REPORT OF COMPLIANCE EVALUATION INSPECTION

AT
City of Liberal Public Water Supply
1401 East Pine
Liberal, Kansas 67901

Public Water Supply ID#: KS2017504

May 14-15, 2025

BY
U. S. ENVIRONMENTAL PROTECTION AGENCY
Region 7
Enforcement and Compliance Assurance Division (ECAD)

INTRODUCTION

I conducted a Public Water Supply (PWS) Compliance Evaluation Inspection (CEI) at the City of Liberal's public water system (System) on May 14 through 15, 2025. The inspection was conducted under the authority of Section 1445 of the Safe Drinking Water Act (SDWA), in accordance with the EPA Region 7 Standard Operating Procedures, and as part of the EPA's National Enforcement and Compliance Initiative (NECI). This narrative report and attachments present the results of the inspection.

PARTICIPANTS

City of Liberal
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Brad Beer, Assistant City Manager
Melanie Lunceford, Water Administrative Assistant
Tim Lunceford, Director of Information Technology

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System Description

The City of Liberal's PWS (KS2017504) is classified as a community water system (CWS) that is owned and operated by the City of Liberal. According to the Kansas drinking water watch (DWW) website the system directly serves a population of approximately 19,640 people through 7,364 service connections. The system also sells water to the National Beef Packing Company, LLC that has a population equivalent of 3,086. The system's average daily demand is approximately 2.6 million gallons per day (MGD) and the highest monthly average usage is approximately 5-6 MGD. According to DWW, the system is listed with a Total Emergency Capacity of 3.55 MGD. According to Mr. Rosales, based on each well's production allocations

from the Kansas Department of Agriculture's (KDA) Division of Water Resources (DWR), the system has current source water capacity to meet current and future demands.

The system is a groundwater treatment system that sources raw water from seventeen (17) active groundwater wells. The system has five 'Stations' numbered #1 through #5. Each Station is sourced from three individual wells. Station #1 is served by Wells #1-1, #1-6, and #1-7, Station #2 is served by Wells #2-7, #2-8, and #2-9, Station #3 is served by Wells #3-3, #3-4, and #35, Station #4 is served by Wells #4-3, #4-4, and #45, and Station #5 is served by Wells #52 and #53. In addition to the 14 wells serving the five Stations, the system has three additional wells (Wells #61, #62, and #63) that supply water directly to the distribution system. The system is equipped with multiple wells with multiple power supplies including electric, natural gas, and diesel fuel to ensure back up power capabilities, including Wells #17, #27, #29, and #34 that are equipped with natural gas-powered pumps.

Treatment, in the form of chlorine disinfection, occurs at each Station. Each Station is equipped with a chlorine treatment building where gas chlorination is conducted. At Stations #1 through #4, disinfected or treated water is then transferred to the Station's ground storage tank with baffling, that acts as a clearwell or detention basin, to allow for disinfection contact time (CT). After receiving adequate CT, the treated water is sent to the respective section of the distribution system. Station #5 provides disinfected water to a large diameter water main (24" line) that flows to the city limits for approximately 1 mile, where CT occurs. The primary four Stations are located in the four quadrants of the City (Northwest, Northeast, Southeast, and Southwest) and Station #5 provides additional water to the northern section of the city. Stations #1 through #4 are equipped with a sand/gravel chamber or 'sand trap', that collects rocks and sand with baffles, to prevent the solids from entering the ground storage tank and ultimately the distribution system. High service pumps at the Stations, transfer finished water from the Stations to the distribution system from the points of entry (POE).

Wells #61, #62, and #63 are equipped with gas chlorine equipment to treat the individual well sources prior to the water being sent to the distribution system from each POE.

