearwells and high service pump station/finished water meter vault at the end of the conventional and membrane (UF/RO) surface water treatment plants:

- a. There was no screen covering a drainpipe that extended from the inside of one of the vault-style hatchways on top of the North clearwell (refer to [Appendix 1, Photograph 25](#)). A screen was placed over the drainpipe after this observation was made to System representatives, and a photo was provided to the EPA Inspection Team (refer to [Appendix 4, Follow-Up Material](#)).
- b. There were ultrasonic level sensors with electrical equipment on the surface of the clearwells that contained electrical conduits with openings, providing direct access for contaminants to enter the clearwells (refer to [Appendix 1, Photograph 23](#)). Additionally, it was unclear if there was a sealed gasket beneath the equipment, and there were gaps beneath the platform that the equipment was positioned on (refer to [Appendix 1, Photograph 24](#)). After the electrical conduit openings were observed, System representatives covered the conduit with electrical tape and provided a photo to the EPA Inspection Team (refer to [Appendix 4, Follow-Up Material](#)).
- c. There was heavy corrosion on the metal pads that multiple high service pumps were positioned on, and there were cracks in the concrete seal around the base of the pump shafts, creating potential access to the finished water in the pump station/finished water meter vault (i.e., the vault where finished water is drawn from prior to being pumped into the distribution system) (refer to [Appendix 1, Photograph 28](#)). The EPA Inspection Team observed System representatives repairing the cracks/metal bases of the pump shafts on the second day of the inspection, after this observation was made to System representatives.

Fairview Site

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.43(c), Design and construction of clearwells, standpipes, ground storage tanks, and elevated tanks, states “All facilities for potable water storage shall be covered and designed, fabricated, erected, tested, and disinfected in strict accordance with current American Water Works Association (AWWA) standards and shall be provided with the minimum number, size and type of roof vents, man ways, drains, sample connections, access ladders, overflows, liquid level indicators, and other appurtenances as specified in these rules. The roof of all tanks shall be designed and erected so that no water ponds at any point on the roof and, in addition, no area of the roof shall have a slope of less than 0.75 inch per foot.”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.43(c)(1) states, “Roof vents shall be gooseneck on roof ventilator and be designed by the engineer based on the maximum outflow from the tank. Vents shall be installed in strict accordance with current AWWA standards and shall be equipped with approved screens to prevent entry of animals, birds, insects, and heavy air contaminants. Screens shall be fabricated of corrosion-resistant material and shall be 16-mesh or finer. Screens shall be securely clamped in place with stainless or galvanized bands or wires and shall be designed to withstand winds of not less than tank design criteria (unless specified otherwise by the engineer).”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.43(c)(2) states, “All roof openings shall be designed in accordance with current AWWA standards. If an alternate 30-inch diameter access opening is not provided in a storage tank, the primary roof access opening shall not be less than 30 inches in diameter. Other roof openings required only for ventilating purposes during cleaning, repairing, or painting operations shall be not less than 24 inches in diameter or as specified by the licensed professional engineer. An existing tank without a 30-inch in diameter access opening must be modified to meet this requirement when major repair or maintenance is performed on the tank. Each access opening shall have a raised curbing at least four inches in height with a lockable cover that overlaps the curbing at least two inches in a downward direction. Where necessary, a gasket shall be used to make a positive seal when the hatch is closed. All hatches shall remain locked except during inspections and maintenance.”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.42(d)(2)(A) states, “Vacuum breakers must be provided on each hose bibb within the plant facility.”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.42(e)(4)(A) states, “When chlorine gas is used, a full-face self-contained breathing apparatus or supplied air respirator that meets Occupational Safety and Health Administration (OSHA) standards for construction and operation, and a small bottle of fresh ammonia solution (or approved equal) for testing for chlorine leakage shall be readily accessible outside the chlorinator room and immediately available to the operator in the event of an emergency.”

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.46(m)(1)(A) states, “Ground and elevated storage tank inspections must determine that the vents are in place and properly screened, the roof hatches closed and locked, flap valves and gasketing provide adequate protection against insects, rodents, and other vermin, the interior and exterior coating systems are continuing to provide adequate protection to all metal surfaces, and the tank remains in a watertight condition.”

Observation 10. The following observations were made in regard to various assets at the Fairview site:

- a. The bases of the vent structures to the Fairview Tank were constructed out of multiple pieces of sheet metal and had voids in areas, allowing grass to grow through (refer to Appendix 1, Photograph 33). The vent structures appeared to be covering a pipe that was encased by a concrete pad. No sanitary seal or gasket material was observed between the metal bases and the concrete pads that the vents were positioned on. The concrete pads supporting the vent structures had multiple ant hills and ants positioned under the sheet metal structures (refer to Appendix 1, Photograph 34).
- b. Manholes/accessways on top of the Fairview Tank did not provide adequate protection to the finished water. The EPA Inspection Team observed the following potential threats to the finished water quality:

- It was unclear if a positive seal was being formed around the lids of the manholes. A silicon caulking had been used around the rim of the manhole covers, but it was deteriorated in some places (refer to [Appendix 1, Photograph 37](#)). Duct-tape was used in some areas around the manhole crown but was peeling off during the inspection.
 - Roots were seen growing through the inside of the concrete structures of the manholes, and some were touching the surface of the water (refer to [Appendix 1, Photograph 39](#)). There was also heavy corrosion and condensation (moisture) on the metal components of the manholes (refer to [Appendix 1, Photograph 38](#)).
 - The manhole structures were covered by external cylindrical metal lids (refer to [Appendix 1, Photograph 36](#)). The lids lacked sealed gaskets, and dirt was built up around the sides of the elevated manholes beneath the lids. Ants were also observed crawling under the lids.
 - The manhole covers had varying heights associated with the dirt and grass in the area, and some areas had less than four inches of clearance (refer to [Appendix 1, Photograph 35](#)).
 - The manhole structures appeared to be in lower laying areas that appeared to pond water during wet weather events (refer to [Appendix 1, Photograph 40](#)).
- c. There were multiple openings leading into the Fairview Tank that provided potential contamination concerns to the finished water supply:
- There was a heavily corroded metal pipe inside of the Fairview Tank that was visible from one of the manhole hatchways (refer to [Appendix 1, Photograph 41](#)). Operators indicated that the metal pipe was the end of an old line that extended from a small surge tank that used to be fed by a groundwater well that was no longer present at the site. The pipe did not appear to be plugged, leaving an open pipe into the tank.
 - There was a void in the tank wall next to the corroded metal pipe (refer to [Appendix 1, Photograph 42](#)). It was unclear if the void was a wall failure or situation where the historic pipe settled, creating the void. The void provided direct access to the finished water supply.
- d. There was a gap between the base of the well pedestal and the well pad (refer to [Appendix 1, Photograph 45](#)).
- e. There was an unattached open port inside of the chlorine injection vault next to the Fairview Tank, and operators were unsure of the port's use (refer to [Appendix 1, Photograph 48](#)). There were also signs of past flooding and/or water accumulation inside of the vault (i.e., water marks, mud cracks).
- f. A tank inspection report was conducted by Texas Tank Services on January 18th, 2023, and multiple observations that were made by the EPA Inspection Team (including corrosion of tank components and failure to meet tank hatchway requirements) were included in the report. The report was provided to the EPA Inspection Team and is included in [Appendix 2, Exhibit 5, Contractor Fairview Tank Inspection Report 1/18/2023](#).
- g. There was no full-face self-contained breathing apparatus outside of the chlorine storage room at the Fairview site. Additionally, the door of the chlorine storage room at the Fairview site lacked a crash bar and observation window (refer to [Appendix 1, Photograph 46](#)). No alarm system was present to indicate a chlorine leak inside of the room.

- h. A threaded hose tap without backflow prevention extended off of a finished water line (used to supply carry water for chlorine injection) inside of the chlorine storage room at the Fairview site (refer to [Appendix 1, Photograph 47](#)). The hose was disconnected upon The EPA Inspection Team's field discussion with City staff.

Stephens Site

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.43(c) Design and construction of clearwells, standpipes, ground storage tanks, and elevated tanks, states "All facilities for potable water storage shall be covered and designed, fabricated, erected, tested, and disinfected in strict accordance with current American Water Works Association (AWWA) standards and shall be provided with the minimum number, size and type of roof vents, man ways, drains, sample connections, access ladders, overflows, liquid level indicators, and other appurtenances as specified in these rules. The roof of all tanks shall be designed and erected so that no water ponds at any point on the roof and, in addition, no area of the roof shall have a slope of less than 0.75 inch per foot."

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.42(d)(2)(A) states, "Vacuum breakers must be provided on each hose bibb within the plant facility."

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.43(e), Facility security, states "All potable water storage tanks and pressure maintenance facilities must be installed in a lockable building that is designed to prevent intruder access or enclosed by an intruder-resistant fence with lockable gates. Pedestal-type elevated storage tanks with lockable doors and without external ladders are exempt from this requirement. The gates and doors must be kept locked whenever the facility is unattended."

Title 30, Part 1, Chapter 290, Subchapter D, Rule §290.42(e)(4)(A) states, "When chlorine gas is used, a full-face self-contained breathing apparatus or supplied air respirator that meets Occupational Safety and Health Administration (OSHA) standards for construction and operation, and a small bottle of fresh ammonia solution (or approved equal) for testing for chlorine leakage shall be readily accessible outside the chlorinator room and immediately available to the operator in the event of an emergency."

Observation 11. The following observations were made in regard to assets at the Stephens site:

- a. Water was leaking from the base of the Stephens Tank due to a structural failure (refer to [Appendix 1, Photograph 50](#)). The failure occurred on the morning of February 14, 2024. Finished water was flowing into an overflow drain that ultimately discharged into a storm sewer (refer to [Appendix 1, Photograph 51](#)). Due to the leak, operators had opened the drain valve in the bottom of the tank which also discharged to the overflow drain. While the tank was draining, water was also being pumped into the distribution system. It was unclear if the tank leak presented a threat to the finished water quality that was being sent to the distribution system.
- b. There were various locations surrounding the base of the tank where there was an approximately inch-wide void between the bottom plate of the tank and the concrete foundation (refer to [Appendix 1, Photograph 52](#)).

- c. There was graffiti that had been painted over on the side of the Stephens Tank. System representatives indicated that they had experienced challenges with intruders at the Stephens site in the past. There were multiple trees growing around/through the fence line at the Stephens site, potentially compromising the intruder resistance of the fence (refer to Appendix 1, Photograph 49). The Stephens tank ladder lacked a locked ladder shield, and the ladder extended all the way to the ground.
- d. The chlorine injection vault at the base of the Stephens Tank was flooded (refer to Appendix 1, Photograph 54).
- e. There was no full-face self-contained breathing apparatus outside of the chlorine storage room at the Stephens site. Additionally, the door of the chlorine storage room at the Stephens site lacked a crash bar and observation window. No alarm system was present to indicate a chlorine leak inside of the room.
- f. A threaded hose tap without backflow prevention extended off of a finished water line (used to supply carry water for chlorine injection) inside of the chlorine storage room at the Stephens site (refer to Appendix 1, Photograph 58).

Closing Conference

On February 14, 2024 the EPA Inspection Team met with Jim Cross, the City of Sherman Water System Manager, as well as other City of Sherman PWS representatives for a closing conference at approximately 4:00 p.m. The EPA Inspection Team reviewed observations with the Facility representatives and explained that the observations were preliminary and did not constitute any formal compliance determinations.

Section IV – FOLLOW UP

The Lead and Copper Sampling Plan, dead-end flushing program, as well as the Fairview Tank inspection documents were received following the conclusion of the inspection on February 14, 2024. Photos of the repaired secondary containment wall in the chemical storage room, screens that were placed over the drainage port at the North clearwell, and electrical tape placed over the electrical conduit at the South clearwell were provided to the EPA Inspection Team on February 14, 2024, the second day of the inspection. The Stephens Tank was drained and inspected on February 19, 2024 to find the source of the leak. A summary of the findings (corrosion between the bottom plate of the tank and the mud valve used to drain the tank) was sent to the EPA Inspection Team on March 5, 2024 (refer to Appendix 4, Follow-Up Material).

Section V – LIST OF APPENDICES

Appendix 1 – Photograph Log

Appendix 2 – Exhibit Log

- Exhibit 1 - Main Water System Hydraulic Profile
- Exhibit 2 - Conventional Plant Process Flow Diagram

- Exhibit 3 - Membrane (UF/RO) Plant Process Flow Diagram
- Exhibit 4 - Abbreviated November 2023 Hydrant Flushing Summary
- Exhibit 5 - Contractor Fairview Tank Inspection Report 1/18/2023
- Exhibit 6 – Ongoing Corrective Maintenance List

Appendix 3 – 2016 Sherman LCR Sampling Plan

Appendix 4 – Follow-Up Material

Appendix 1

Photograph Log

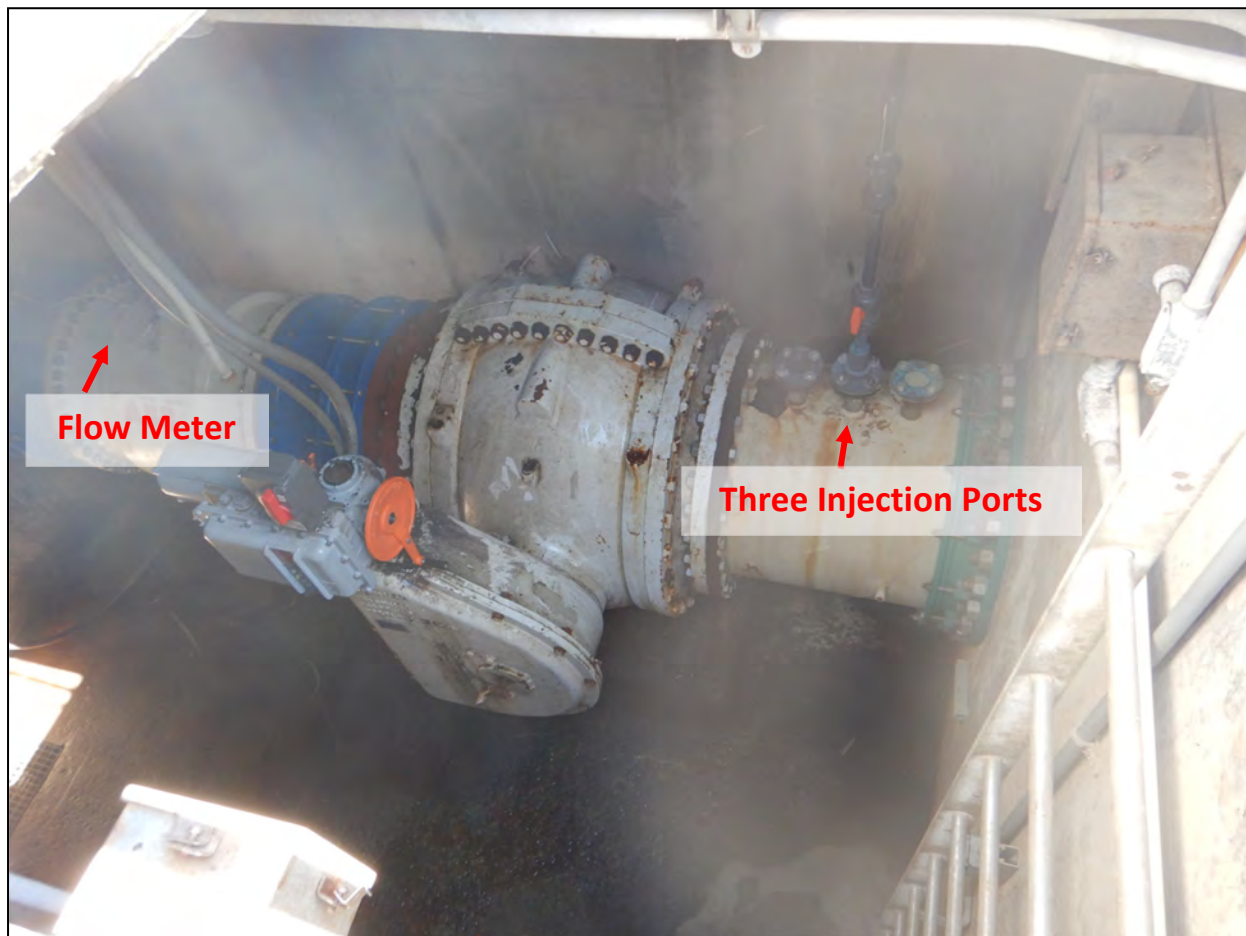


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 1

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 1. 2/13/2024 12:53 PM DSCN9214.JPG

Conventional Plant, Raw Water Meter Vault View of the raw water influent line inside the raw water meter vault. There were three injection ports present on the line but only one had a chemical line attached to it (copper sulfate). The other two injection lines had been disconnected. The injection ports were downstream of the flow meter.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 2

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 2. 2/13/2024 1:00 PM DSCN9217.JPG

Conventional Plant, Pre-Sedimentation Basin View of water leaking into the influent end of the pre-sedimentation basin at the conventional plant at an estimated rate of a few gallons per minute. System representatives suggested that the raw water valve might have been leaking or not completely closed.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 3

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 3. 2/13/2024 1:01 PM IMG_0005.JPG

Conventional Plant, Pre-Sedimentation Basin View of water flowing through a partially open gate. It was unclear to the EPA Inspection Team how the sanitary sewer was connected to the basin or if there was a structure between the basin and the sanitary sewer. System representatives stated that the water flowed to the sanitary sewer. The EPA Inspection Team did not evaluate cross-connection controls associated with this line.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 4

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 4. 2/13/2024 1:07 PM DSCN9222.JPG

Conventional Plant, In-Line Static Mixers View of the vault containing the two, inline static mixer lines. There are two parallel lines, an 18-inch line and a 36-inch line. The System was in the process of replacing the 36-inch due to a structural failure caused by heavy corrosion. A removed section of the 36-inch line was next to the vault. System representatives stated that during normal operation, HCl is injected immediately upstream of the mixers.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 5

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 5. 2/13/2024 1:16 PM DSCN9229.JPG

Conventional Plant, Flocculation Basins View inside one of the flocculation basins. The interior metal components were corroded. System representatives indicated that the components would be replaced before the conventional plant was put back online.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 6

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 6. 2/13/2024 1:19 PM DSCN9230.JPG

Conventional Plant, Sedimentation Basin View of one of the two parallel sedimentation basins. The solids-removing infrastructure had been removed and the basins were being rehabilitated during the inspection. New flight and chain equipment is scheduled for installation.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 7

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 7. 2/13/2024 1:28 PM IMG_0020.JPG

Conventional Plant, Dual Media Filters View inside Filter No. 1. The structure had some concrete loss, and some aggregate was exposed.

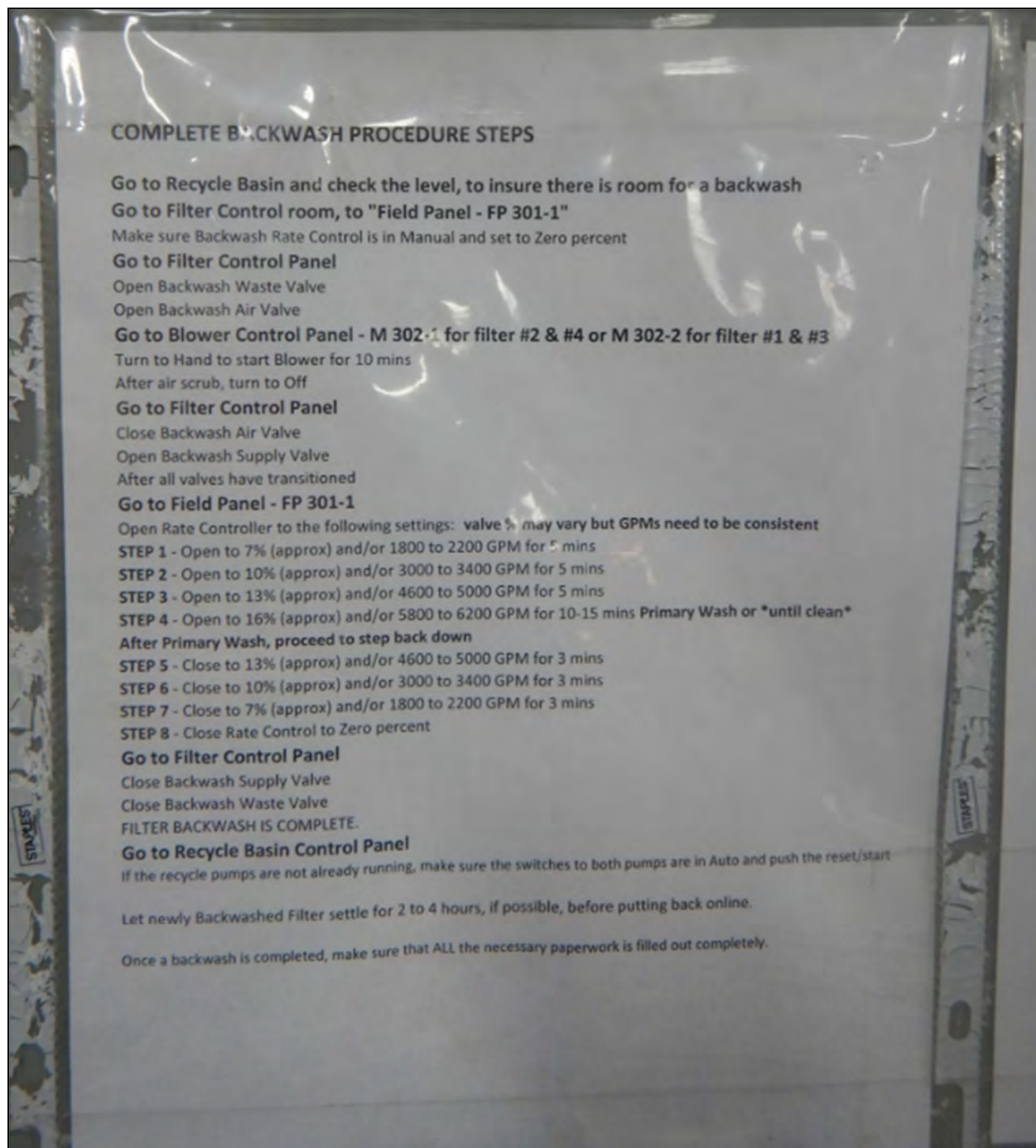


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 8

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 8. 2/13/2024 1:34 PM DSCN9244.JPG

Conventional Plant, Filter Backwash SOP View of a filter backwash SOP maintained inside the filter control room.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 9

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 9. 2/13/2024 1:29 PM DSCN9241.JPG

Backwash Water Storage Tank View of the 0.6 MG backwash water storage tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 10

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 10. 2/13/2024 1:59 PM DSCN9260.JPG

Conventional Plant, Pipe Gallery View of the chemical lines in the pipe gallery. The potassium permanganate line had been severed and therefore could not be used. There were multiple severed/disconnected chemical feed lines inside the pipe gallery in addition to the severed potassium permanganate line.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 11

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 11. 2/13/2024 2:29 PM DSCN9284.JPG

Conventional Plant, Chemical Storage Room View of one of the two labels on the two copper sulfate day tanks. The labels both said potassium permanganate even though potassium permanganate was no longer used in the treatment process.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 12

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 12. 2/13/2024 2:22 PM DSCN9280.JPG

Conventional Plant, Chemical Storage Room View of the secondary containment wall surrounding the two copper sulfate day tanks. The wall was damaged in one location. When this observation was made to System representatives, the wall was repaired (refer to [Appendix 4, Follow-Up Material](#)).

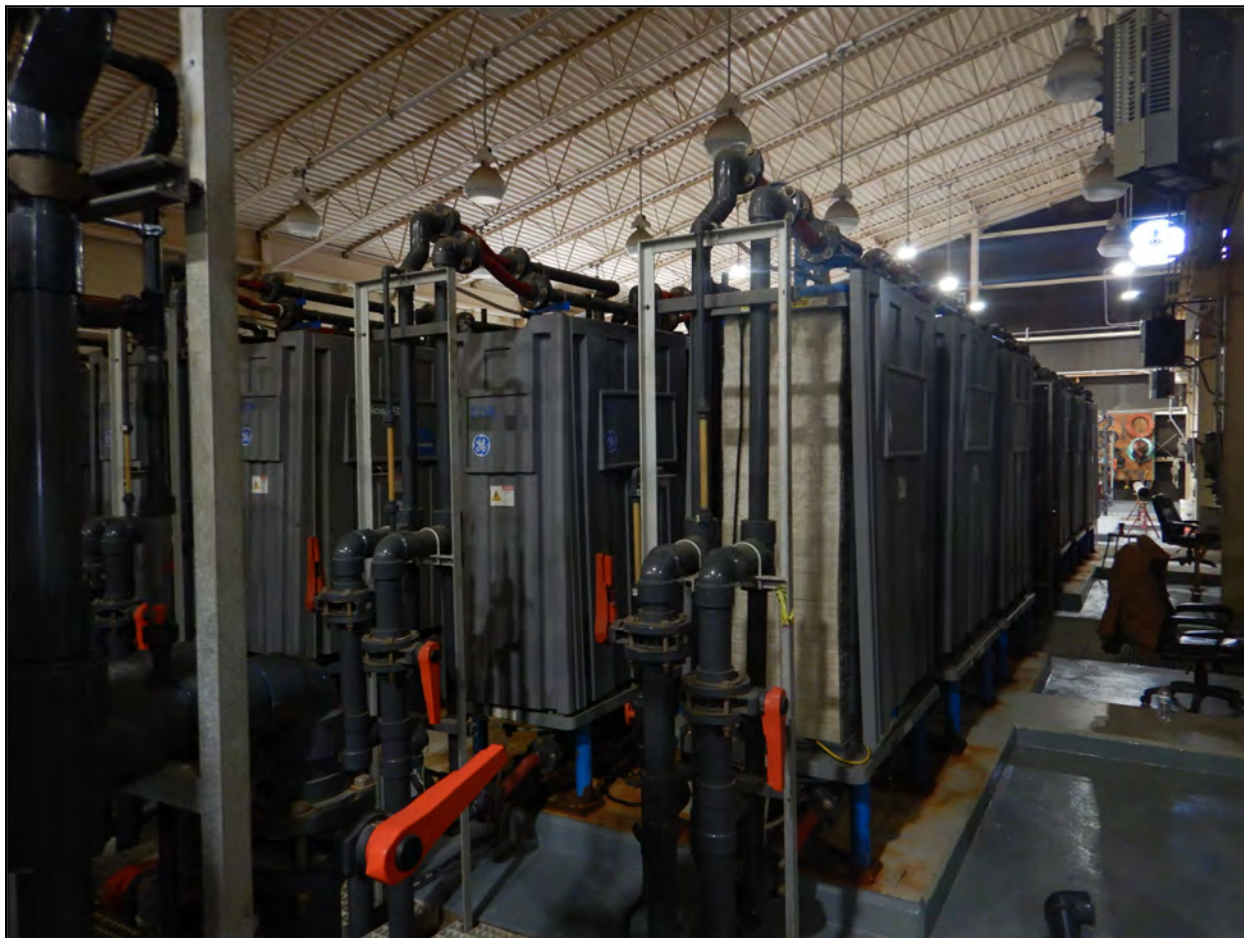


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 13

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 13. 2/13/2024 2:34 PM DSCN9289.JPG

Conventional Plant, EDR Units View of several of the EDR units. System representatives indicated that all of the EDR units were being rehabilitated prior to bringing the plant back online.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 14

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 14. 2/13/2024 3:00 PM DSCN9311.JPG

Membrane (UF/RO) Plant, UF Feed Pumps View of the five UF feed pumps at the UF/RO plant. The fifth pump (furthest to the right in this image) had been recently added to accommodate the upgraded treatment capacity at the plant. There was scaffolding supporting additional equipment upgrades at multiple areas inside the UF/RO plant.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 15

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 15. 2/13/2024 3:03 PM DSCN9313.JPG

Membrane (UF/RO) Plant, UF Strainers View of the UF strainers at the UF/RO plant.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 16

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 16. 2/13/2024 3:10 PM DSCN9317.JPG

Membrane (UF/RO) Plant, UF Units View of three of the five UF units at the UF/RO plant. Two additional UF units were being added during the inspection to accommodate the upgraded treatment capacity at the plant.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 17

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 17. 2/13/2024 3:25 PM IMG_0094.JPG

Membrane (UF/RO) Plant, RO Supply Line View of the three unlabeled chemical injection ports into the RO supply line that feeds UF permeate to the RO units. The line to the HCl port had failed and was disconnected. The line was in the process of being replaced.

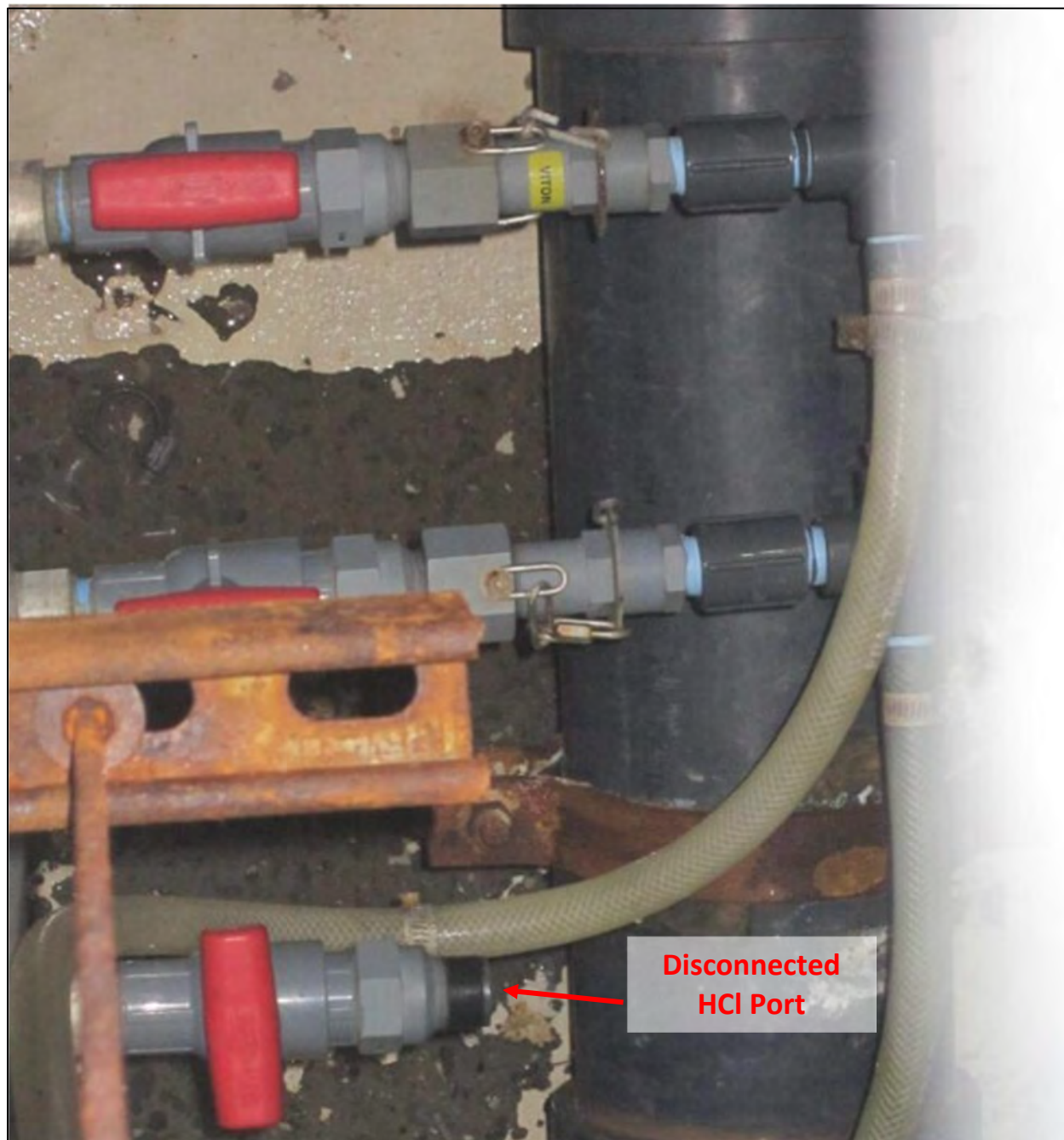


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 18

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 18. 2/13/2024 3:25 PM IMG_0095.JPG

Membrane (UF/RO) Plant, RO Supply Line Additional view of the three unlabeled chemical injection ports and the disconnected HCl line.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 19

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 19. 2/13/2024 3:31 PM DSCN9337.JPG

Membrane (UF/RO) Plant, RO Units View of two of the RO units at the UF/RO plant, including the new RO unit that was being constructed during the inspection.

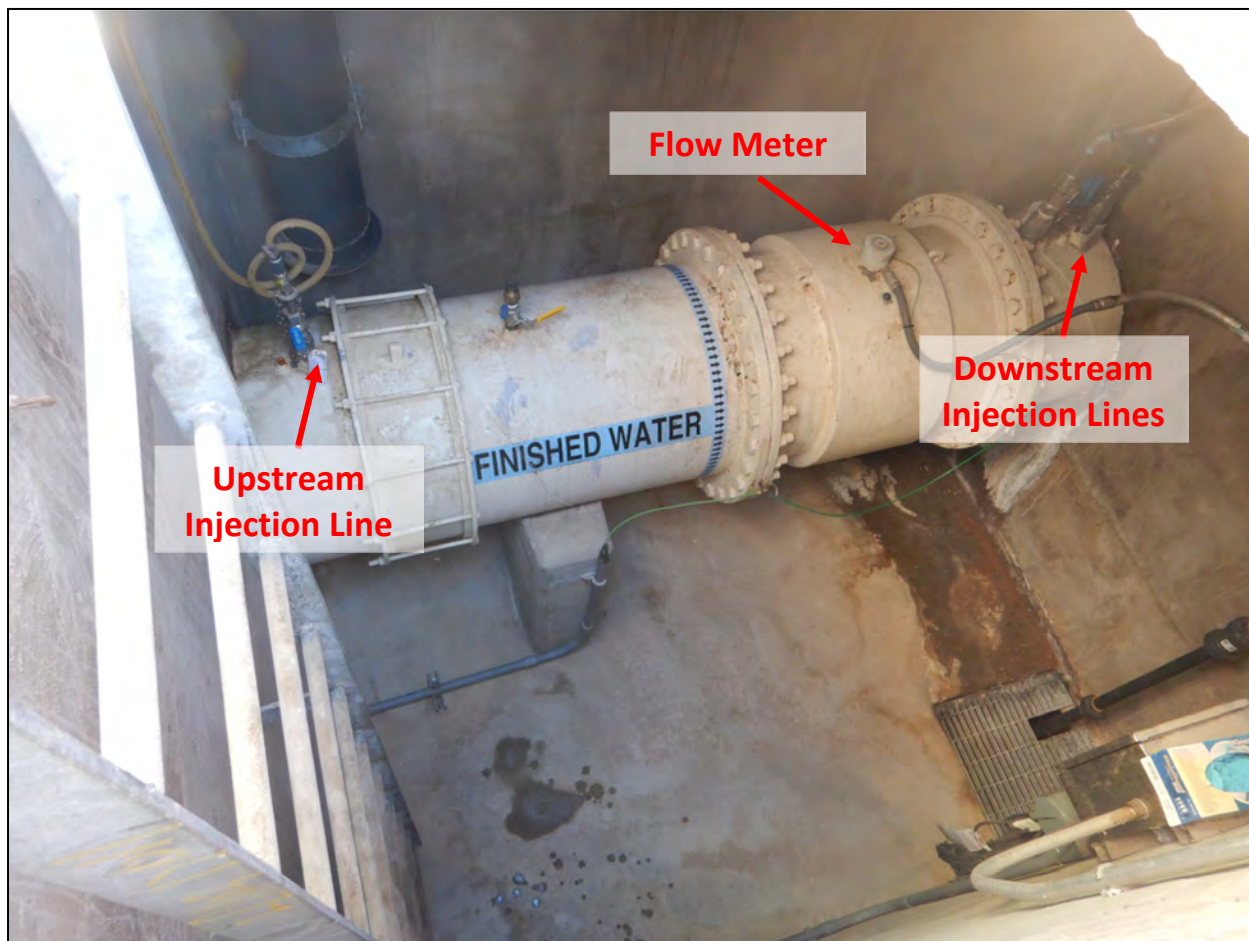


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 20

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 20. 2/13/2024 3:47 PM DSCN9347.JPG

Clearwell Meter Vault View inside the clearwell meter vault where produced water flows from the UF/RO plant into the North and South clearwells. There were three unlabeled chemical lines attached to the water line, one upstream of the flow meter and two downstream of the flow meter. Caustic, fluoride, and phosphate are injected into this line, but system representatives were unsure which chemical line injected which chemical.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 21

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 21. 2/13/2024 3:55 PM IMG_0114.JPG

North and South Clearwells View of the North and South clearwells.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 22

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 22. 2/13/2024 4:09 PM IMG_0124.JPG

North and South Clearwells View of cracks on the surface of the clearwells that appeared to have been repaired.

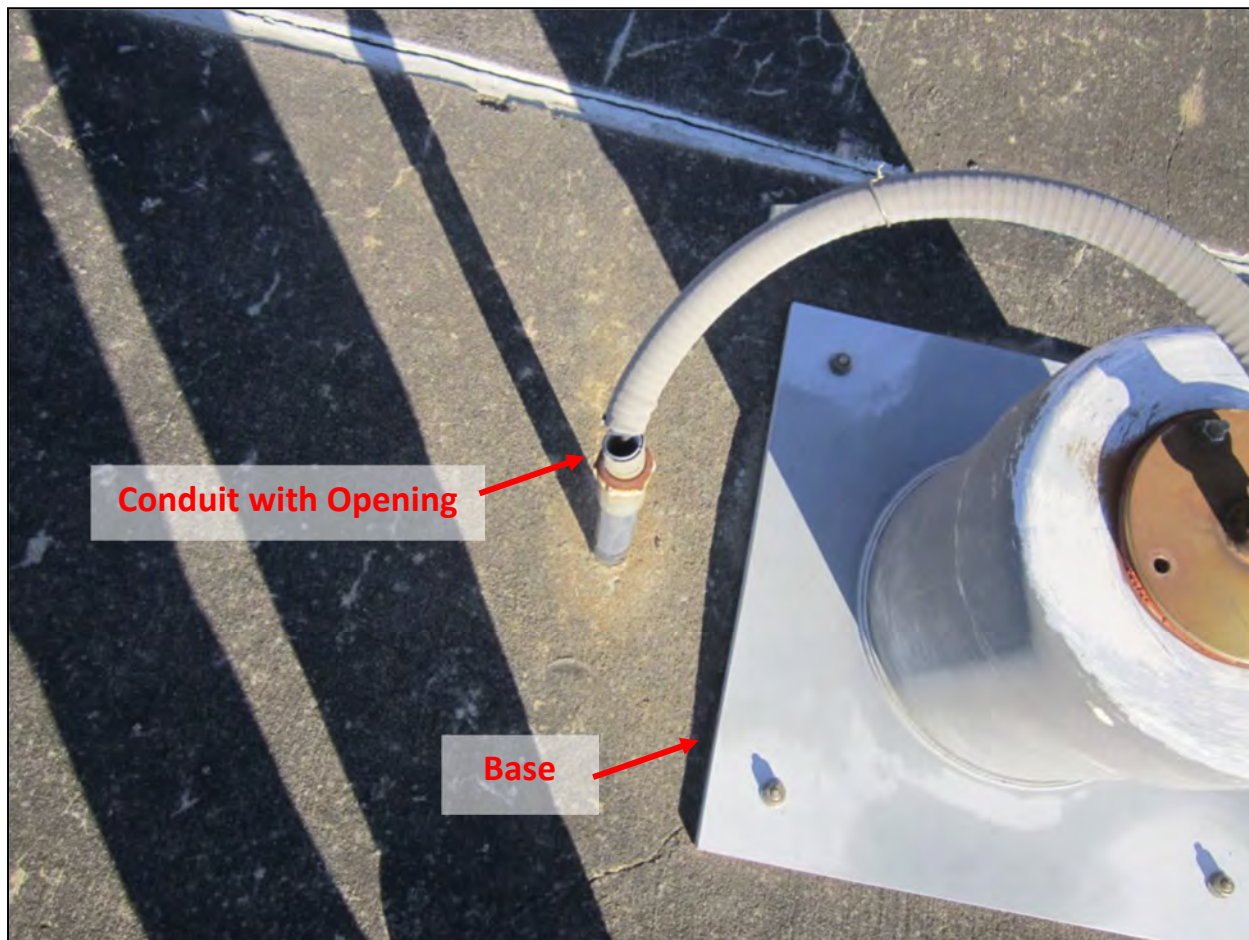


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 23

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 23. 2/13/2024 4:09 PM IMG_0126

North and South Clearwells View of a conduit for ultrasonic level sensor equipment on top of the North clearwell. There was a gap in the electrical conduit providing direct access to the water inside of the clearwell. When this observation was made to System representatives, the electrical conduit was covered in electrical tape (refer to [Appendix 4, Follow-Up Material](#)). A close-up view of the base can be seen in the next photograph.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 24

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 24. 2/13/2024 4:10 PM IMG_0131.JPG

North and South Clearwells View of the base of the equipment associated with the ultrasonic level indicator on top of the North clearwell. There was a gap between the base of the equipment and the top of the clearwell and it was unclear if a sealed gasket was present to prevent the entry of contaminants to the clearwell.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 25

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 25. 2/13/2024 4:03 PM DSCN9353.JPG

North and South Clearwells View of the vault-style hatchway leading to the clearwell and the uncovered drainage line extending off the side of the clearwell. The drainage line is for the interior of the vault-style hatchway. When this observation was made, System representatives placed a screen over the end of the line and provided a picture to the EPA Inspection Team (refer to [Appendix 4, Follow-Up Material](#)).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 26

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 26. 2/13/2024 4:11 PM DSCN9357.JPG

High Service Pump Station View of three of the five pumps at the high service pump station. One of the pumps is not visible in this image, and the other was removed for maintenance.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 27

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 27. 2/13/2024 4:14 PM DSCN9362.JPG

High Service Pump Station View of the pump platform where one of the high service pumps had been removed for maintenance. The platform for the removed pump was covered with tarp, plywood, and a sealant material to prevent contaminants from entering the finished water supply.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 28

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 28. 2/13/2024 4:11 PM DSCN9359.JPG

High Service Pump Station Close-up view of one of the metal bases of the high service pump motors. The bases were heavily corroded, and there were cracks between the metal base and the concrete seals; it was unclear to the EPA Inspection Team if there was a potential for contaminants to enter the finished water supply at this location.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 29

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 29. 2/14/2024 9:50 AM DSCN9395.JPG

Chlorine Storage and Injection Rooms View of the respirator on the outside wall of the chlorine storage room at the conventional and UF/RO plants.

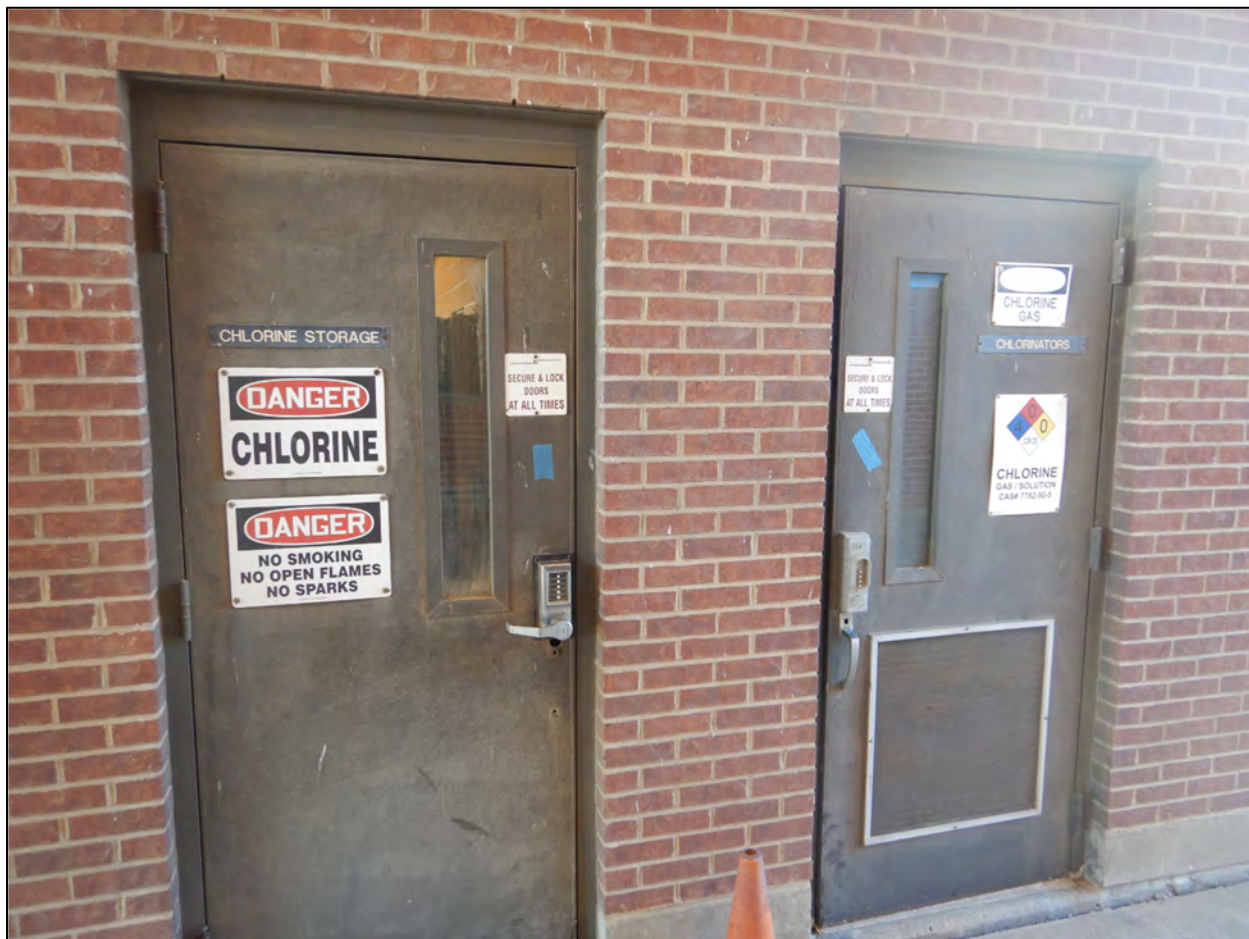


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 30

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 30. 2/14/2024 10:06 AM DSCN9404.JPG

Chlorine Storage and Injection Rooms View of the doors leading to the chlorine storage and injection rooms. The doors contained observation windows and crash bars.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 31

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 31. 2/14/2024 9:57 AM DSCN9399.JPG

Chlorine Storage and Injection Room View of the chlorine gas sensor positioned near the floor in the chlorine storage room at the conventional and UF/RO plants.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 32

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 32. 2/14/2024 10:45 AM DSCN9414.JPG

Fairview Pump Station View of the Fairview Pump Station. There was one, 2,000 gallon per minute (GPM) pump at the pump station, and the other had been removed for maintenance in October 2023. The pump pad for the removed pump was covered with plywood and a caulking seal.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 33

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 33. 2/14/2024 10:50 AM IMG_0016.JPG

Fairview Tank View of the base of one of the vents on top of the Fairview Tank. The bases of the vents were constructed of metal that appeared to have voids and lacked sanitary seals.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 34

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 34. 2/14/2024 10:50 AM IMG_0017.JPG

Fairview Tank Additional view of the base of one of the vents on top of the Fairview Tank. Dirt had accumulated beneath the metal, and ants were observed crawling under the metal.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 35

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 35. 2/14/2024 11:03 AM DSCN9427.JPG

Fairview Tank View of one manholes for accessing the interior of the Fairview Tank. The manhole was constructed of a metal ring and cover similar to a sanitary sewer manhole. The manhole structures were approximately 1 to 2 inches above the ground.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 36

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 36. 2/14/2024 11:01 AM DSCN9426.JPG

Fairview Tank View of one of the manhole structures that was covered in dirt. Also visible in this image is one of the metal lids that were covering the manhole structures. The lids lacked sealed gaskets. Ants were observed crawling under the lids.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 37

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 37. 2/14/2024 11:03 AM DSCN9429.JPG

Fairview Tank View of one of the manholes that provided access to the interior of the Fairview Tank. A silicon caulking had been used around the rim of the manhole covers, but it was deteriorated in some places. Duct tape was also used in some areas around the manhole crown but was peeling off during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 38

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 38. 2/14/2024 11:19 AM IMG_0037.JPG

Fairview Tank View inside of one of the manholes at the Fairview Tank. Corrosion, moisture, and roots were observed on the interior surface of the manhole structures.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 39

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 39. 2/14/2024 11:19 AM IMG_0041.JPG

Fairview Tank View of roots growing through the manhole structure toward the water surface inside the Fairview Tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 40

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 40. 2/14/2024 10:52 AM DSCN9421.JPG

Fairview Tank Close-up view of low area with evidence of ponding adjacent to two manholes for the Fairview Tank. The two manholes provide access to the interior of the Fairview Tank.