The system's distribution system components include over 170 linear miles of piping that range in sizes from 2" to 24" in diameter, 800 fire hydrants, and 7,200 isolation valves. Water main materials consist primarily of High-Density Polyethylene (HDPE), C900 [blue polyvinyl chloride (PVC)], cast iron, and asbestos cement (AC). Finished water storage, in the distribution systems, consists of one elevated storage tower with a one million-gallon (MG)capacity and the four Stations. The ground storage tanks (GST) of Stations #2, #3, and #4 have a capacity of 250,000 gallons and Station #1 has two GSTs with 500,000 gallons and 250,000 gallons. The total capacity for the system equals 2.5 million gallons or approximately one day of storage for an average daily demand of the system. The system utilizes a Supervisory Control and Data Acquisition (SCADA) system to monitor and control the water treatment and distribution processes.

According to the State of Kansas operator certification requirements, the City of Liberal's drinking water system requires an operator certification of a Class IV Certification, to operate and oversee the system. Mr. Rosales is designated as the operator in charge and holds the required Class IV certification. The system employs an additional six operators that hold the Class IV certification and has an adequate number of back up operators. Mr. Rosales serves as

the Utilities Director of the City of Liberal Water Department and supervises the operation and maintenance of all aspects of the water system, including supply and distribution. The system employs a total of 16 staff, including Mr. Rosales, that are certified at various levels. The system conducts all maintenance and repairs of the system as equipment allows but will bring in contract support if necessary to complete or assist with repairs.

Compliance History

The facility was last inspected by the Kansas Department of Health and Environment on July 27, 2022, when a Sanitary Survey (SNSV) was conducted. The SNSV report did not identify any Significant Deficiencies (SD), but one Recommendation regarding soil erosion below the finished water storage overflow was noted in the SNSV Report.

The system addressed the one recommendation prior to the survey report being issued. The 2022 SNSV report and system response are provided in Attachment 2.

A review of Safe Drinking Water Information System (SDWIS) violation data (Attachment 3) documented that, in the past five years, the system received two monitoring and reporting violations, during the monitoring period of January 2021 through December 2021. The violations appeared to be for failing to conduct monitoring for the parameter of Nitrates. According to SDWIS, this violation was returned to compliance on February 15, 2022.

NOTICE OF INSPECTION

State Notice

On June 2, 2025, Cathy Tucker-Vogel with the KDHE was notified, in writing, of the EPA's intention to inspect the City of Liberal's PWS, pursuant to Section 1445(b)(2) of SDWA, 42 U.S.C. § 300j-4(b)(2).

Public Water System Notice

On April 29, 2025, Mr. Rosales was contacted by telephone and notified via email (Attachment 4), of the EPA's intention to conduct the inspection, pursuant to Section 1445(b)(1) of SDWA, 42 U.S.C. § 300j-4(b)(1).

INSPECTION PROCEDURES

Opening Conference

On May 13, 2025, I arrived with Ms. Acord at the City of Liberal Water Department office building at approximately 8:30 a.m. and met with Mr. Rosales and Ms. Lunceford. During the opening conference, I introduced myself and presented my EPA credentials. I explained the purpose of the inspection was to evaluate the system's compliance with the SDWA, including compliance with Section 1433 of the SDWA, also known as the American Water Infrastructure Act (AWIA). I also explained the scope of the inspection, which would include a review of associated records, discuss operation and maintenance practices including technical, managerial, and financial information, and visual observations of system components and facilities.

I began the inspection with a review of the system's applicable records. Following the records review, I inspected the system's components and facilities including the source water wells, treatment equipment, finished water storage structures, and consecutive connections. After inspecting the system components and associated system records, I conducted an exit conference with the system to discuss and explain the preliminary findings of the inspection.

FINDINGS AND OBSERVATIONS

During the inspection, 59 photographs were taken. The photographs taken during the inspection and the photograph log are included as Attachment 1 of this report. The findings, unless otherwise specified below, were noted during the inspection and were discussed with the system staff during the exit conference, prior to the conclusion of the inspection, and provided to the system in the Notice of Preliminary Findings (NOPF) included as Attachment 5. This narrative inspection report provides a summary of the observations and findings identified as a result of the compliance inspection.