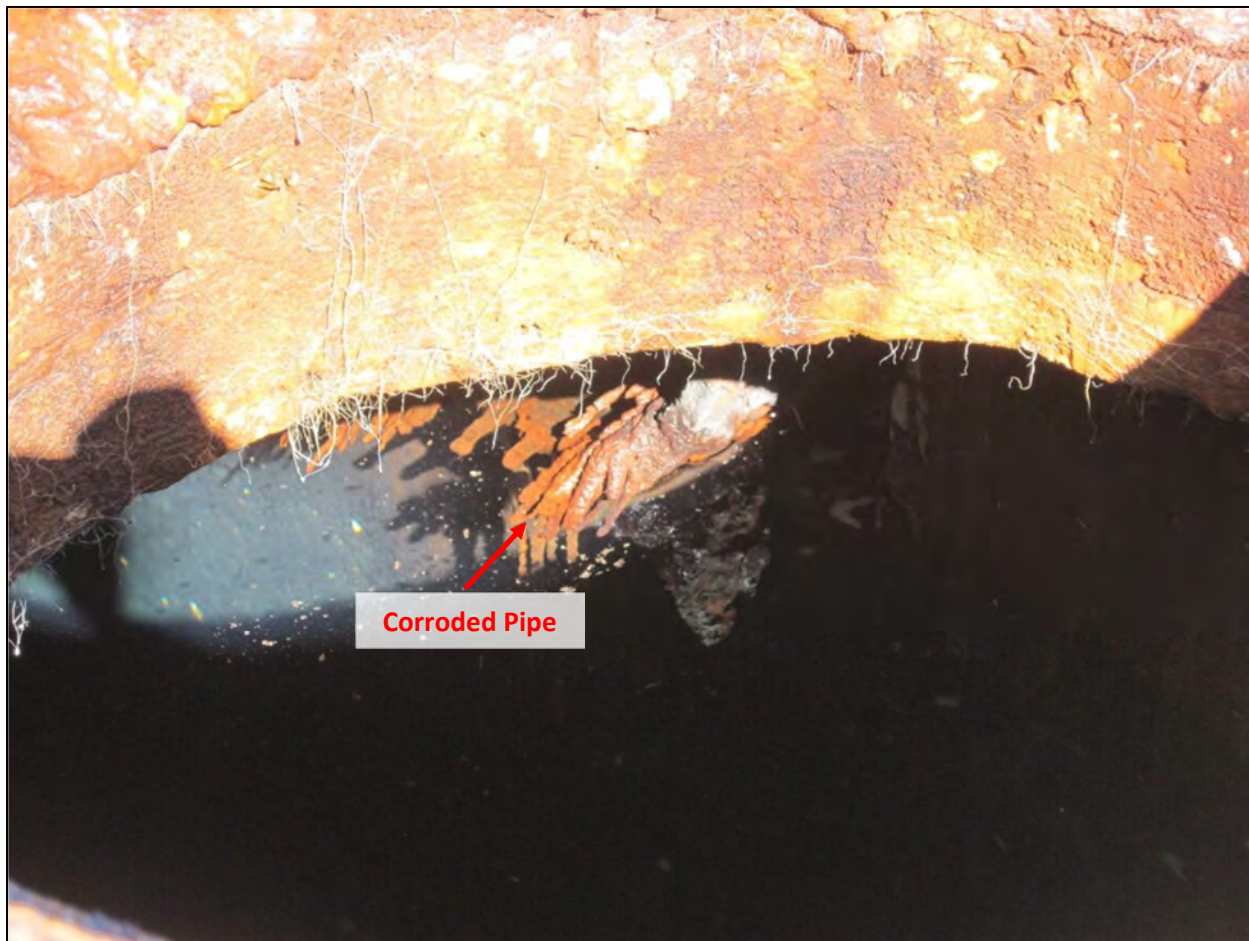


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 41

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 41. 2/14/2024 11:19 AM IMG_0044.JPG

Fairview Tank View of a heavily corroded metal pipe inside of the Fairview Tank that was visible from inside one the manholes. Operators indicated that the metal pipe was the end of an old line that extended from a small surge tank that used to be fed by a groundwater well that was no longer present at the site. The pipe did not appear to be plugged, leaving an open pipe into the tank.

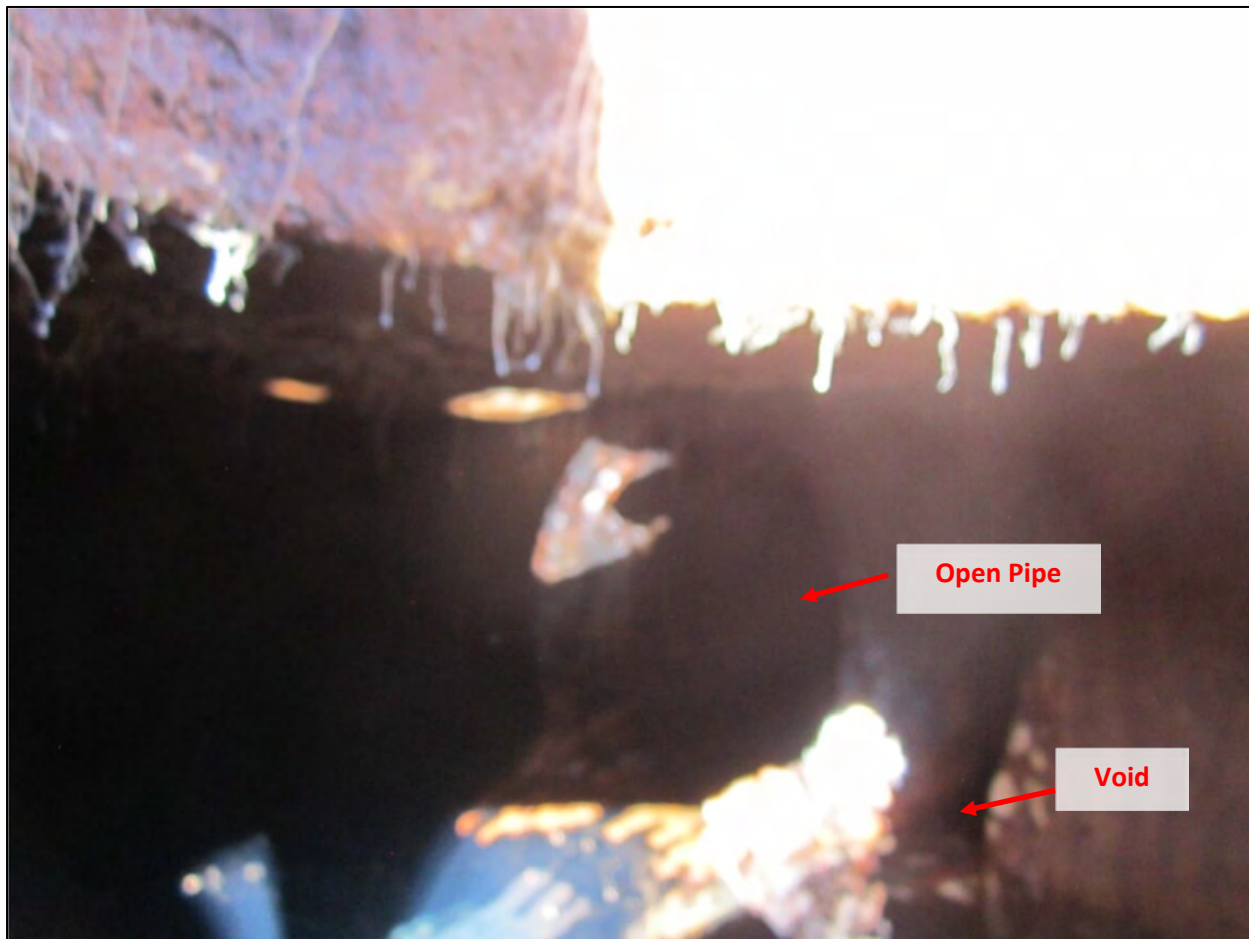


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 42

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 42. 2/14/2024 11:19 AM IMG_0043.JPG

Fairview Tank View of a void in the tank wall next to the corroded metal pipe. It was unclear if the void was a wall failure or situation where the historic pipe settled, creating the void. The void provided direct access to the finished water supply.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 43

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 43. 2/14/2024 11:03 AM IMG_0028.JPG

Fairview Tank View of an unknown cylindrical concrete structure that is covered by a metal cap. The structure was positioned near the manhole at the Fairview Tank that contained the heavily corroded metal pipe.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 44

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 44. 2/14/2024 11:28 AM IMG_0046.JPG

Fairview Site, Well G0910006Q View of the wellhead for Well G0910006Q at the Fairview site. The well was operational but not in use during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 45

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 45. 2/14/2024 11:30 AM IMG_0051.JPG

Fairview Site, Well G0910006Q View of the base of the well pedestal for Well G0910006Q where it meets the well pad. There was a gap between the well pedestal and the pad.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 46

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 46. 2/14/2024 11:39 AM IMG_0072.JPG

Fairview Site, Chlorine Injection Room View of the door to the chlorine injection room that lacked a crash bar and observation window. In addition, a respirator was not available at this location.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 47

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 47. 2/14/2024 11:35 PM DSCN9454.JPG

Fairview Site, Chlorine Injection Room View of a threaded hose tap without backflow prevention with an attached hose inside of the chlorine injection room at the Fairview site. The tap was attached to a line that is supplying finished water. It is unknown if the line had backflow prevention. The hose was unattached when this observation was made to System representatives.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 48

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 48. 2/14/2024 11:30 AM IMG_0053.JPG

Fairview Site, Chlorine Injection Vault View of the vault housing the chlorination injection line. There was an additional unknown port without a hose inside of the vault. The bottom of the vault was lined with dirt that appeared to be wet.

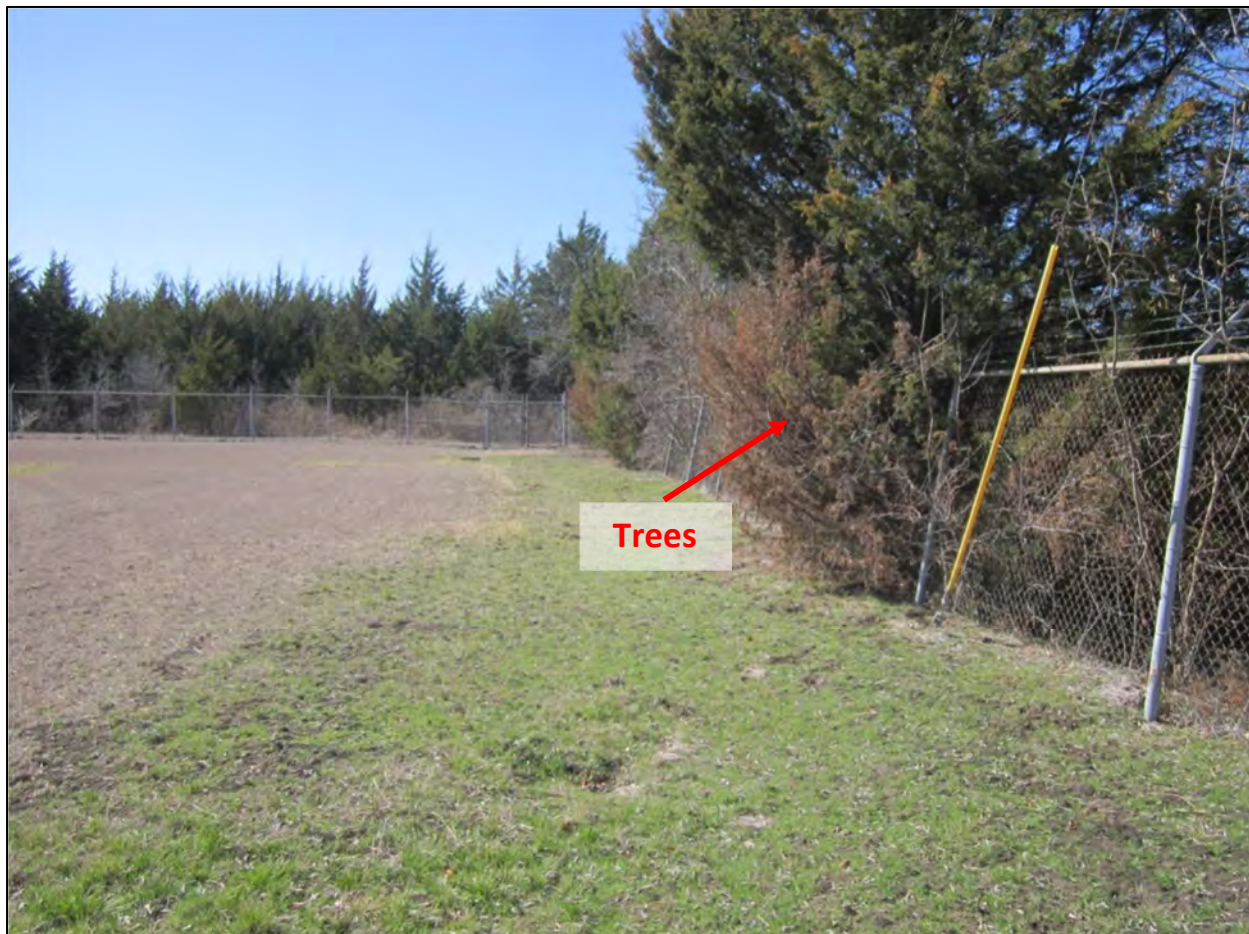


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 49

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 49. 2/14/2024 1:32 PM IMG_0079.JPG

Stephens Site, Perimeter Fence View of the perimeter fence surrounding the Stephens site. There were multiple trees growing through and around the fence, potentially compromising the integrity of the fence and security of the site.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 50

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 50. 2/14/2024 1:50 PM IMG_0085.JPG

Stephens Tank View of a leak from the Stephens Tank caused by a structural failure that occurred on the morning of February 14, 2024. The tank was leaking water from under the bottom plate onto the ground adjacent to the tank foundation at an estimated rate of several gallons per minute during the inspection. The EPA Inspection Team received follow-up communication from the System on March 5, 2024 indicating that the tank had been drained and inspected, and that the source of the leak was due to corrosion between the steel floor/plate of the tank and the “mud valve” seal. The mud valve is used to drain the tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 51

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 51. 2/14/2024 1:50 PM DSCN9504.JPG

Stephens Tank View of finished water from the Stephens Tank that was flowing into an overflow drain that ultimately discharged into a storm sewer. Due to the leak, operators had opened the drain valve in the bottom of the tank which also discharged to the overflow drain. Water was also being pumped into the distribution system while the tank was draining.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 52

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 52. 2/14/2024 1:47 PM DSCN9513.JPG

Stephens Tank View of an approximately inch-wide void between the bottom plate of the Stephens Tank and the concrete foundation. Similar voids were present in various areas around the base of the tank.

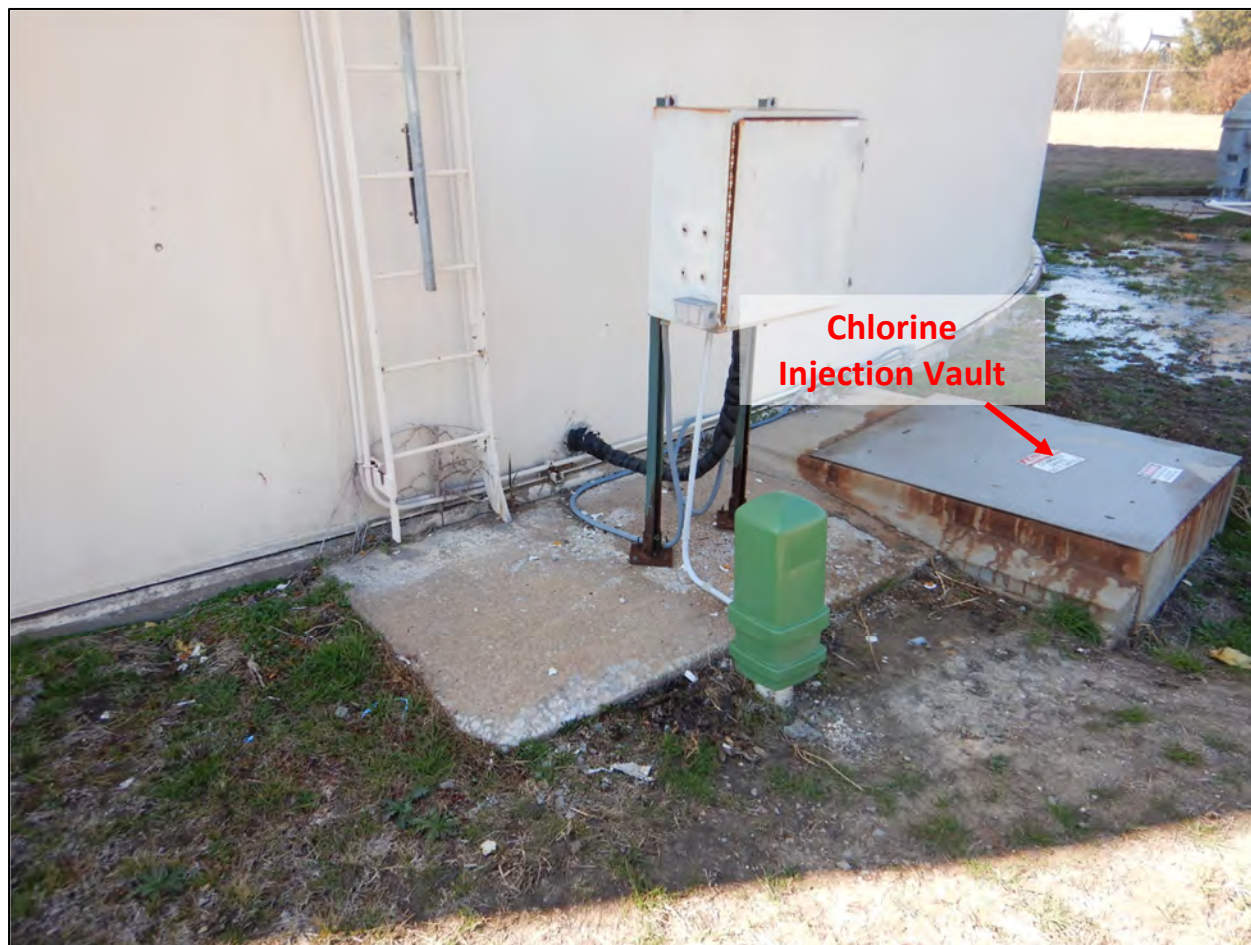


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 53

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 53. 2/14/2024 1:50 PM DSCN9515.JPG

Stephens Tank View of the access ladder for the Stephens Tank. The ladder lacked a ladder shield and extended to the ground. . The chlorine injection vault was flooded.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 54

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 54. 2/14/2024 1:50 PM IMG_0116.JPG

Stephens Tank View inside the flooded chlorine injection vault at the Stephens Tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 55

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 55. 2/14/2024 1:53 PM IMG_0088.JPG

Stephens Site, Pump Station View of the pump station at the Stephens site. One of the three pumps (Pump #2) was out of service and had been removed for maintenance. The work order for its repair was created on October 9, 2023. The shaft was scheduled to be pulled on October 11, 2023. The work order 'Ticket Status' states that the repair is 'In Progress.'



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 56

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 56. 2/14/2024 1:32 PM DSCN9506.JPG

Stephens Site, Well G0910006U View of Well G0910006U at the Stephens site. Components of the well motor had various unattached electrical wires. It was unclear if the food-grade oil barrel used for lubrication (right of the image) at the well contained oil.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 57

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 57. 2/14/2024 2:01 PM DSCN9523.JPG

Stephens Site, Sand Separator View of one of the two sand separators at the Stephens site.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 58

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 58. 2/14/2024 2:24 PM DSCN9533.JPG

Stephens Site, Chlorine Injection Room View of a threaded hose tap without backflow prevention inside of the chlorine injection room at the Stephens site. The tap was attached to a line that is supplying finished water. It is unknown if the line had backflow prevention.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 59

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 59. 2/14/2024 2:24 PM IMG_0110.JPG

Stephens Site, Chlorine Injection Room View of the chlorine pump that had been unplugged inside of the chlorine injection room at the Stephens site. The pump was unplugged because the System representatives were in the process of draining the Stephens Tank during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 60

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 60. 2/14/2024 2:49 PM IMG_0124.JPG

Fairview Elevated Tank View of a small tree growing against the base of center column for the Fairview Elevated Storage Tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 61

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 61. 2/14/2024 2:50 PM IMG_0121.JPG

Fairview Elevated Tank View of a tree growing against the fence surrounding the Fairview Elevated Storage Tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 62

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 62. 2/14/2024 2:52 PM IMG_0125.JPG

Fairview Elevated Tank View of the tree around the base of the Fairview Elevated Storage Tank being removed.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 63

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 63. 2/14/2024 2:55 PM IMG_0132.JPG

Fairview Elevated Tank View of the tree around the perimeter fence surrounding the Fairview Elevated Storage Tank being removed.

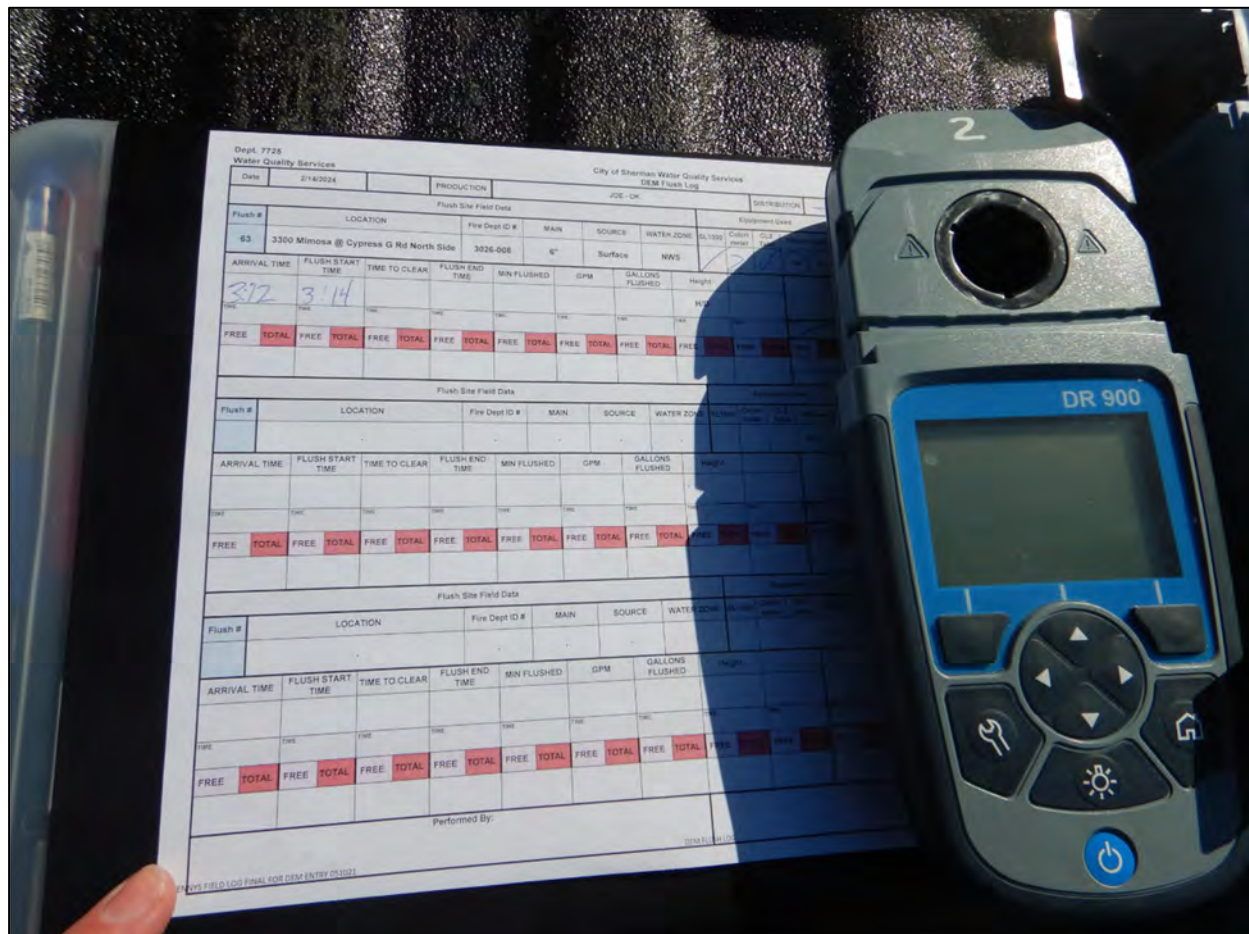


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 64

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 64. 2/14/2024 3:12 PM DSCN9546.JPG

Hydrant Flushing Event View of the flushing log that was filled out by System representatives during the flushing of the "3300 Mimosa @ Cypress G Rd North Side" hydrant.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 65

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 65. 2/14/2024 3:12 PM DSCN9553.JPG

Hydrant Flushing Event View of the dechlorinator that was used during the hydrant flushing event observed by the EPA Inspection Team during the inspection. The water that was flushed in the beginning of the event was slightly cloudy but became clear within a minute.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 66

Location: City of Sherman Public Water System		
City of Sherman	County: Grayson	State: Texas



Photograph 66. 2/14/2024 3:18 PM DSCN9562.JPG

Hydrant Flushing Event View of the Total Chlorine result taken at 3:19 p.m. (CT) at the “3300 Mimosa @ Cypress G Rd North Side” hydrant during the flushing event. The Total Chlorine result was 2.95 mg/L.

Appendix 2

Exhibit Log



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

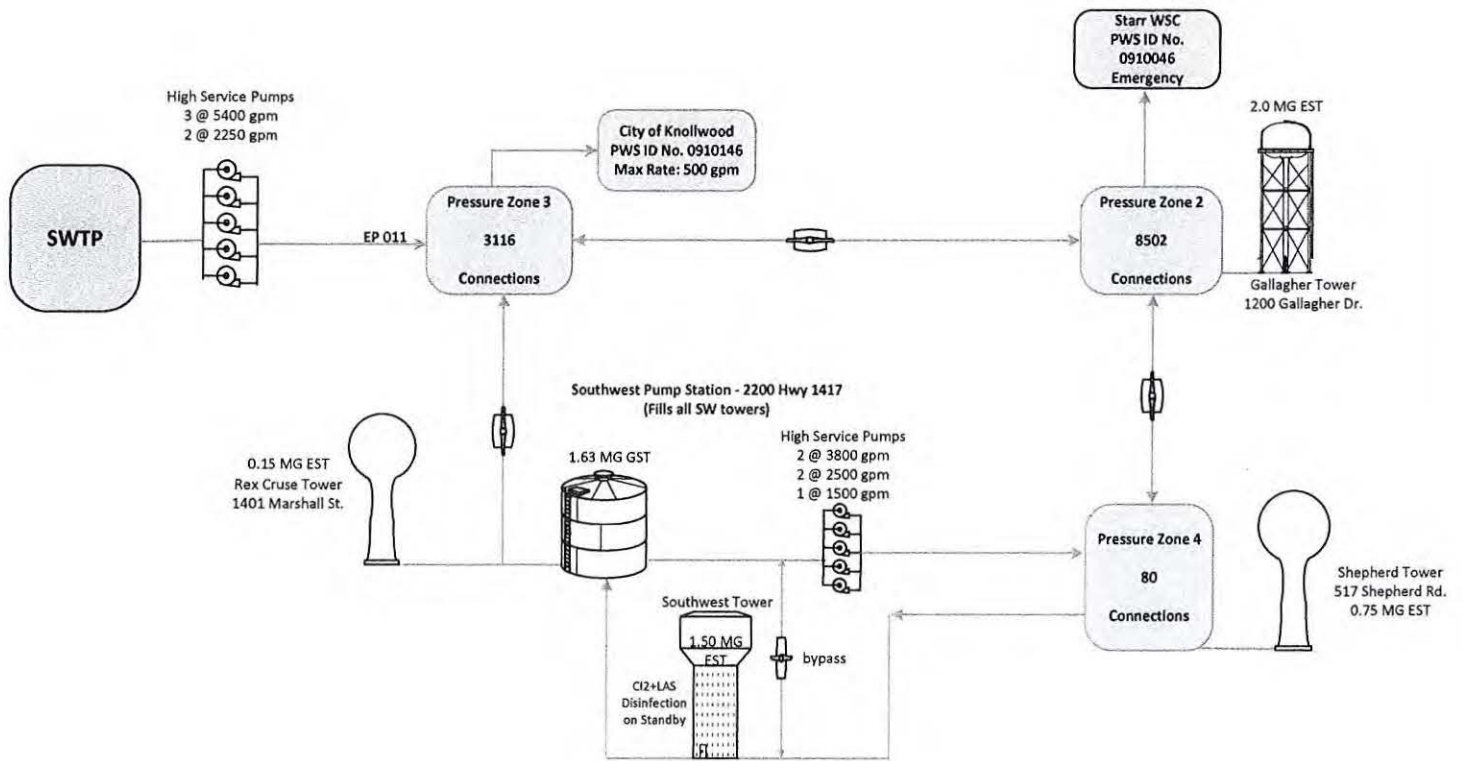
Exhibit 1

Main Water System Hydraulic Profile

City of Sherman
TCEQ ID No. 0910006
Investigation Date: 6/21-22/23
Investigator: Eric Leigh

Texas Commission on Environmental Quality Public Water System Diagram

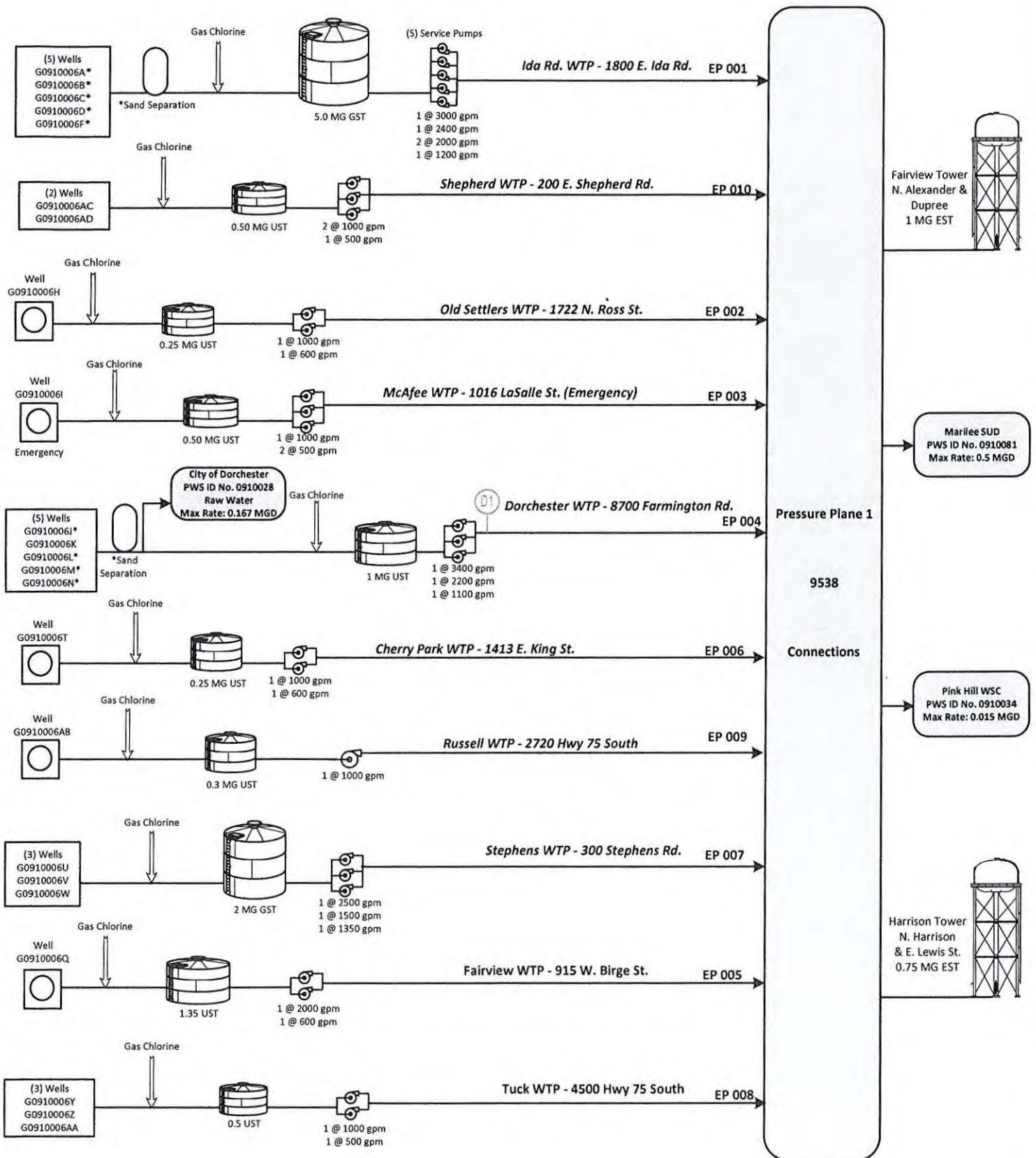
Surface Water Pressure Planes



City of Sherman
TCEQ ID No. 0910006
Investigation Date: 6/21-22/23
Investigator: Eric Leigh

Texas Commission on Environmental Quality Public Water System Diagram

Groundwater Pressure Plane





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

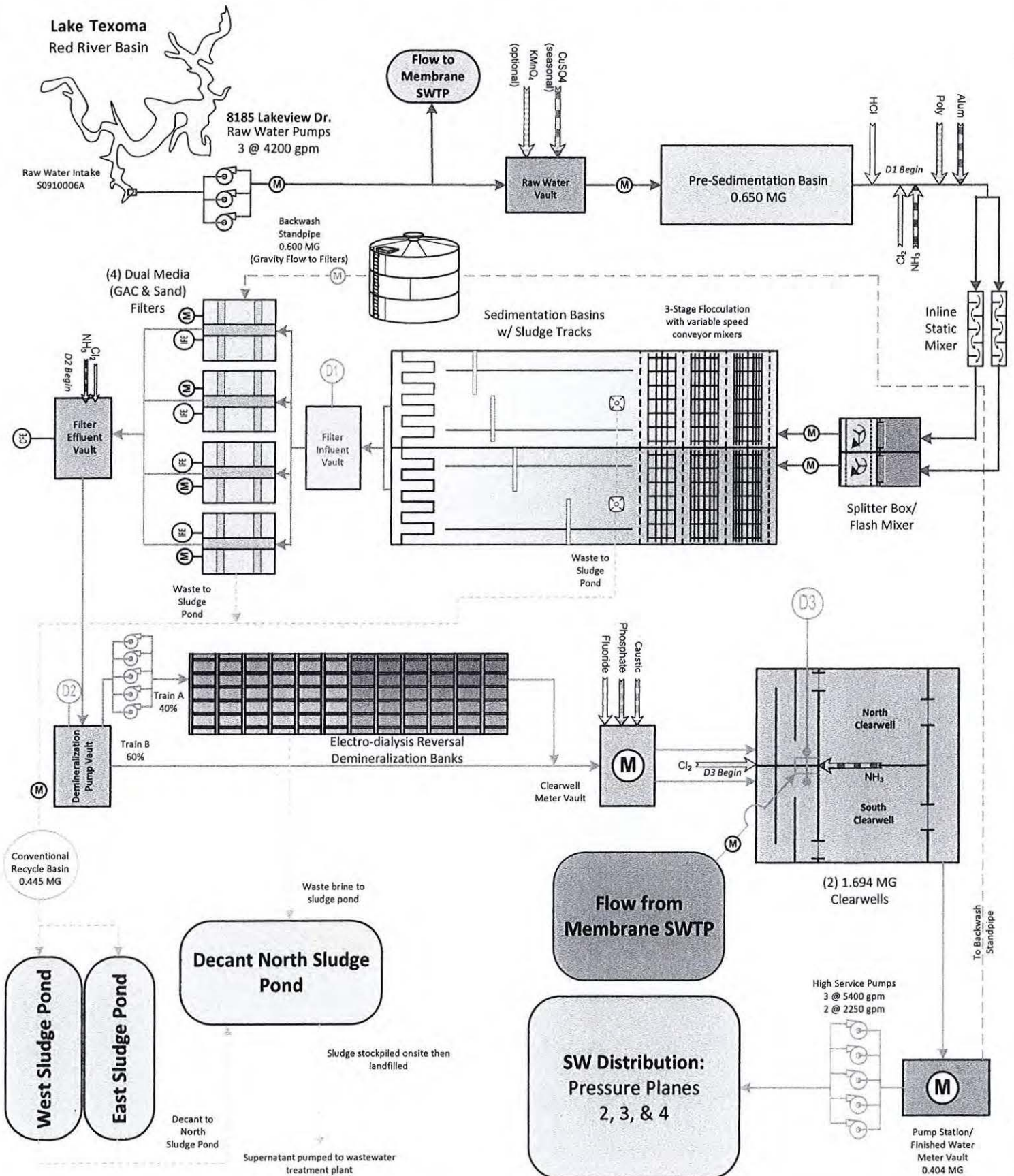
Exhibit 2

Conventional Plant Process Flow Diagram

City of Sherman
TCEQ ID No. 0910006
Investigation Date: 6/21-22/23
Investigator: Eric Leigh

Texas Commission on Environmental Quality Public Water System Diagram

Conventional Surface Water Treatment Plant - 243 La Cima Dr.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

Exhibit 3

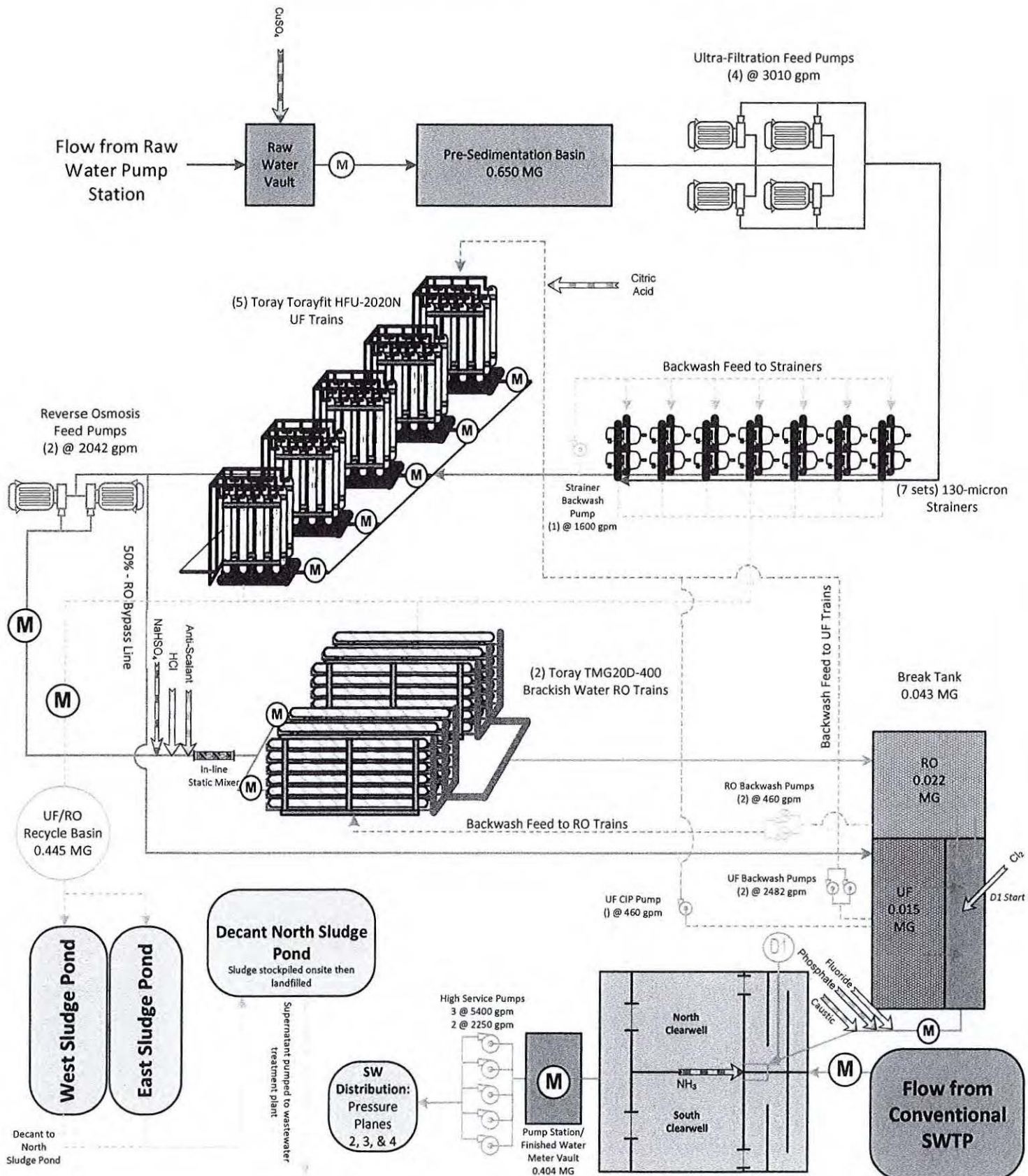
Membrane (UF/RO) Plant Process Flow Diagram

City of Sherman
TCEQ ID No. 0910006
Investigation Date: 6/21-22/23
Investigator: Eric Leigh

Texas Commission on Environmental Quality

Public Water System Diagram

Membrane Surface Water Treatment Plant - 243 La Cima Dr.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

Exhibit 4

Abbreviated November 2023 Hydrant Flushing Summary

For the Month of: November 2023

of Flushing Sites Scheduled: 146

of Sites Flushed: 140

of Work Order sites flushed: 7

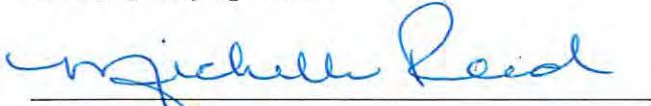
of NAPs taken: 9

of Surface Water sites flushed: 107

of Ground Water sites flushed: 33

of Total Gallons flushed: 1,022,409

Completed By: 
Kenneth Rousseau
Water Quality Specialist

Peered By: 
Michelle Reed
Water Quality Supervisor

Dept. 7725
Water Quality Services

DEM Flushing Schedule
Nov-23



Day	DEM Routes Scheduled		Goal	DEM Routes Completed				Work Performed			
								Completed	NAP	Maintenance Performed	Notes
Week 1											
11/01/23	1	2	2					0			
11/02/23	3	4	2					0			
11/03/23	5	6	2					0			
Weekly Goal ----->			6	Weekly Totals ----->				0	0	0	
Week 2											
11/06/23	7	8	2					0			
11/07/23	9	10	2					0			
11/08/23	11	12	2					0			
11/09/23	13	14	2					0			
11/10/23	15	16	2					0			
Weekly Goal ----->			10	Weekly Totals ----->				0	0	0	
Week 3											
11/13/23	17	18	2					0			
11/14/23	19	20	2					0			
11/15/23	21	22	2					0			
11/16/23	23		1					0			
11/17/23			0					0			
Weekly Goal ----->			7	Weekly Totals ----->				0	0	0	
Week 4											
11/20/23			0					0			
11/21/23			0					0			
11/22/23			0					0			
	Holiday			Holiday							
11/23/23	Holiday		0	Holiday				0			
	Holiday			Holiday							
11/24/23	Holiday		0	Holiday				0			
Weekly Goal ----->			0	Weekly Totals ----->				0	0	0	
Week 5											
11/27/23			0					0			
11/28/23			0					0			
11/29/23			0					0			
11/30/23											
Weekly Goal ----->			0	Weekly Totals ----->				0	0	0	

DEM Routes Completed
NAP Samples Collected
Hydrant Maintenance Performed

No. of Routes Scheduled -----> 23

No. of Routes Completed -----> 0

No. of NAP samples collected ---> 0

No. of Hydrants Maintained -> 0

Dept. 7725
Water Quality Services

DEM Flushing Schedule
Nov-23



Day	DEM Routes Scheduled		Goal	DEM Routes Completed				Work Performed			Notes
								Completed	NAP	Maintenance Performed	
Week 1											
11/01/23	1	2	2	1	3	4		3			
11/02/23	3	4	2	2	7	5		3			
				10							
11/03/23	5	6	2	8	12	6	9	5			
Weekly Goal ----->			6	Weekly Totals ----->				11	0	0	
Week 2											
11/06/23	7	8	2	14				1			
11/07/23	9	10	2	13				1			
11/08/23	11	12	2	11				1			
				RAIN							
11/09/23	13	14	2					0			
11/10/23	15	16	2	16	15	18		3			
Weekly Goal ----->			10	Weekly Totals ----->				6	0	0	
Week 3				17	19	20					
11/13/23	17	18	2					3			
11/14/23	19	20	2	22	21	23	24	4			
11/15/23	21	22	2	DEM FLUSHING COMPLETE				0			
11/16/23	23	24	2					0			
11/17/23			0					0			
Weekly Goal ----->			8	Weekly Totals ----->				7	0	0	
Week 4				DEM FLUSHING COMPLETE							
11/20/23			0					0			
11/21/23			0					0			
				DEM FLUSHING COMPLETE							
11/22/23			0					0			
	Holiday										
11/23/23			0					0			
	Holiday			DEM FLUSHING COMPLETE							
11/24/23			0					0			
Weekly Goal ----->			0	Weekly Totals ----->				0	0	0	
Week 5				DEM FLUSHING COMPLETE							
11/27/23			0					0			
11/28/23			0					0			
11/29/23			0					0			
11/30/23											
Weekly Goal ----->			0	Weekly Totals ----->				0	0	0	

DEM Routes Completed
NAP Samples Collected
Hydrant Maintenance Performed

No. of Routes Scheduled -----> 24
No. of Routes Completed -----> 24
No. of NAP samples collected --> 0
No. of Hydrants Maintained -> 0

Date	11/1/2023	Production	OK	Evie	SL- Leak 1502 N Binkley														
Flush Site Field Data						Equipment Used				Reason for Flushing									
Flush #	LOCATION		Fire Dept ID #	MAIN	SOURCE	WATER ZONE	SL1000	Colori meter	CL2 Tabs	Diffuser Used	Routine	Flush	Response to Work Order	Fire Hydrant Sched Maint	Work Order Required				
7	5627 Texoma Parkway @ Texoma Bicycle		2732-001	8"	Surface	NWS	—	6	—	Yes	No	Yes	No	Yes	No	Yes	No		
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet											
1445	1447	7min	1505	18min	349	6,282	H/D												
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)						TIME		
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL		
0.90	3.65																		
Flush Site Field Data						Equipment Used				Reason for Flushing									
Flush #	LOCATION		Fire Dept ID #	MAIN	SOURCE	WATER ZONE	SL1000	Colori meter	CL2 Tabs	Diffuser Used	Routine	Flush	Response to Work Order	Fire Hydrant Sched Maint	Work Order Required				
8	5100 Marshall St		2832-004	8"	Surface	NWS	—	6	—	Yes	No	Yes	No	Yes	No	Yes	No		
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet											
1508							12.00												
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)						TIME		
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL		
Flush Site Field Data						Equipment Used				Reason for Flushing									
Flush #	LOCATION		Fire Dept ID #	MAIN	SOURCE	WATER ZONE	SL1000	Colori meter	CL2 Tabs	Diffuser Used	Routine	Flush	Response to Work Order	Fire Hydrant Sched Maint	Work Order Required				
9	4203 Dripping Springs @ Carter Ct		2832-008	6"	Surface	NWS	—	6	—	Yes	No	Yes	No	Yes	No	Yes	No		
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet											
1510	1512	2min	1522	10min	305	3,050	H/D	2											
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)						TIME		
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL		
0.51	1.39																		

Performed By:

Peer Reviewed by:

Route 3

Date	11/1/2023		PRODUCTION		Tyler - OK		EVIE		SL- 1502 N Binkley																		
Flush Site Field Data										Equipment Used				Reason for Flushing													
Flush #	LOCATION		Fire Dept ID #		MAIN		SOURCE		WATER ZONE		SL1000	Colori meter	CL2 Tabs	Diffuser Used		Routine	Flush	Response to Work Order		Fire Hydrant Sched Maint		Work Order Required					
17	3800 Town Center - Home Depot		2829-007		8"		Surface		NWS					Yes No		Yes	No	Yes No		Yes No		Yes No					
ARRIVAL TIME		FLUSH START TIME		TIME TO CLEAR		FLUSH END TIME		MIN FLUSHED		GPM		GALLONS FLUSHED		Height													
																DNF- PRIVATE HYD											
TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME				NITRIFICATION MONITORING (NAP)								TIME	
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	MONO	NH3	NO2	FREE	TOTAL	MONO	NH3	NO2		
18	3800 Town Center - JC Penny		2829-001		8"		Surface		NWS					Yes No		Yes	No	Yes No		Yes No		Yes No					
ARRIVAL TIME		FLUSH START TIME		TIME TO CLEAR		FLUSH END TIME		MIN FLUSHED		GPM		GALLONS FLUSHED		Height													
														20.00		DNF- METER OK HYD											
TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME				NITRIFICATION MONITORING (NAP)								TIME	
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	MONO	NH3	NO2	FREE	TOTAL	MONO	NH3	NO2		
19	Hilltop Dr @ Premium Storage		2831-020		8"		Surface		NWS					Yes No		Yes	No	Yes No		Yes No		Yes No					
ARRIVAL TIME		FLUSH START TIME		TIME TO CLEAR		FLUSH END TIME		MIN FLUSHED		GPM		GALLONS FLUSHED		Height													
														14.00		DNF- Meter on Hyd											
TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME				NITRIFICATION MONITORING (NAP)								TIME	
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	MONO	NH3	NO2	FREE	TOTAL	MONO	NH3	NO2		

Performed By:

Peer Reviewed by:

Date	11/2/2023	Production	Jamie - OK				Evie	M.B. - 2203 Norwood - 2 Taps - Flannery												
Flush Site Field Data							Equipment Used				Reason for Flushing									
Flush #	LOCATION	Fire Dept ID #	MAIN	SOURCE	WATER ZONE	SL1000	Colori meter	CL2 Tabs	Diffuser Used	Routine	Flush	Response to Work Order	Fire Hydrant Sched Maint	Work Order Required						
29	1915 Hwy 82 @ Dr Pepper	3030-028	8"	Surface	NWS	/	/	/	Yes	No	Yes	No	Yes	No						
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet												
1029	1031	1 min	1525	494	424	209,456	12.00	31	1503 Total 1523 0.94 Total 1.02 # plant = bellghe still full - unable to push more											
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)											
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL					
0.08	0.64	0.63	0.65	0.72	0.84	0.83	0.77	0.93												
30	2812 Cedar Park	2932-001	6"	Surface	NWS	/	/	/	Yes	No	Yes	No	Yes	No						
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet												
							15.00													
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)											
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL					
31	3804 Crimsonwood @ Juniper Dr	2931-011	6"	Surface	NWS	/	/	/	Yes	No	Yes	No	Yes	No						
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet												
							22.00													
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)											
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL					

Performed By:

Peer Reviewed by:

Date	11/7/2023	Production	OK	Evie	SL, Leak 279 Pumping Jack Rd.																				
Flush Site Field Data LOCATION Fire Dept ID # MAIN SOURCE WATER ZONE Equipment Used SL1000 Colori meter CL2 Tabs Diffuser Used Reason for Flushing Routine Flush Response to Work Order Fire Hydrant Sched Maint Work Order Required																									
129	Bob Utter Ford	FV	2"	Surface	SL1000 Colori meter CL2 Tabs Diffuser Used Routine Flush Response to Work Order Fire Hydrant Sched Maint Work Order Required																				
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet	2" x .5 x 1' tomorrow per MR. need to flush.																
1320	1322	2 min	16:15	145 min	173	25,055																			
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)																
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	MONO	NH3	NO2	FREE	TOTAL	MONO	NH3	NO2
0.08	0.19																								
Flush Site Field Data LOCATION Fire Dept ID # MAIN SOURCE WATER ZONE Equipment Used SL1000 Colori meter CL2 Tabs Diffuser Used Reason for Flushing Routine Flush Response to Work Order Fire Hydrant Sched Maint Work Order Required																									
58	1616 Baker Dr - by Dealer's Elec	3030-017	6"	Surface	NWS																				
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet	Losing ground, High water age MR.																
1330	1332	10 min	1430	62 min	301	18,662	17.00	2																	
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)																
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	MONO	NH3	NO2	FREE	TOTAL	MONO	NH3	NO2
0.44	0.40	1.28	1.23																						
Flush Site Field Data LOCATION Fire Dept ID # MAIN SOURCE WATER ZONE Equipment Used SL1000 Colori meter CL2 Tabs Diffuser Used Reason for Flushing Routine Flush Response to Work Order Fire Hydrant Sched Maint Work Order Required																									
59	1604 Ann Ave	3030-010	6"	Surface	NWS																				
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet	High water age																
1505	1507	2 min	1603	56 min	264	14,784	22.00	2																	
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)																
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	MONO	NH3	NO2	FREE	TOTAL	MONO	NH3	NO2
0.22	0.34	0.70	0.74	0.94																					

Performed By:

Mike Kivensky

DEM FLUSH LOG

Kurt



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

Exhibit 5 Contractor Fairview Tank Inspection Report 1/18/2023



City of Sherman

1 Million Gallon Clearwell

‘Fairview Pump Station’

January 18, 2023



TEXAS TANK SERVICES

103 STACY DRIVE
WHITEHOUSE, TX. 75791
1-866-788-3483

**INSPECTION REPORT #6
1 MILLION GALLON CLEARWELL
'FAIRVIEW PUMP STATION'
CITY OF SHERMAN, TEXAS**

GENERAL INFORMATION:

Date:	1/18/2023
Tank Size:	1 Million Gallons
Tank Type:	Concrete Clearwell
Diameter:	50 yards X 60 yards
Crew Leader:	Michael Terry

Introduction: When Texas Tank Services performs any inspection and in-service cleaning service, we strictly adhere to the standard of all divers and in-tank equipment in accordance with AWWA Standard C652-02 for disinfection. All gear and equipment entering the potable water tank are cleaned and disinfected, and the dressed diver is sanitized with a 200-PPM Chlorine concentration prior to entry into the system. The inspector/diver utilizes a helmet and dry suit and is in direct voice communication with outside personnel.

EXTERIOR INSPECTION

Security Fence:



This facility is surrounded with a 6-foot chain link and barbed wire security fence that was in good condition at the time of inspection. No abnormalities were reported.

Pump:



The two pumps were in fair condition at the time of inspection. Moderate corrosion was reported on one pump. No other abnormalities were reported. **TEXAS TANK SERVICES** recommends machines prepping the corroded areas of the pumps and adding a new protective coating.

Overflow Pipe and Flapper:



The overflow pipe and flapper were in fair to good condition. They are located at the ten o'clock position of the facility. The pipe measures 10 inches in diameter and it discharges 9 inches from the ground. The flapper measures 13 inches in diameter and maintains a good seal. Moderate staining was reported inside of the pipe. No abnormalities were reported.

Water Level Indicator:



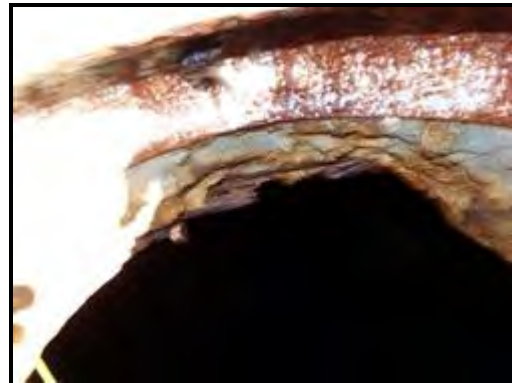
The one water level indicator was operable and in good condition. The other gauge was fading and unreadable. **TEXAS TANK SERVICES** recommends replacing the one water pressure gauge to bring the component back to fully functional status.

Roof Ventilation Structures:



The two roof ventilation structures were in good condition at the time of inspection. They measure 22 x 22 inches. They are each equipped with a 16-mesh screen that is also in good condition. Light staining was noted. No other abnormalities were reported.

Water Access Hatch:



The nine water access hatches were in poor condition. The hatches measured 24 inches in diameter. The hatches were locked with a keyed lock upon arrival of the inspection crew. However, they were not labeled as a “Confined Space” entry. Heavy surface corrosion was reported on all of the hatches. **TEXAS TANK SERVICES** recommends replacing and enlarging the water access hatch to at least 30 x 30 square inches or 30 inches in diameter. Enlarging the hatch would enable safety equipment to enter the facility if anyone was ever in need of medical attention inside the structure. **TEXAS TANK SERVICES** also recommends installing “Confined Space” entry placards to the hatch. **TEXAS TANK SERVICES further** recommends machine prepping the corroded areas of the water access hatches and adding a new protective coating

INTERIOR INSPECTION

Water Access Hatch:



The water access hatch was in poor condition upon internal inspections. Heavy surface corrosion was reported. **TEXAS TANK SERVICES** recommends replacing and enlarging the water access hatch to at least 30 x 30 square inches or 30 inches in diameter. Enlarging the hatch would enable safety equipment to enter the facility if anyone was ever in need of medical attention inside the structure.

Water Access Ladder:

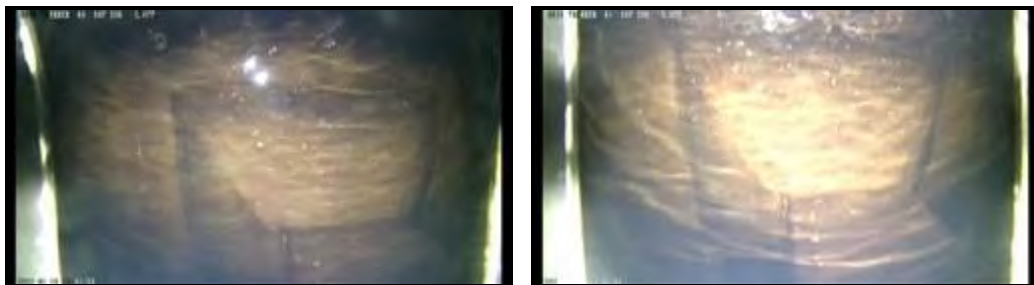
This facility was not equipped with a water access ladder. **TEXAS TANK SERVICES** recommends installing a water access ladder with cable style fall protection to ensure the safety of anyone entering or exiting the facility.

Internal Sidewall Plates (above the water line):



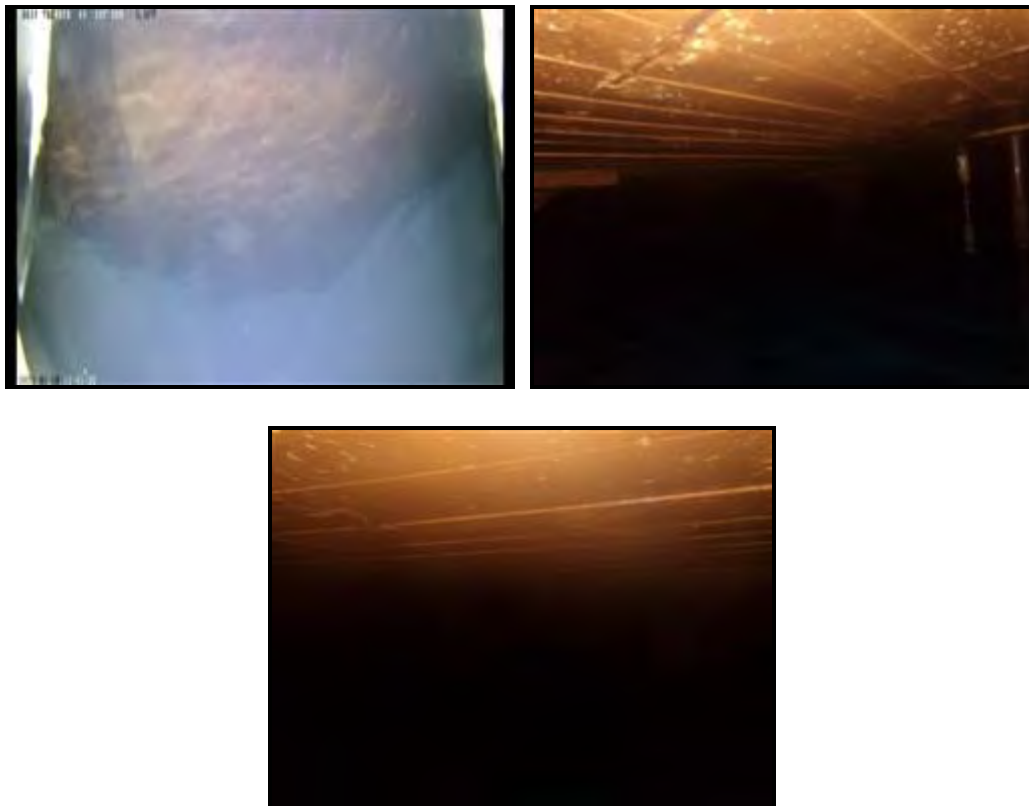
The internal sidewall plates were in fair condition above the water line. Light condensation and heavy staining were reported. **TEXAS TANK SERVICES** recommends performing a chemical power wash of the interior of the facility, utilizing Blue Earth Labs' product Floran, to remove staining and extend the life of this structure.

Support Columns:



The support columns were in fair to good condition above the water line. Moderate staining was reported. **TEXAS TANK SERVICES** recommends performing a chemical power wash of the interior of the facility, utilizing Blue Earth Labs' product Floran, to remove staining and extend the life of this structure.

Internal Roof Plates:

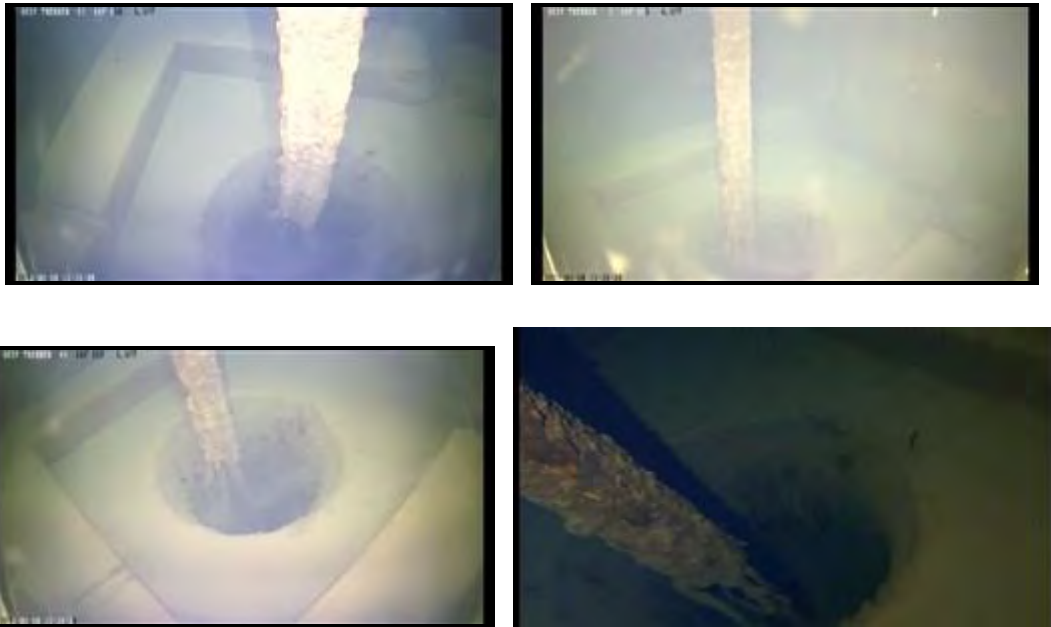


The internal roof plates were in good condition upon internal inspection. Heavy condensation and staining were reported. **TEXAS TANK SERVICES** recommends performing a chemical power wash of the interior of the facility, utilizing Blue Earth Labs' product Floran, to remove staining and extend the life of this structure.

Roof Ventilation Structures:

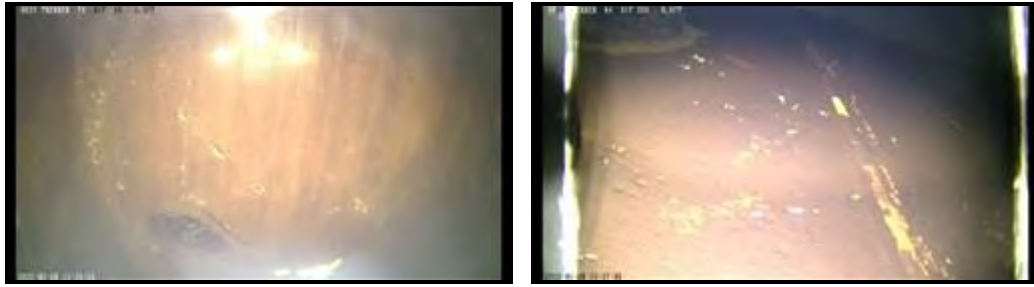
The two roof ventilation structures were in fair condition upon internal inspection. They are located on the roof plates of the facility and measure 22 inches in diameter. They are each equipped with 16-mesh screens that were in good condition. Moderate surface corrosion was reported. **TEXAS TANK SERVICES** recommends replacing and enlarging the roof ventilation structure due to the amount of condensation and corrosion currently accumulating within the facility.

Pumps:



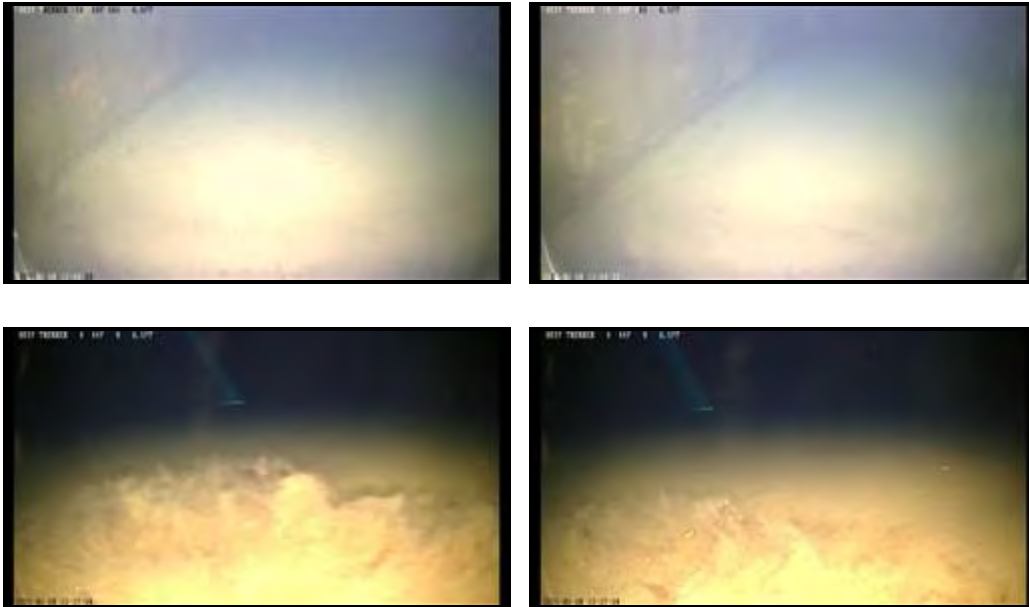
The pumps were in poor condition. Heavy corrosion and heavy staining and calcium growth were reported. **TEXAS TANK SERVICES** recommends performing a chemical power wash of the interior of the facility, utilizing Blue Earth Labs' product Floran, to remove staining and extend the life of this structure. **TEXAS TANK SERVICES** recommends machine prepping the corroded areas of the pumps and adding a new protective coating.

Sidewall Plates (below the water line):



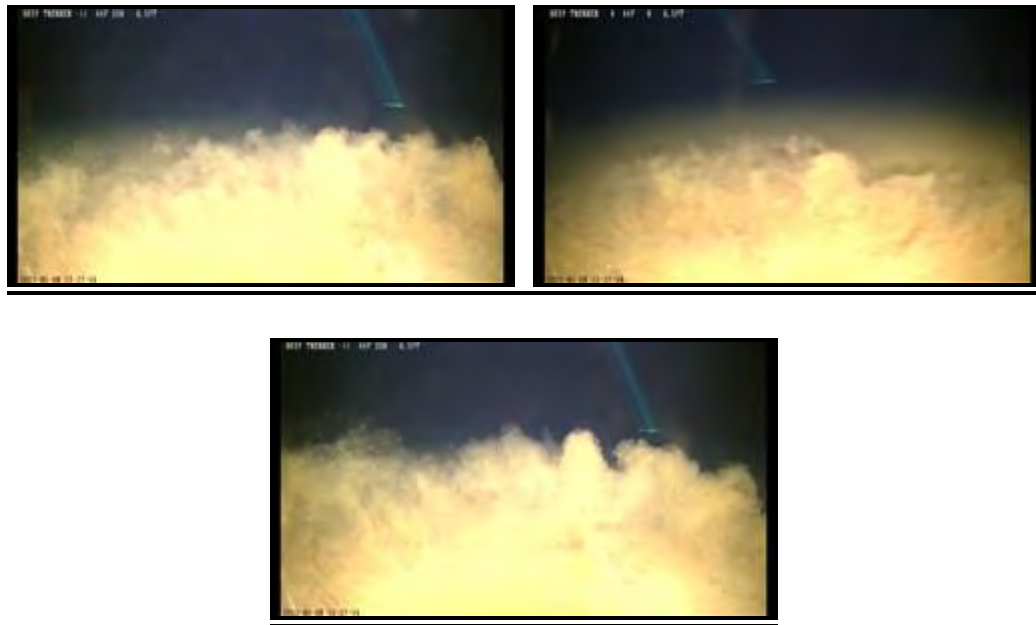
The internal sidewall plates were in fair condition. Heavy staining was reported. **TEXAS TANK SERVICES** recommends performing a chemical power wash of the interior of the facility, utilizing Blue Earth Labs' product Floran, to remove staining and extend the life of this structure.

Internal Floor Plates:



The internal floor plates were not seen due to 100% coverage of sedimentation. **TEXAS TANK SERVICES** recommends an in-service cleaning to remove this sediment in order to better evaluate the floor plates, as well as improve the quality of the water in this tank.

Sediment Depth:



The sediment depth was reported to be $\frac{1}{2}$ of an inch and consisting of sand. **TEXAS TANK SERVICES** recommends an in-service cleaning to remove this sediment in order to better evaluate the floor plates, as well as improve the quality of the water in this tank.

Water Condition:

The water condition was fair. The clarity of the water was fair, and the temperature was cool. No oils, insects, or odors were reported.

RECOMMENDATIONS

TEXAS TANK SERVICES would like to make the following suggestions to improve and extend the life of this facility:

1. Keep this facility on a scheduled maintenance program to maintain the integrity of this water storage facility and help preserve the quality of your water.
2. Perform an in-service cleaning to remove the ½ inch of sediment in order to better evaluate the floor plates, as well as improve the quality of the water in this tank.
3. Replace and enlarge the water access hatch to at least 30 inches in diameter or 30 x 30 square inches. Enlarging the hatch would enable safety equipment to enter the facility if anyone was ever in need of medical attention inside the facility.
4. Add a “Confined Space Entry” placard to the water access hatch .
5. Replace and enlarge the two roof ventilation structures to reduce the amount of condensation and corrosion currently accumulating within the facility.
6. Install a water access ladder with cable style fall protection to ensure the safety of anyone entering or exiting the facility and to comply with OSHA standards.
7. Perform a chemical power wash of the interior of the facility, utilizing Blue Earth Labs’ product Floran, to remove staining and extend the life of this structure.
8. Replace the one pressure gauge water level indicator to bring the component back to fully functional status.
9. Machine prep the corroded areas of the interior and exterior pumps and add a new protective coating.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

Exhibit 6

Ongoing Corrective Maintenance List

Report - Unresolved Tickets

	Issue Name	Ticket Number	Issue Description	Created By	Ticket Status	Assigned To	Created	Modified	Modified By	Comments
1	leaking 12" line	95	12" discharge line leaking in POE meter vault	web-form@smartsheet.com	In Progress	Brian Rice	02/08/24 5:08 PM	02/08/24 5:09 PM	oscarc@cityofsherman.com	ordered parts
2	trench drain lift station High, Low and moisture alarm is on	92	trench drain lift station High, Low and moisture alarm is on	web-form@smartsheet.com	In Progress	Brian Rice	01/29/24 8:43 AM	02/12/24 1:02 PM	oscarc@cityofsherman.com	
3	SWBPS HSP 2	89	HSP 2 at SWBPS is not pumping the same as it has been. The Operators have to turn the VFD up to 55% to get any kind of pressure change on the effluent psi. The VFD usually runs at 45%. The effluent flow meter does not work so we can not see if the flow is changing.	web-form@smartsheet.com	In Progress	Oscar Canales	01/19/24 1:27 PM	02/12/24 1:02 PM	oscarc@cityofsherman.com	
4	WTP HSP #4	84	HSP 4 appears to have had a short and caught fire in the control panel box.	web-form@smartsheet.com	In Progress	Oscar Canales	01/16/24 9:51 PM	02/07/24 11:01 AM	oscarc@cityofsherman.com	new VFD is installed, waiting on RLC to help H&H with wiring.
5	Dorchester 9T failed	73	Dorchester 9T failed	web-form@smartsheet.com	In Progress	Mike Waldrum	12/12/23 9:56 AM	12/18/23 9:52 AM	brianr@cityofsherman.com	pulling motor to get top seal
6	Ida Rd. Totalizer	71	The flow meter is maxing out when shutting off HSP Hz 2 and locking up the totalizer	web-form@smartsheet.com	Not Started	Mike Waldrum	12/05/23 4:39 AM	01/02/24 11:05 AM	oscarc@cityofsherman.com	
7	Backwash Flow meter	70	Backwash Flow Meter is very erratic when doing backwashes and keeps reading while the Backwash Tank is filling.	web-form@smartsheet.com	In Progress	Leroy Dorley	12/04/23 8:04 AM	01/08/24 7:13 AM	oscarc@cityofsherman.com	waiting on new flowmeter
8	Chlorine Building Heaters	67	There are several heating elements that do not work in the chlorine storage room. Could someone please look into this issue. Thank you.	web-form@smartsheet.com	In Progress	Jamie Weger	12/02/23 2:02 PM	02/08/24 5:12 PM	oscarc@cityofsherman.com	ordered heating elements
9	WTP Chemical Pump Room Heaters	66	There are a lot of heating elements that do not work on the heaters. Could someone please look into this issue. Thank you.	web-form@smartsheet.com	In Progress	Jamie Weger	12/02/23 2:00 PM	02/08/24 5:12 PM	oscarc@cityofsherman.com	ordered heating elements
10	Comms Status 12/1/23	65	Comm Status Comm fails	web-form@smartsheet.com	In Progress	Oscar Canales	12/01/23 9:41 AM	02/08/24 5:12 PM	oscarc@cityofsherman.com	ordered master radio
11	South West Booster Station Flow meter	62	The effluent flow meter has not worked in quite a while. Could someone please look into this. Thank you.	web-form@smartsheet.com	In Progress	Brian Rice	11/30/23 2:23 PM	12/18/23 10:07 AM	brianr@cityofsherman.com	flow meter has been delivered
12	Dos Lagos 1 LS com fail	57	Dos Lagos 1 LS com fail	web-form@smartsheet.com	In Progress	Oscar Canales	11/21/23 7:38 AM	11/21/23 9:54 AM	oscarc@cityofsherman.com	waiting on Shipman to check
13	Luella site 2 com fail	56	Luella site 2 com fail	web-form@smartsheet.com	In Progress	Oscar Canales	11/21/23 7:36 AM	11/21/23 9:54 AM	oscarc@cityofsherman.com	waiting on Shipman to check
14	pulled pump #2 moisture in motor	52	pulled pump #2 for moisture	web-form@smartsheet.com	In Progress	brianr@cityofsherman.com	11/14/23 3:57 PM	11/14/23 4:02 PM	brianr@cityofsherman.com	pulled pump for repair
15	Stephens #2 booster pump	27	broken shaft on HSP #2	web-form@smartsheet.com	Not Started	Mike Waldrum	10/09/23 4:19 PM	10/10/23 11:34 AM	oscarc@cityofsherman.com	Will pull 10/11/2023
16	Fairview # 1 HSP	26	#1 HSP locked up	web-form@smartsheet.com	In Progress	Mike Waldrum	10/09/23 4:02 PM	10/18/23 11:01 AM	oscarc@cityofsherman.com	pump was pulled and send for
17	Old Settlers 1T	15	Not operational	web-form@smartsheet.com	In Progress	Oscar Canales	10/03/23 2:13 PM	10/03/23 2:51 PM	jimcross@cityofsherman.com	Indications are pump failure.
18	Shepherd 1W	14	Not operational	web-form@smartsheet.com	In Progress	Oscar Canales	10/03/23 2:12 PM	10/03/23 2:51 PM	jimcross@cityofsherman.com	Waiting for data from soft start

Appendix 3

2016 Sherman LCR Sampling Plan



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
LEAD/COPPER SAMPLE SITE SELECTION POOL AND MATERIALS SURVEY
FORM 20467

THE NUMBER OF SAMPLE SITES REQUIRED IS BASED ON POPULATION AND CAN BE FOUND IN THE INSTRUCTIONS. **PLEASE READ THE INSTRUCTION SHEET BEFORE COMPLETING THIS FORM.**

PWS ID: 0910006 SYSTEM TYPE: ☒ CWS ☐ NTNC
SYSTEM NAME: City of Sherman POPULATION: ☐ >100,000
ADDRESS: P.O. Box 1106, Sherman, TX 75091-1106 ☒ 10,001 to 100,000
CONTACT PERSON: Nathan Whiddon ☐ 3,301 to 10,000
PHONE NUMBER: 903-892-7286 ☐ 501 to 3,300
EMAIL ADDRESS: nathanw@ci.sherman.tx.us ☐ 101 to 500
☐ ≤ 100

SAMPLE SITE CATEGORIES

Systems must pick as many Tier 1 sites as possible before using Tier 2 sites. If there are insufficient Tier 2 sites, Tier 3 sites may be used. If there are insufficient Tier 1, 2 or 3 sites, the sampling pool may be completed using non-tier sites. If it is not known whether lead is present in the plumbing, the site should be designated as a non-tier site. The SDWA lead ban requiring the use of “lead-free” plumbing for drinking water took effect in 1988: buildings constructed after this date would not legally contain lead solder.

TIER 1	For Community Water Systems (CWS), it is single family structure that contains lead pipes or copper pipes with lead solder and/or is served by lead service lines installed after 1982.	# of Sites <u>26</u>
	For Non-Transient Non-Community Systems (NTNCWS), it is buildings that contain copper pipes with lead solder installed after 1982 and/or served by lead service lines.	# of Sites <u>N/A</u>
TIER 2	For CWS, it is a building or multiple-family residences that contain lead pipes or copper pipes with lead solder installed after 1982, and/or is served by lead service lines.	# of Sites <u>N/A</u>
	For NTNCWS, it is buildings that contain copper pipes with lead solder installed before 1983.	# of Sites <u>N/A</u>
TIER 3	Applies to CWS Only. Single family structures that contain copper pipes with lead solder installed before 1983.	# of Sites <u>1</u>
OTHER	Sites not defined by Tiers 1 – 2 or 3: explain:	# of Sites <u>45</u>
	<u>Includes sites with copper service lines and customer plumbing that includes galvanized, copper or PVC materials.</u>	TOTAL # OF SITES <u>72</u>



**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
LEAD/COPPER SAMPLE SITE POOL SELECTION FORM**

PWS NUMBER: 0910006

Make sure you include all regular and backup sites and make as many pages as you need.

No	Site Name	Tier 1, 2, 3, Other	(R)egular sample sites or (B)ack-up site	Type of Plumbing Material	Date of Construction
1	1925 Timberline	Tier 1	(R) - Regular	(City) – Copper (Customer) – Copper w/lead solder	1990
2	325 Arapaho West	Tier 1	(R) - Regular	(City) – Copper (Customer) – Copper w/lead solder	1990
3	810 E. Jones	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1945
4	911 Starlight	Tier 4	(R) - Regular	(City) – Copper (Customer) – Copper	<1966
5	911 N. Branch	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1940
6	908 S. Maxey	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	1962
7	4709 Bello Vista Cir.	Tier 4	(R) - Regular	(City) – Copper (Customer) – Copper	1984
8	1019 S. Crockett	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1951
9	616 S. Maxey	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1951
10	605 S. Hazelwood	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1951
11	402 W. Steadman	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	1980
12	5201 Camino Dos Lagos	Tier 4	(R) - Regular	(City) – Copper (Customer) – PVC	1987
13	325 W. Middleton	Tier 4	(R) - Regular	(City) – Copper (Customer) – Galvanized	<1951
14	920 N. Harrison	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1920
15	323 N. Cleveland	Tier 4	(R) - Regular	(City) – Copper (Customer) – Galvanized	<1951
16	1117 S. Walnut	Tier 1	(R) - Regular	(City) – Lead (Customer) – PVC	<1920
17	1112 S. Elm	Tier 4	(R) - Regular	(City) – Copper (Customer) – Galvanized	<1950
18	1107 N. Harrison	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized w/brass solder	<1940
19	1305 N. Harrison	Tier 1	(R) - Regular	(City) – Lead (Customer) – Copper w/lead solder	<1946
20	815 N. Cleveland	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1940
21	1124 E. Jones	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1930
22	915 E. Jones	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1925

23	1015 E. Cherry	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1930
24	520 S. Charles	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1925
25	906 N. Branch	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1940
26	616 E. Orange	Tier 1	(R) - Regular	(City) – Lead (Customer) – PVC	<1944
27	306 W. Dulin	Tier 4	(R) - Regular	(City) – Copper (Customer) – Copper	<1951
28	1319 N. Cleveland	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1940
29	523 S. Charles	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1920
30	1116 S. Montgomery	Tier 4	(R) - Regular	(City) – Copper (Customer) – PVC	<1966
31	1301 N. Harrison	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1940
32	914 S. Montgomery	Tier 1	(R) - Regular	(City) – Lead (Customer) – Copper w/lead solder	<1953
33	1018 S. Crockett	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1920
34	1401 N. Cleveland	Tier 1	(R) - Regular	(City) – Lead (Customer) – Galvanized	<1946
35	3112 Mimosa	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1984
36	3212 Mimosa	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1986
37	3112 Redbud	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1978
38	1631 Idlewood	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1977
39	3014 S. Carolina	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1983
40	3008 Mimosa	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1975
41	4908 W. Park Ave.	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1986
42	2604 W. Cascade	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1988
43	501 S. Glacier	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1985
44	2612 W. Biscayne Dr.	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1985
45	2609 Shenandoah Cir.	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1988
46	201 Arapaho Trail West	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1986
47	1726 Archer Dr.	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1985
48	508 S. Dewey	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1988
49	3210 N Marseille	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1982

50	601 Oxford	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1979
51	1301 N. Cleveland	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1961
52	1124 E. Jones	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1951
53	115 N. Ricketts	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1957
54	902 N. Woods	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1951
55	820 S. Throckmorton	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1968
56	607 S. Vaden	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1951
57	518 S. Crockett	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1951
58	812 E. Brockett	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1966
59	520 S. Throckmorton	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1965
60	1326 S. Crockett	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1951
61	1424 S. Travis	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1956
62	1701 River Oak Cir.	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1992
63	2501 San Miguel	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1979
64	3105 Normandy	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1984
65	1008 N. Harrison	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Galvanized	<1951
66	1202 S. Rusk	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	<1951
67	603 E. Thomas	Tier 4	(B) - Back-up	(City) – Copper (Customer) - PVC	<1961
68	1513 S. Vaden	Tier 4	(B) - Back-up	(City) – Copper (Customer) – Copper	1970
69	1837 Glenway	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1984
70	1813 Glenway	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1986
71	2406 Turtle Creek	Tier 4	(B) - Back-up	(City) – Copper (Customer) – PVC	1981
72	1200 W. Marlborough	Tier 3	(R) - Regular	(City) – Copper (Customer) – Copper w/lead solder	1968

I have verified and certify that all sites from which lead and copper tap samples are collected shall be selected from a pool of targeted Tier 1, 2, 3, or “other” sample sites. Sample sites selected are representative of the distribution system and specifically represent areas of the systems most vulnerable to corrosion of lead and copper in water.

Signature: _____ **Date:** _____

Printed Name: Mark Gibson, P.E. **Title:** Director of Utilities



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INSTRUCTIONS FOR SELECTING LEAD/COPPER SAMPLING SITES

The objective when selecting sampling sites is to choose sites with interior plumbing materials of lead and/or copper, if possible. These types of sites are categorized on the **Lead/Copper Sample Site Selection Form (SSF)** from highest to lowest risk (#1-Other) based on their likelihood to leach lead and/or copper into the drinking water.

Identify a sample pool consisting of sites that fit in the highest category (ies) as possible (closest to #1). For example, search first for sites that meet the description in Categories #1 or #2 on the Form. If you can't find sites that fit in either of these categories, then try to find sites that fit in Categories #3. If you can't find any sites that fit in Categories #1-3, then all of your sampling sites will go in Category Other.

You must list the type of plumbing material and the date of construction for each site you put in Category #4.

Your Sampling Pool should include all identified sites EQUAL to the number of sites your system is required to sample during standard or initial monitoring. This is true for all systems on initial or reduced monitoring.

Example: Selecting Tier Sites and Sampling Pool

- A PWS serves 3,301 to 10,000 people and is on reduced monitoring
- It is required to have a pre-approved sampling pool of 40 sites of which to sample from
- If your sampling pool needs updating, please use the site selection form and materials evaluation survey form to help identify the 40 sites. Turn it into TCEQ for approval.
- Identify which sites are "normal" sites and which sites are "reserved for back-up" sites
- Your Monitoring Plan will be updated at the same time your sampling pool is updated – keep a copy in your records.
- Your normal tap water sampling is 20 sites on reduced monitoring. Make sure in advance that your customers want to participate.
- Bottles arrive and sampling begins.

Number of Sampling Sites Required for Standard / Initial Monitoring

System Size	System Population	Number of PBCU sample sites
Large	>100K	100
	50,001 – 100K	60
Medium	10,000 – 50K	60
	3,301 – 10,000	40
Small	501 – 3,300	20
	101 -500	10
	< 100	5

Number of Sampling Sites Required for Routine / Reduced Monitoring

System Size	System Population	Number of PBCU sample sites
Large	>100K	50
	50,001 – 100K	30
Medium	10,000 – 50K	30
	3,301 – 10,000	20
Small	501 – 3,300	10
	101 -500	5
	< 100	5

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
INSTRUCTIONS FOR SELECTING LEAD/COPPER SAMPLING SITES

ADDITIONAL GUIDELINES WHEN SAMPLING TAP WATER MONITORING

1. When a sufficient number of Tier 1 sites do not exist or are inaccessible, you must complete your sample pool with Tier 2 sites.
2. For CWSs, when a sufficient number of Tier 1 and Tier 2 sites do not exist or are inaccessible, you must complete your sampling pool with Tier 3 sites.
3. Any water system that cannot complete its sampling at sites that meet the applicable tier criteria must complete sampling at representative sites throughout the distribution system.
4. You are not required to target buildings with lead solder installed after the 1988 Texas Lead ban.
5. You should not monitor at sampling sites that have water softeners; however, if all of your available sampling sites have water softeners, you should identify the highest risk sites (Tier 1) and monitor at those locations kitchen or bathroom sinks.
6. If you are not able to draw at least half of your samples from taps served by lead service lines, you must collect a sample from each available site that is serviced by a lead service line.
7. If you have lead service lines, but you have lead goosenecks or pigtails, you can collect tap water samples at the sites with the goosenecks and/or pigtails.
8. You should not sample at sites with point of use devices or point of entry devices.
9. Once monitoring begins, you must use the same sites, unless a site is no longer accessible to you or no longer fits the requirements of a priority site. If your sites have changes you must update your sampling pool.

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
LEAD/COPPER SAMPLING SITE MATERIALS EVALUATION SURVEY**

The following is a checklist of resources for water systems to use when evaluating and identifying plumbing materials in their systems. Investigate the interior plumbing of your customers or your facility to determine what types of plumbing materials are present in your system. **Mark the resource(s) you used in your investigation in the blank(s) provided.** If you use a resource which is not listed below, indicate that in the blanks provided next to "Other Sources".

MATERIALS SURVEY CHECKLIST

1. **Distribution System Materials** - Sources available to determine the number of lead service lines or lead goosenecks in the distribution system.

☐ Distribution System Maps and Record Drawings (provide)
☐ Capital improvement plans for distribution system development.
☒ Utility records including meter installation records, customer complaint investigations and all historical documentation which indicate and/or confirm the location of lead service connections.
☒ Interview senior personnel.
☐ Perform community survey.

2. **Interior Plumbing Materials** - Sources available to determine the number of residential or non-residential buildings which have interior lead pipe or copper pipe with lead solder joints.

☐ County appraisal district records.
☒ Contacts within the water system, municipal office or other local officials.
☐ Survey area plumbers about when and where copper pipe with lead solder was used.
☐ **Interview residents** - letters, phone survey, personal contact, etc.
☐ Interview local contractors, developers and builders.

3. **Corrosivity Characteristics** - Community water supply systems shall identify whether the following construction materials are present in their distribution system and report to the State:

☒ Lead from piping, solder, caulking, interior lining of distribution mains, alloys and home plumbing
☒ Copper from piping and alloys, service lines, and home plumbing.
☒ Galvanized piping, service lines, and home plumbing.
☒ Ferrous piping materials such as cast iron and steel.

Other Sources (explain)

Return the form to:

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
PUBLIC DRINKING WATER – LEAD/COPPER PROGRAM - MC 155
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087**

If you have any questions, please call the Lead/Copper Program at Phone: 512/239-4691. Fax: 512/239-6050

Appendix 4

Follow-Up Material

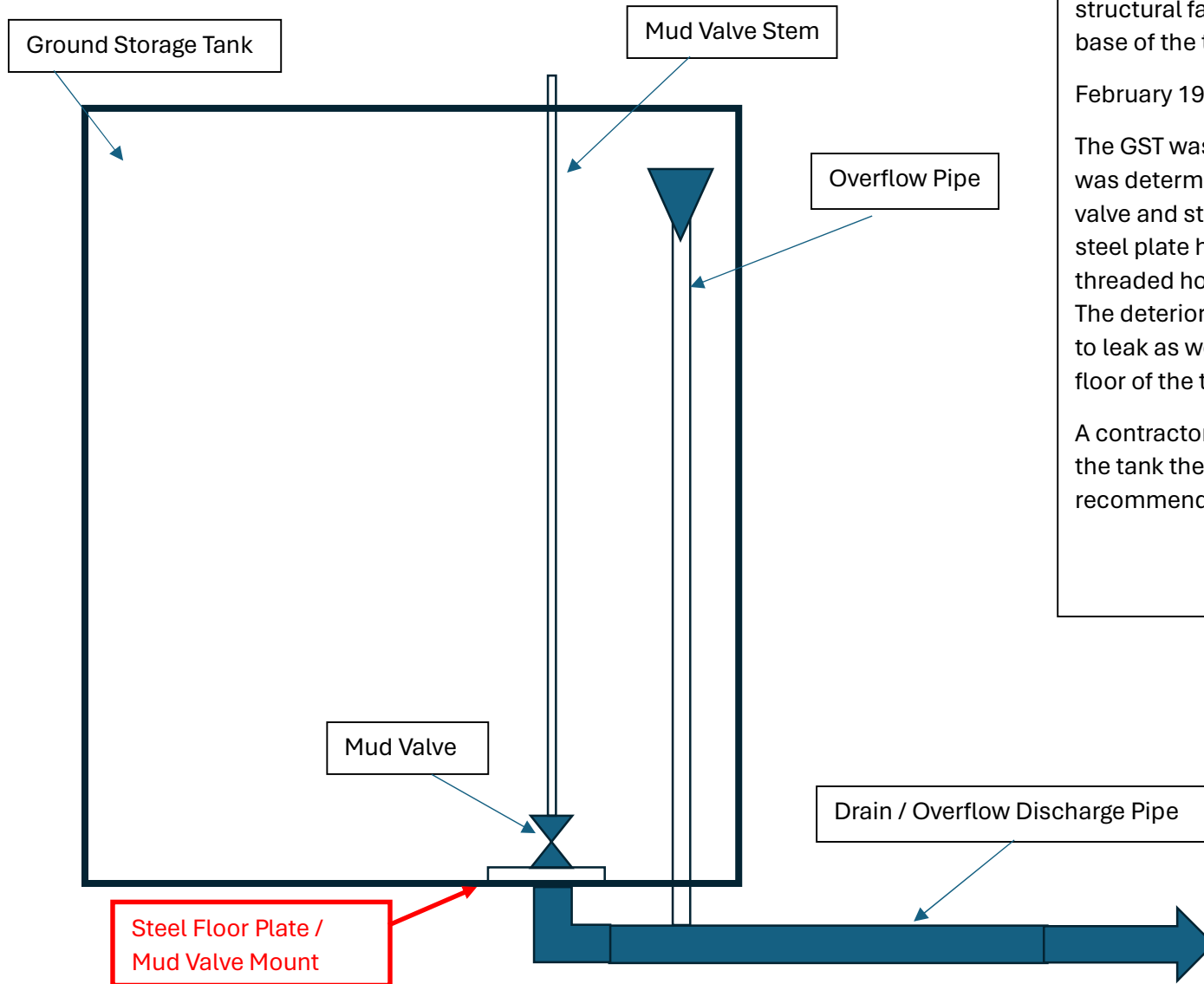






City of Sherman

Stephens Pump Station – Ground Storage Tank Leak



February 14, 2024:

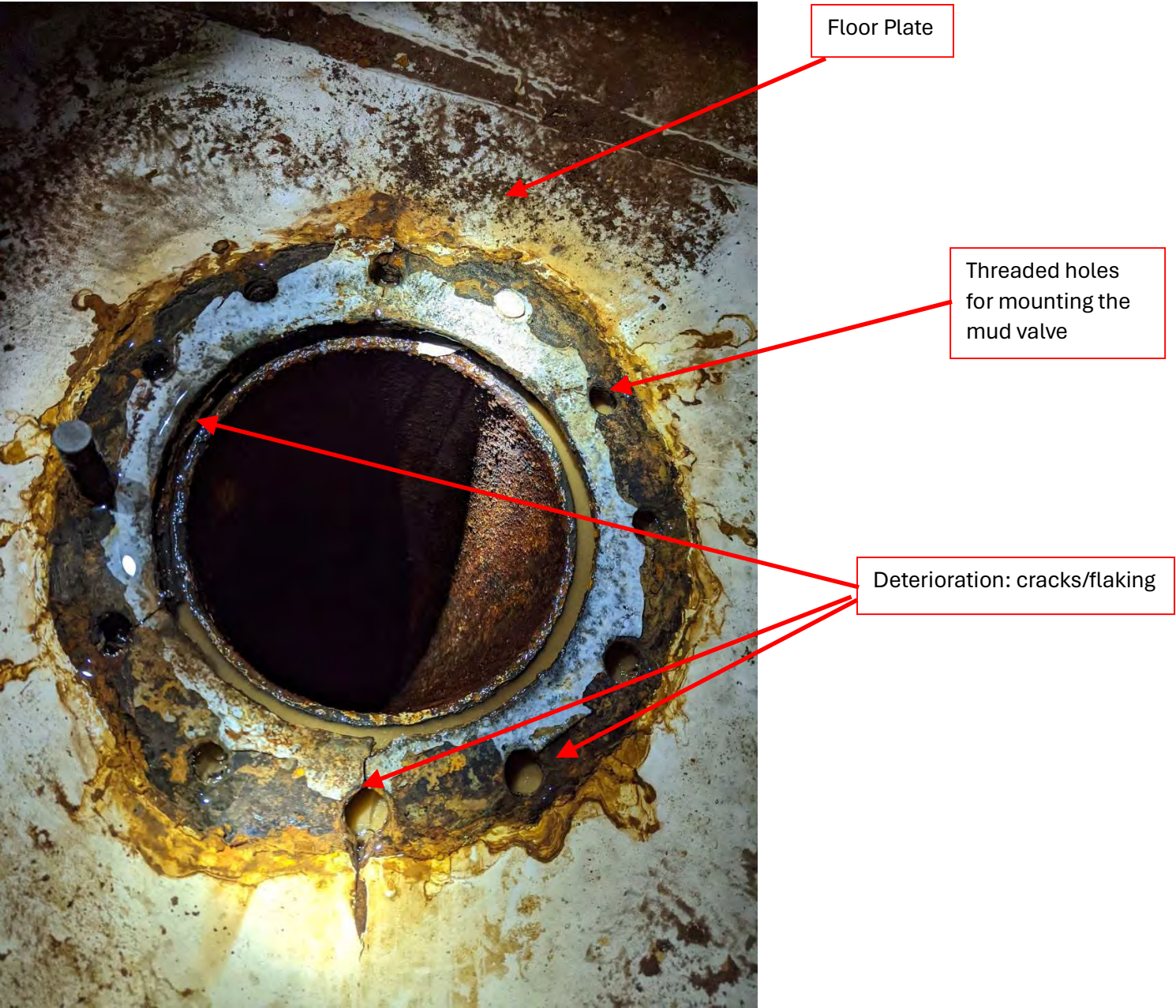
Stephens Pump Station GST experienced a structural failure and water was leaking at the base of the tank.

February 19, 2024:

The GST was drained for inspection. The leak was determined to be at the base of the mud valve and steel floor plate. It appears that the steel plate has deteriorated at and around the threaded holes used to fasten the mud valve. The deterioration allowed the mud valve seal to leak as well as water to pass through the floor of the tank.

A contractor has been scheduled to inspect the tank the week of 3/4/24 and provide recommendations for the repair.

2/19/24



April 19, 2024

Environmental Protection Agency – Region 6
Enforcement and Compliance Assurance Division
1201 Elm Street, Suite 500
Dallas, TX 75202-2102

ATTN: Sami Doupnik
Physical Scientist
Water Resources Section

REF: EPA SDWA Inspection Report for City of Sherman Public Water System TX0910006

Sami,

It was a pleasure to work with your inspection team on February 13-14, 2024. Thank you for your comments and observations presented in the Inspection Report. Please find our responses to the report attached to this letter.

If you have questions or require additional information, please contact me at your earliest convenience.

Sincerely,



Jim Cross
Water System Manager
City of Sherman Water Production Services

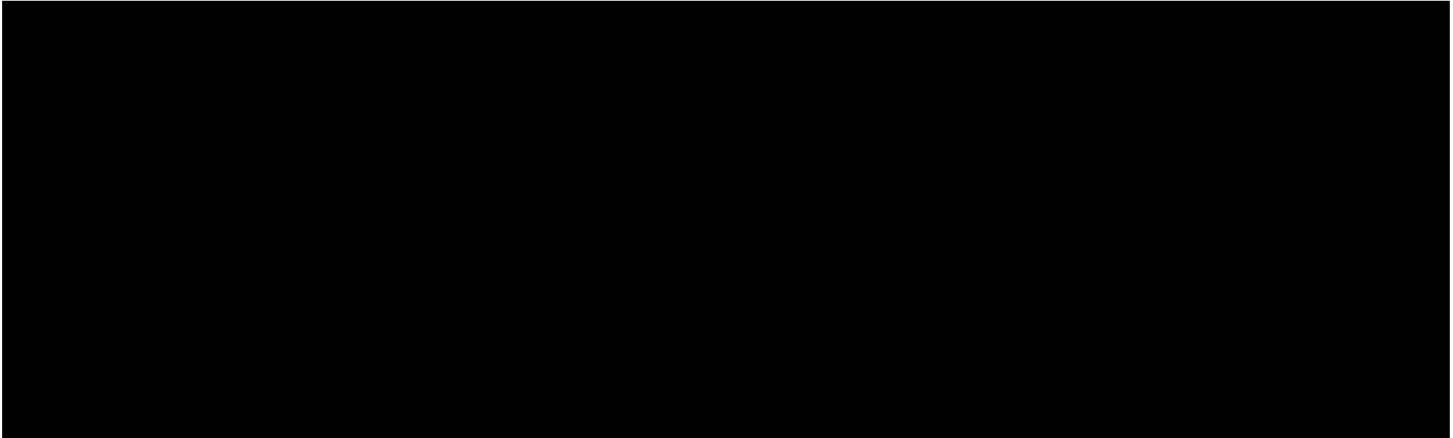
Cc Clint Philpot, P.E. Assistant City Manager
 Eric Sandberg, Public Works Manager
 Jayson Risner, Utility Maintenance Superintendent
 Shawn Hackworth, Information Technology Manager
 Tom Pruitt, P.E. Utility Engineer
 Brian Stevens, Facilities Manager
 Water Production Staff

Region 6 – Enforcement & Compliance Assurance Division

Inspection Report 02/13/24 – 02/14/24

City of Sherman PWS TX0910006

Ref: Responses to observations outlined in “Section III – OBSERVATIONS” of the EPA Inspection Report



- Asset Management – Ref: Inspection Report page 13 - 14
 - Observation 3
 - a) Staff agrees that a modernized CMMS / AMP system is necessary for City water, wastewater, and distribution maintenance management. Staff met with the City’s IT department and is actively searching for a consultant to drive the evaluation and selection of a CMMS software appropriate for the City’s needs. Selection, Installation, programming, training, implementation, and costs are to be determined.
 - Observation 4
 - a) The Utility Maintenance Department is currently addressing the data concerns in the current work order system. This was also discussed during the initial meeting regarding the search for a modern CMMS and should be improved when a new system is implemented.
- Hydrant Flushing – Ref: Inspection Report page 14 - 15
 - Observation 5
 - The hydrants noted at Home Depot and Premium Storage are privately owned and are not normally flushed by the city and will be removed from the dead end main flushing list. “DNF Metered” hydrants have meters attached, ie used by construction companies, etc. and are not flushed as DEM until the hydrant is no longer in temporary contractor use and the meter has been removed. All hydrants remain on the annual maintenance list.
 - The hydrant at address 5100 Marshall St. is in an industrial area. The business at this location has a high volume of monthly usage (approx. 10,000 gal/MO). Because of the location and high volume, this hydrant will be removed from the DEM flushing list. Also, this hydrant is an older model and was recently checked by Utility Maintenance. Though it was operational, it was reported “difficult to manipulate the valve stem”. Utility Maintenance made the decision to replace the hydrant at the next opportunity.

○ Observation 6

- The 2" Flush Valve at Bob Utter Ford that was not flushed to the state minimum was an oversight that was addressed early the next morning. The water quality specialist was instructed to return to the site and flush until an acceptable residual of 1.00 mg/L Total Chlorine was reached. Please see attached field log **ATTACHMENT 1**. There was also additional training and discussion with the individual and staff about the misstatement written on the field log of "High Water Age". There was no evidence to support the statement. A Disinfectant flow chart was designed after this incident to help prevent oversites like this from occurring in the future. Please see attached flow chart **ATTACHMENT 2**.
- 1915 Hwy 82 @ Dr. Pepper and 1604 Ann Ave. are examples of why we flush DEM and other mains to help identify high water age areas and minimize low residuals and as indicated in (290.46(l)), the City of Shermans Nitrification Action Plan. The disinfectant residuals were <1.00 our targeted goal however it does satisfy the required state minimum of 0.2 mg/L Free, or 0.5 mg/L total required. However again additional training with staff and flow charts were developed to help staff comply with the City of Shermans, Nitrification action plan, triggers, targets and goals that must be monitored and maintained. See **ATTACHMENT 3**
- Additional training with the Water Quality Department personnel has taken place to address the issues in this observation.

• Conventional Water Treatment Plant – Ref: Inspection Report page 15 - 16

○ Observation 7

- a) The Copper Sulfate line is now labeled as EARTHTEC. EARTHTEC is a copper sulfate product. See **ATTACHMENT 4**
- b) The Pre-Sedimentation basins drain to the on-site sludge ponds. Sludge ponds in turn drain to the sanitary sewer. Eventually, the sludge pond drain system will be disconnected from the sanitary sewer. The city has received a permit from TCEQ to discharge the concentrate into an open channel leading back to Lake Texoma. A Concentrate Discharge Pump Station project is currently in progress that when complete, will pump to the approved channel.
- c) The Rapid Mix vault directly downstream from the Pre-Sedimentation basin was scheduled to be demolished during the future "PKG 2" membrane plant expansion as it would have been in the way of new construction. When the decision was made to re-invest in conventional treatment, a Rapid Mix vault project was developed to build another vault in the vicinity but away from the site for new construction. Bids were solicited and received on 3/26/24 and the project has been awarded. Estimated completion is 1st QTR of 2025.
- d) The damaged containment was repaired as shown in the Inspection Report Appendix 4. The potassium permanganate labels were removed and replaced with EARTHTEC copper sulphate labels. See **ATTACHMENT 5** - picture of the new labels.

• Membrane (UF/RO) Treatment Plant – Ref: Inspection Report page 16

○ Observation 8

- a) RO injection points have been labeled to be visible from a distance. Please see **ATTACHMENT 6** – picture of the chemical injection labels
- b) The three injection points located in the Membrane Effluent Vault were labeled but difficult to see from the hatch. Labels have been added to improve visibility. See **ATTACHMENT 7** - pictures of the chemical injection tags.

- Finished Water Storage – Ref: Inspection Report page 17
 - Observation 9
 - a) Screens were added to the drains as noted in the report. All similar drains and vents were inspected.
 - b) Rubber gasket seals were confirmed. The broken conduit was temporarily repaired with electrical tape as noted in the report. Changing out the conduit will take place at the next opportunity.
 - c) Repairs to the grout and painting of the metal components were completed as noted in the report. See **ATTACHMENT 8**
- Fairview Site – Ref: Inspection Report page 17 - 20
 - Observation 10
 - a) Fairview GST has been taken out of service and work is in progress to address the observations made during the inspection.
 - Excavation has taken place to remove the dirt layer and expose the top of the tank. See **ATTACHMENT 9**
 - The grade around the tank has been lowered several inches below the top of the tank. See **ATTACHMENT 10**
 - b) Manholes / Accessways on top of the GST
 - Two new manholes will be installed and sealed. They will be located on opposite sides of the GST, one at the influent side and one at the effluent side.
 - Two vents will remain, and all other accesses will be removed.
 - Structural GST rehabilitation requirements will be reviewed by an engineer and planned accordingly. This includes options for meeting roof slope requirements.
 - French drain was installed completely around tank. See **ATTACHMENT 10**
 - The only well that feeds this GST is located on site. All other remote wells that fed the adjacent surge tank in the past have been plugged. The local well will be rerouted to feed the GST from the opposite side of the GST effluent / high service pump to maximize contact time. See **ATTACHMENT 10**
 - c) The surge tank connections to the GST will be plugged and the tank demolished and filled. See **ATTACHMENT 11**
 - d) The gap between the base of the well pedestal and well pad has been filled. See **ATTACHMENT 12**
 - e) The chlorine injection point will be relocated to feed the new well route. Injection point to be determined.
 - f) An updated tank inspection report will be provided to an engineer to be included in a rehabilitation project.
 - g) Doors / SCBA / Chlorine leak detectors
 - Plant Staff scheduled a meeting with the City's Facilities Maintenance Department to discuss the doors and windows observations. Facilities Maintenance scheduled a site visit with a door contractor. A proposal was submitted and accepted. When the contractor has received all required materials, the doors at all remote chlorine pump rooms will be replaced, will open outward, and include observation windows and crash bars. Anticipate this project to begin in May 2024
 - SCBA equipment is not stored at the remote chlorine storage rooms. Two authorized and trained operators are required to distribute, store, handle and connect the #150 chlorine bottles used at remote ground water chlorine rooms. These operators are responsible to have a full face respirator but not authorized to

respond to a chlorine emergency rising to the level of requiring SCBA without the required backup emergency team in place. When a chlorine emergency is reported at a remote site then the Response Coordinator or Chief Operator will notify and dispatch the response team with the appropriate PPE and other equipment. The City SOP for chlorine Emergency Teams is as follows:

- **Emergency Preparedness Plan**
 - **SECTION VII. 5 Emergency Teams**
 - **Rescue team members must wear the following personal protective equipment before entering an area: self-contained breathing apparatus (SCBA). The rescue team will work on the buddy system with a backup buddy system. The backup rescue team will be dressed out in the same safety equipment as the primary rescue team.**
 - **Remote Site Chlorine SOP**
 - **Personal Protective Equipment**
 - **Self-Contained Breathing Apparatus (SCBA)**
 - **A worker must use an SCBA when an emergency chlorine leak has developed, and the airborne chlorine concentration is unknown or is measured at more than 10 ppm. A worker must not enter a contaminated atmosphere until both the qualified worker and teammate, AND, a qualified backup team are equipped with the appropriate personal protective equipment including SCBA, and ready to respond to the emergency.**
 - Research is currently in progress for chlorine detectors with local alarms at each remote chlorine room. If possible, the detectors/alarms will be integrated into the SCADA system to allow full time monitoring.
 - h) A threaded vacuum breaker has been attached to the hose bib. City staff performed additional inspections and insured vacuum breakers were installed on all hose bibs. See **ATTACHMENT 13** as representative of the type placed on all hose bibs found delinquent.
- Stephens Site – Ref: Inspection Report page 20 - 21
 - Observation 11
 - a) Stephens GST experienced a structural failure at the base of the drain valve. The tank was drained and the valve flange connection at the floor/drainpipe was found to have deteriorated and allowed a substantial leak to enter under the tank floor and discharge around the base of the tank. See **ATTACHMENTS 14 AND 15**. The drain valve was removed and a steel plate was welded in place to plug the opening until a permanent fix can be scheduled. The GST was disinfected and placed back into service. Garver Engineering has been contracted to provide specifications to rehabilitate the GST. The rehab will be scheduled for the 4th QTR of 2024 – 1st QTR 2025. The rehab will include the observations made during the inspection.
 - b) The voids at the base of the tank will be addressed during the drain repairs/rehab outlined in response (a).
 - c) Security and Housekeeping:
 - The IT Department will contact a consultant for options and recommendations in installing security camera(s).

- The security fence surrounding the site originally ended at both sides of the control building exposing the face of the building. The fence was relocated and now the building is recessed completely inside of the fence. See **ATTACHMENT 16**
- The foliage and vegetation was removed from the surrounding security fence. See **ATTACHMENT 17**
- The storage tank will be rehabilitated as outlined in response (a) to include
 - sandblasted and repainted
 - ladders and hatches modified/replaced to meet standards
- d) The chlorine injection vault will be part of the rehabilitation outlined in response (a)
- e) SCBA / Doors / Chlorine leak detectors
 - SCBA equipment is not stored at the remote chlorine storage rooms. Two authorized and trained operators are required to distribute, store, handle and connect the #150 chlorine bottles used at remote ground water chlorine rooms. These operators are responsible to have a full face respirator but not authorized to respond to a chlorine emergency rising to the level of requiring SCBA without the required backup emergency team in place. When a chlorine emergency is reported at a remote site then the Response Coordinator or Chief Operator will notify and dispatch the response team with the appropriate PPE and other equipment. The City SOP for chlorine Emergency Teams is as follows:
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- Research is currently in progress for chlorine detectors with local alarms at each remote chlorine room. If possible, the detectors/alarms will be integrated into the SCADA system to allow full time monitoring
- f) A threaded vacuum breaker has been attached to the hose bib. City staff performed additional inspections and insured vacuum breakers were installed on all hose bibs. See **ATTACHMENT 13.**

SUMMARY:

As noted throughout the Inspection Report, and where possible, Water Plant personnel immediately took action to mitigate the Inspection Team's observations. Continued efforts are ongoing as outlined in the responses. Some observations require additional research, rehabilitation, design and in some cases additional funding in order to be resolved.

ATTACHMENTS

Date	11/8/2023	Production	ok
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113-1522 N Woods.

Flush Site Field Data										Reason for Flushing									
LOCATION	Fire Dept ID #	MAIN	SOURCE	WATER ZONE	SL1000	Colori meter	CL2 Tabs	Diffuser Used	Routine	Flush	Response to Work Order	Fire Hydrant Sched Maint	Work Order Required						
129	Bob Utter Ford.	FV	2"	Surface		6		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No		
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet											
8:45	8:47	2 min.	1435	348 min.	173	69204	2" x .5 x 1'												
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)										
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)										
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL		
0.08	1.32																		

Flush Site Field Data										Equipment Used										Reason for Flushing									
Flush #	LOCATION	Fire Dept ID #	MAIN	SOURCE	WATER ZONE	SL1000	Colori meter	CL2 Tabs	Diffuser Used	Routine	Flush	Response to Work Order	Fire Hydrant Sched Maint	Work Order Required															
60	1616 Hilton @ East End	3130-006	6"	Ground	GW		6		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No											
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet																					
1400	1402	5 min.	1412	10 min.	331	3310	14.00	2																					
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)																				
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)																				
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL												
1410	1.72																												

Flush Site Field Data										Equipment Used										Reason for Flushing									
Flush #	LOCATION	Fire Dept ID #	MAIN	SOURCE	WATER ZONE	SL1000	Colori meter	CL2 Tabs	Diffuser Used	Routine	Flush	Response to Work Order	Fire Hydrant Sched Maint	Work Order Required															
61	2105 Texoma Pkwy & Mildred	3030-018	6"	Surface	NWS		6		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No											
ARRIVAL TIME	FLUSH START TIME	TIME TO CLEAR	FLUSH END TIME	MIN FLUSHED	GPM	GALLONS FLUSHED	Height	X Feet																					
1415	1417	2 min.	1428	11 min.	537	5507	12.00	3																					
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)																				
TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	NITRIFICATION MONITORING (NAP)																				
FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL	FREE	TOTAL												
0.99	1.29																												

Performed By:

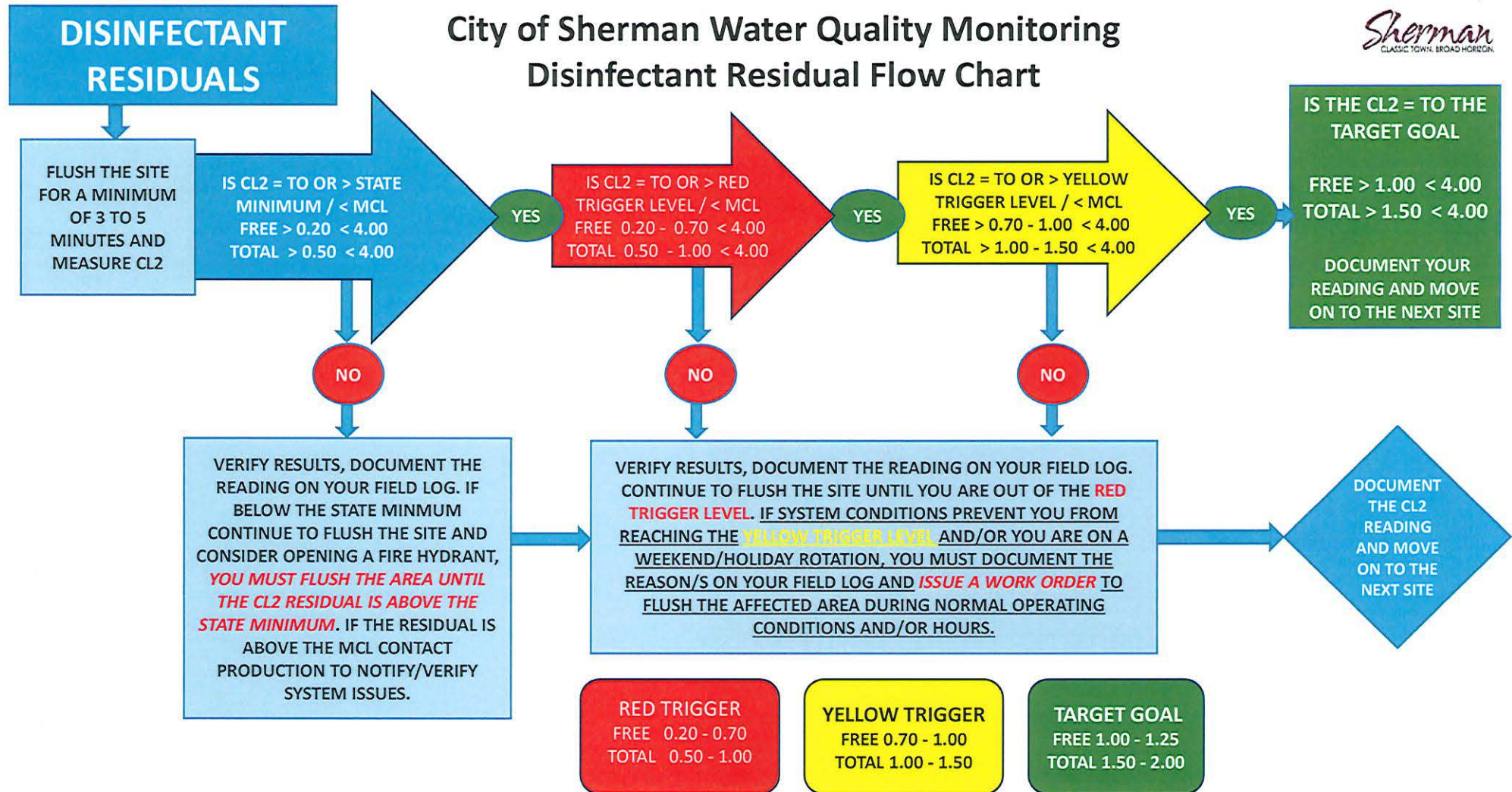
Mike Kulvinsky

Kenneth Louman

ATTACHMENT 2

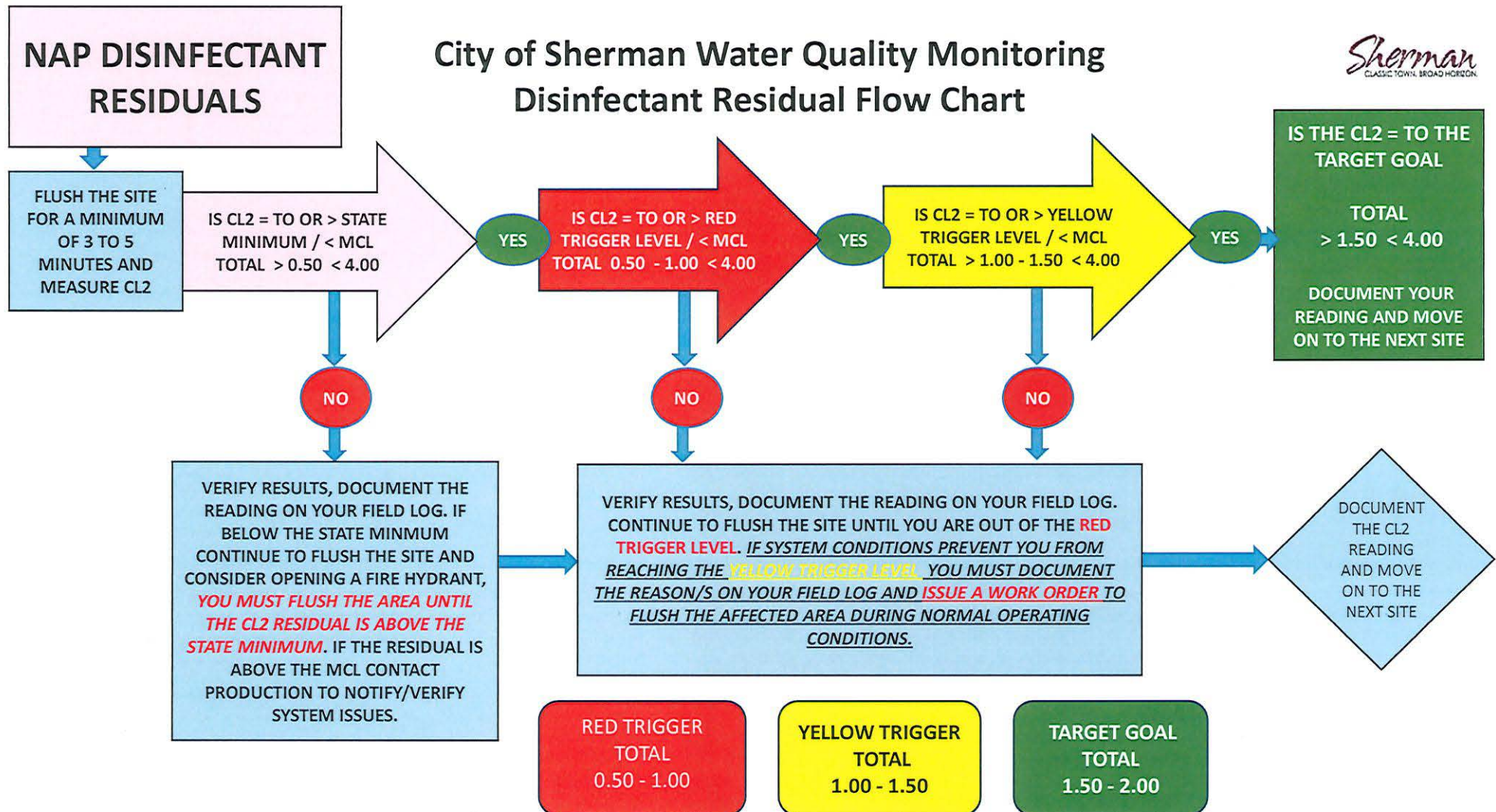


City of Sherman Water Quality Monitoring Disinfectant Residual Flow Chart



ATTACHMENT 3

City of Sherman Water Quality Monitoring Disinfectant Residual Flow Chart



ATTACHMENT 4

EPA Inspection February 13-14, 2024

Raw Water Vault: EarthTEC (Copper Sulphate)

Before: See EPA Inspection Report Appendix 1 Photo Log – Photo 1

After



Chemical Room: Copper Day Tank Mis-Labeling

Before



After



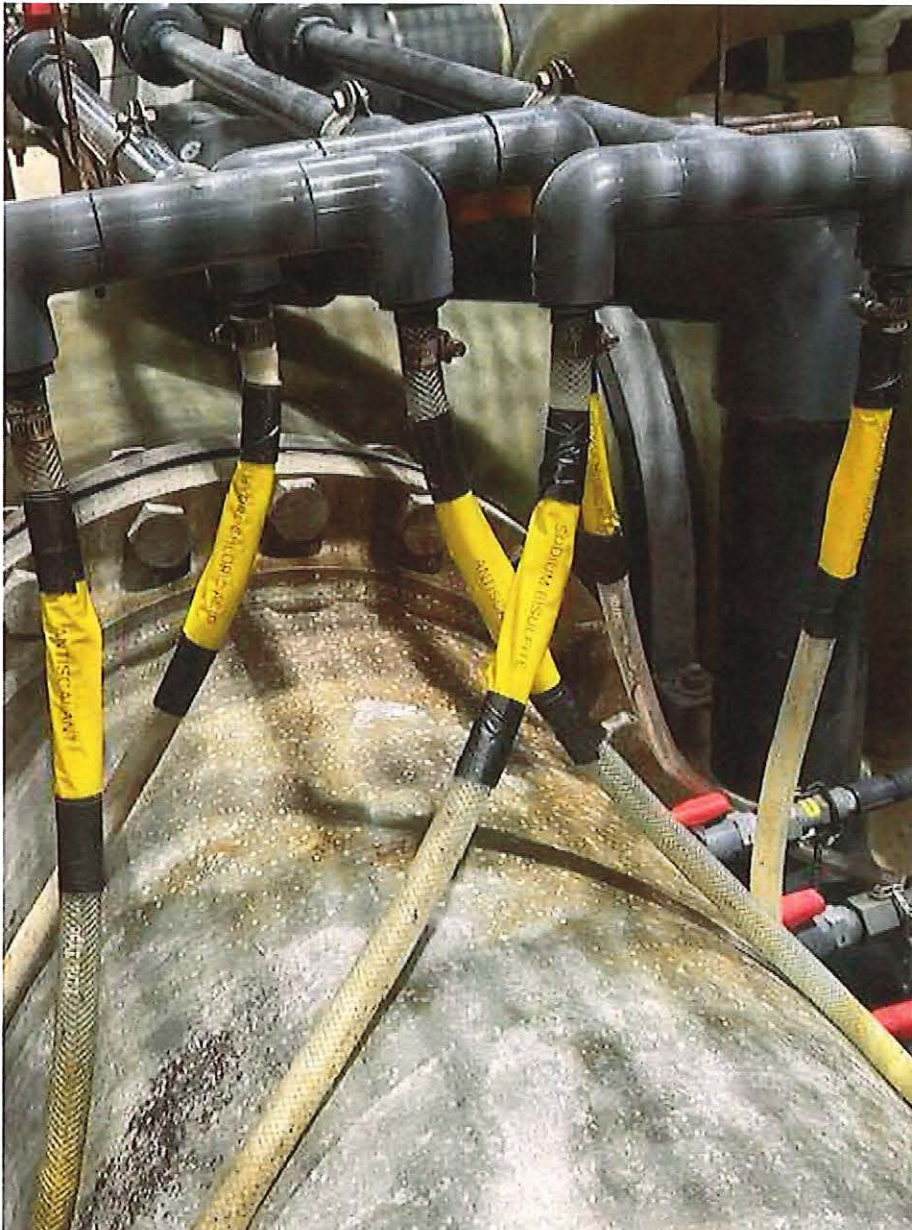
ATTACHMENT 6

EPA Inspection February 13-14, 2024

RO MEMBRANE: Injection points not clearly labeled

Before: See EPA Inspection Report Appendix 1 Photo Log –
Photos 17-18

After



ATTACHMENT 7

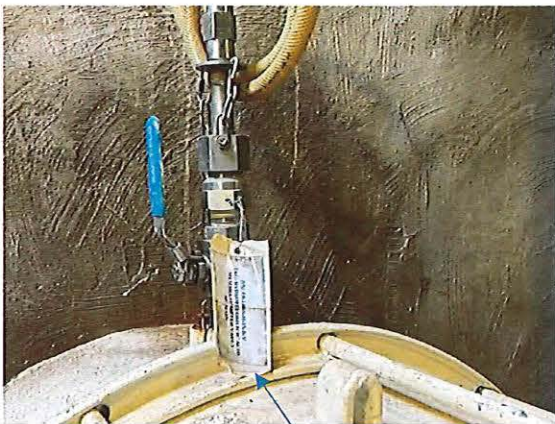
EPA Inspection February 13-14, 2024

MEMBRANE EFFLUENT VAULT: Chemical injection lines appear to not be labeled

Before



Chemical injection lines had tags labeling the chemical injection during inspection but difficult to see from the hatch.



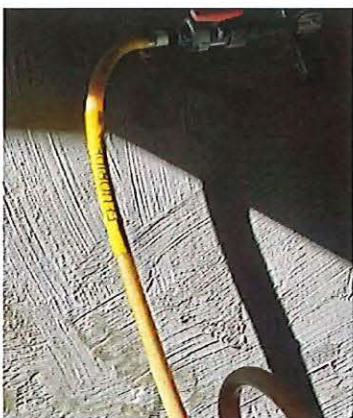
North – Fluoride Injection Tag



South – Caustic Injection Tag

South – Phosphate Injection Tag

After:



ATTACHMENT 8

EPA Inspection February 13-14, 2024

HIGH SERVICE PUMPS: Grout deterioration and paint flaking

Before



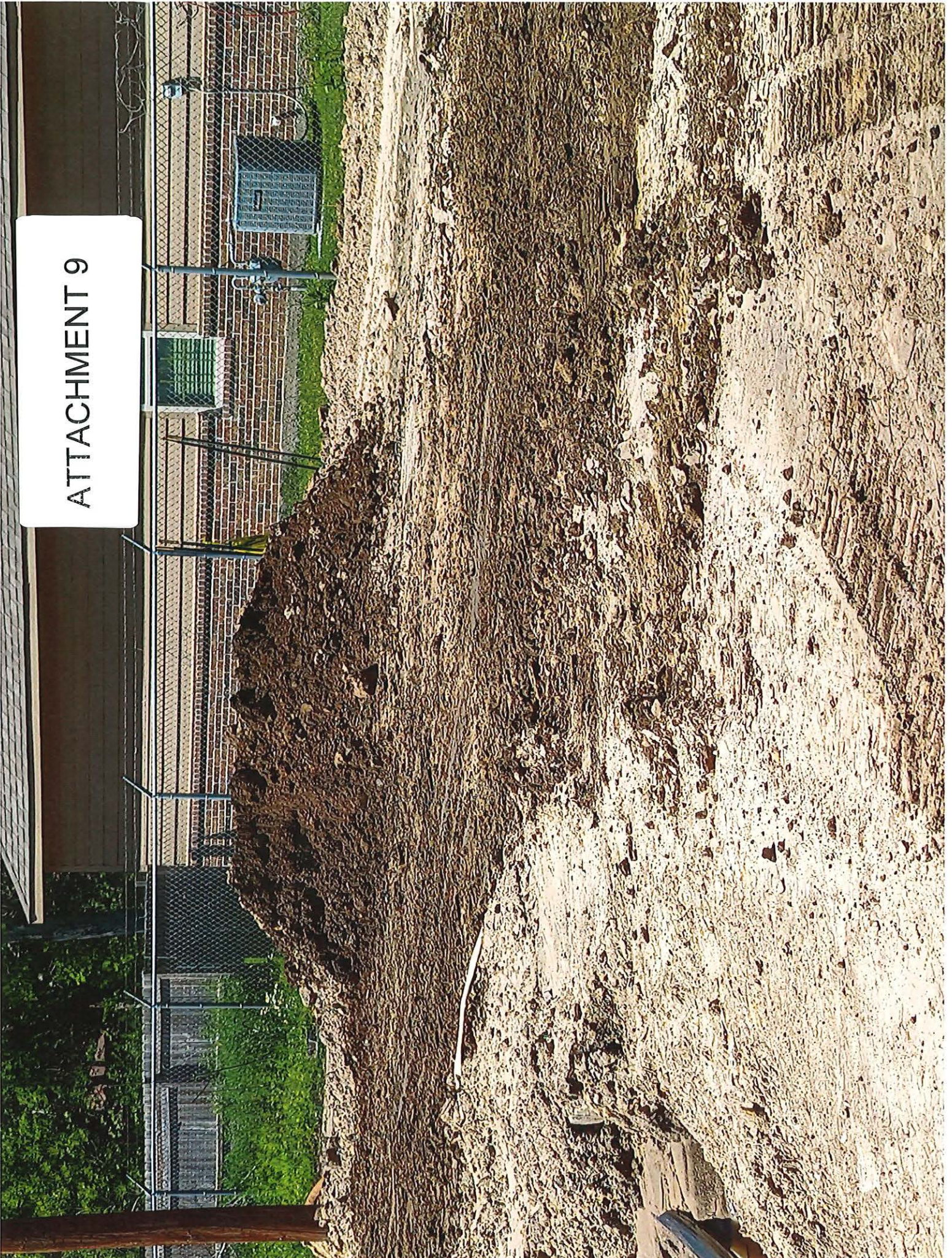
HSP 4-5

After



HSP 3-4-5

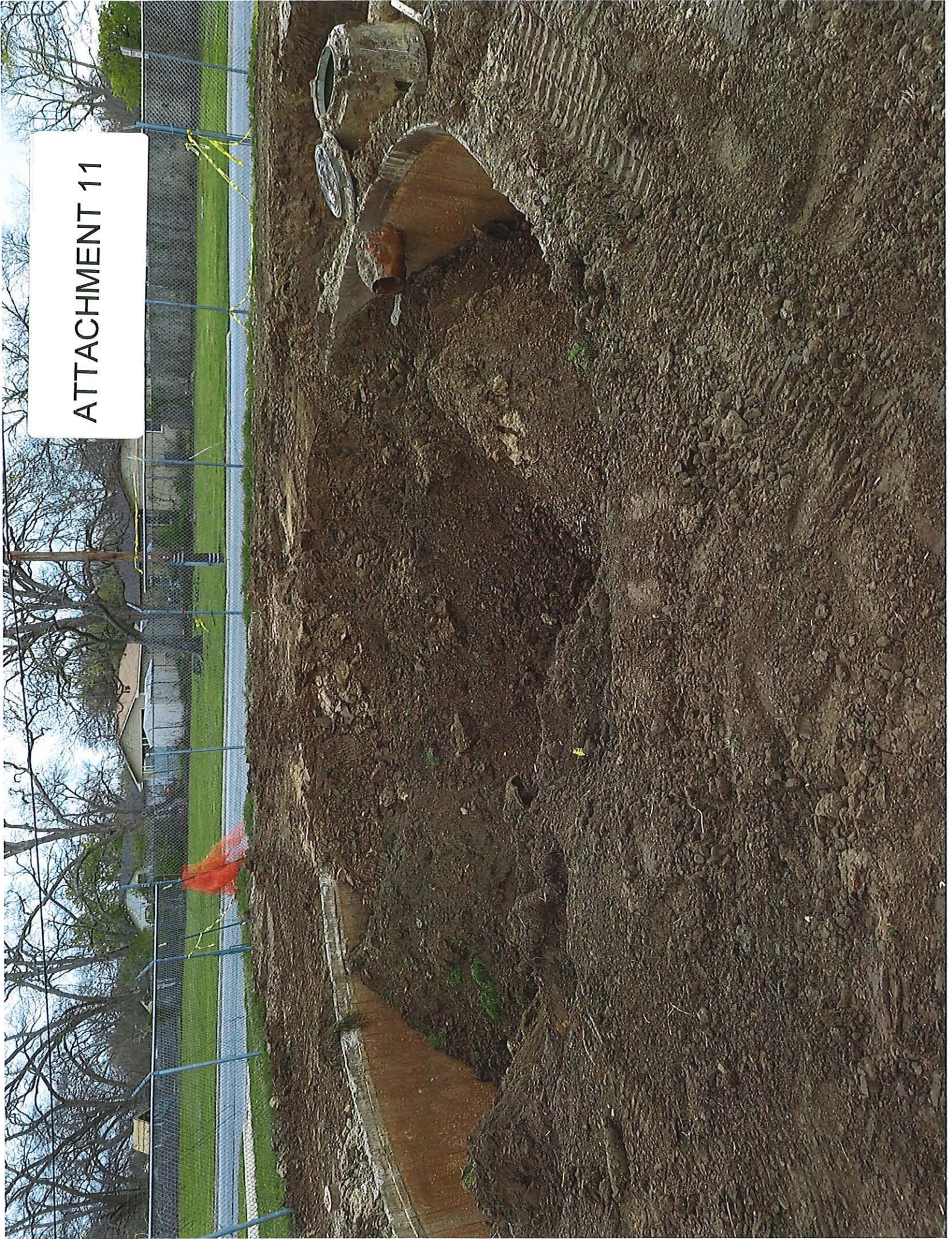
ATTACHMENT 9



ATTACHMENT 10



ATTACHMENT 11



EPA Inspection February 13-14, 2024

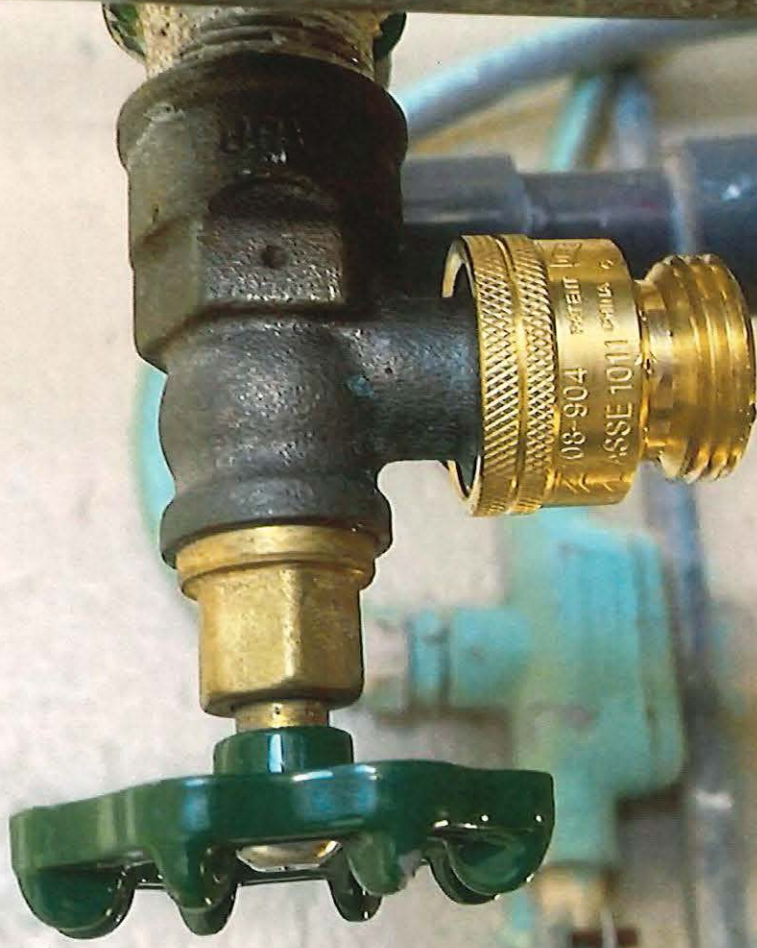
Fairview Site – Gap between the base of the well pedestal and well pad

Before: See EPA Inspection Report Appendix 1 Photo Log–Photo 45

After



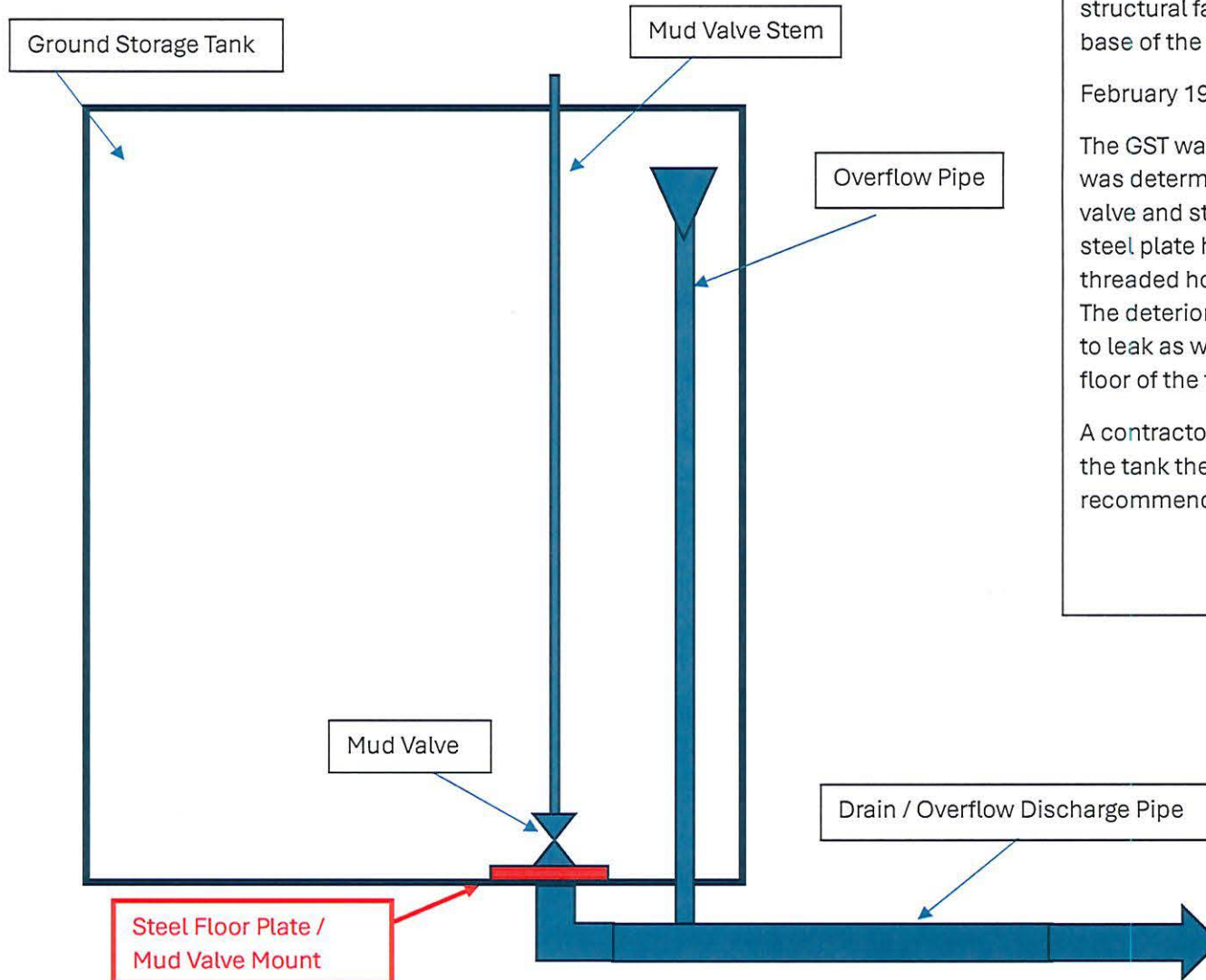
ATTACHMENT 13



ATTACHMENT 14

City of Sherman

Stephens Pump Station – Ground Storage Tank L



February 14, 2024:

Stephens Pump Station GST experienced a structural failure and water was leaking at the base of the tank.

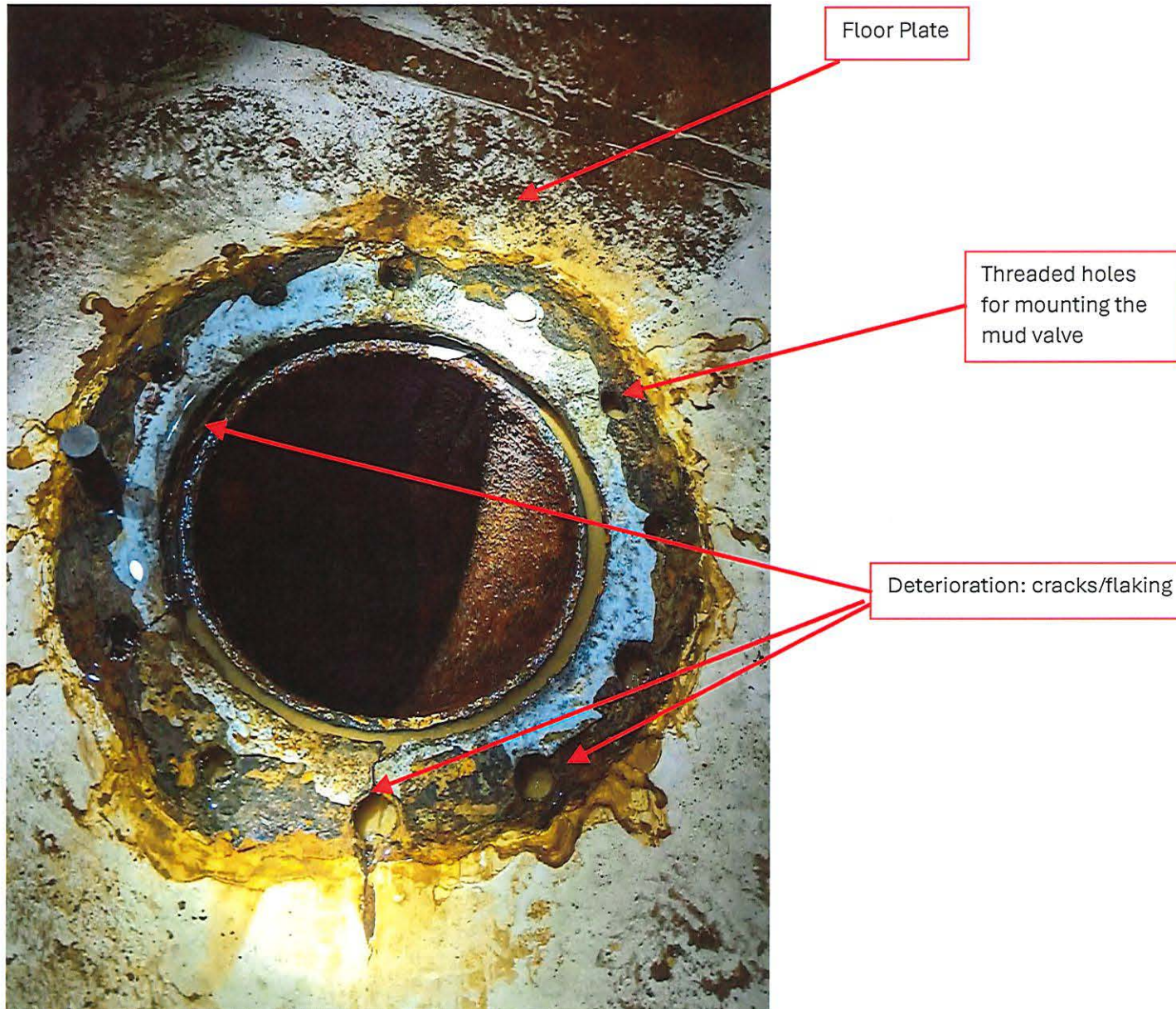
February 19, 2024:

The GST was drained for inspection. The leak was determined to be at the base of the mud valve and steel floor plate. It appears that the steel plate has deteriorated at and around the threaded holes used to fasten the mud valve. The deterioration allowed the mud valve seal to leak as well as water to pass through the floor of the tank.

A contractor has been scheduled to inspect the tank the week of 3/4/24 and provide recommendations for the repair.

2/19/24

ATTACHMENT 15



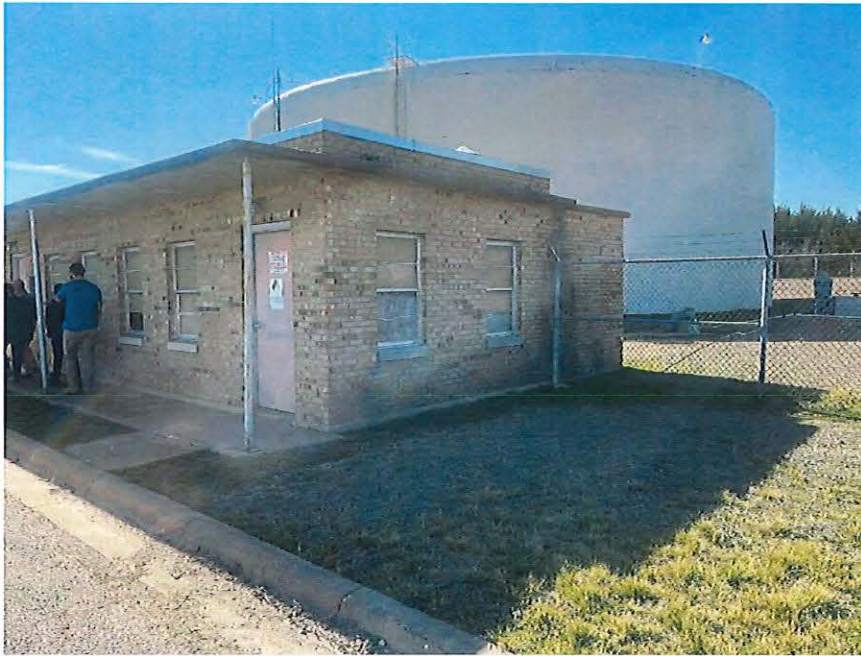
ATTACHMENT 16

EPA Inspection February 13-14, 2024

Stephens GW Pump Station Security Improvement – Fence Relocation

Action: The security fence ended at the building allowing access without entering the fence. Additional fencing was added to extend the fenced area and prevent access to the building without entering the fenced area

Before



After

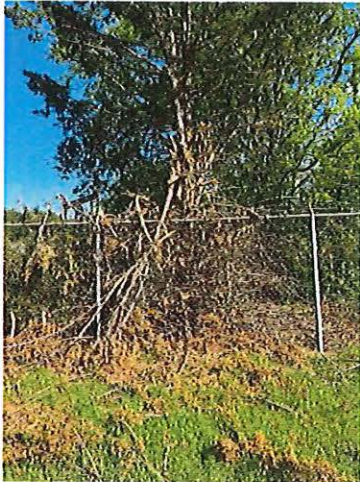


EPA Inspection February 13-14, 2024

Stephens GW Pump Station Security Improvement – Vegetation in/on the fence

Action: The vegetation growing through and on the security fence has been removed.

Before: See Inspection Report Appendix 1- Photo 49



After