Operations and Management

The Liberal PWS is owned and operated by the City of Liberal. The city's Water Department oversees the operation and maintenance of the system including the source, treatment, and distribution of water to the city. The city creates an annual budget for the Water Department and Mr. Rosales explained that the system can make any necessary repairs or upgrades for repairs up to $10,000. He explained, if repairs exceed $10,000, approval is needed by the City Commission, but they are normally approved quickly. He explained that the system has implemented a proactive approach to preventative maintenance of the drinking water system components and that the City has contracted with companies to perform regular inspections and repairs of finished water storage structures and the wells. He explained the system's budget is sufficiently funded to adequately cover estimated operation and maintenance (O&M) costs and repairs of the system and that the city's water rates are structured to appropriate fund the budget. Ms. Lunceford provided the current water rate structure and noted that the system incorporates a gradual rate increase of 3% to ensure State Revolving Fund (SRF) eligibility. Mr. Rosales explained that the system has a Capital Improvement Plan (CIP) and Main Replacement Plan and was in the process of completing a main replacement project to replace 4" cast iron mains with 6" C900 and HDPE pipe. He also explained that in the next five years two additional projects were planned to include a 2,800 linear feet main replacement and a 7,900 linear feet main replacement project. Mr. Rosales explained that Water Department staff conducted daily inspections of water system components, record their observations and measurements, and conduct repairs when they are identified. He provided multiple checklists and log sheets that staff regularly complete to document their activities.

A review of the system's record management practices was conducted during the inspection. Overall Mr. Rosales was able to provide the records requested; however, these records appeared to be stored primarily in his email server and were not always readily accessible or retrievable. I recommended that the system consider establishing a centralized records system to ensure the records are readily accessible and provide access to additional staff.

American Water and Infrastructure Act (AWIA)

The inspection began with review and discussion of the system's Risk and Resiliency Assessment (RRA) and the Emergency Response Plans (ERP) to determine whether they meet the criteria established under AWIA Section 2013. The requirements of the RRA and ERP are described at https://www.epa.gov/waterresilience/awia-section-2013.

The system provided me with a Vulnerability Assessment dated August 16, 2007. According to EPA records, the system self-certified on June 1, 2021, that the RRA had been developed. I reviewed the Vulnerability Assessment during the inspection and determined that the assessment did not have all of the required information according to SDWA 1433 (a)(1)(A)(i) through (vi). The assessment appeared to be developed for compliance with the 2002 Bioterrorism Act, with outdated contact information, and missing components required by the 2018 American Water and Infrastructure Act (AWIA), particularly related to natural hazards. I provided Mr. Rosales with a link to the EPA's Vulnerability Self-Assessment Tool (VSAT) https://vsat.epa.gov/vsat/ and explained that the VSAT can be used to develop a RRA specific to the system. Based on the review of information provided, the system's RRA did not appear to meet all of the requirements of SDWA 1433(a).

On June 1, 2021, the system also self-certified with the EPA that the ERP had been developed. During the inspection, I evaluated the system's ERP that was dated March 3, 2010, and the system's Emergency Water Supply Plan to determine if the plans met all of the ERP requirements pursuant to SDWA 1433(b). The contact information in the ERP had recently been updated in August 2024, and the plans partially addressed the ERP requirements. However, based on these observations, I determined that the system's ERP did not meet all of the requirements of SDWA 1433(b)(1 through 4). I explained to Mr. Rosales that the EPA has developed an ERP template with instructions to assist systems: https://www.epa.gov/waterutilityresponse/develop-or-update-emergency-response-plan#DW .

The findings from the review of the RRA and ERP were discussed with Mr. Rosales at the exit conference and identified on the NOPF, as Findings #1 and #2, and provided to the system.

Source Water

As noted in the system description above, the City of Liberal appears to have an adequate supply of water to meet the demands of the system. Messrs. Beer and Rosales explained that the area is currently in a drought and that the system has a Municipal Water Conservation Plan incorporated into the municipal code, but the city has not required implementation of water restrictions. If necessary, the city can enforce the water restrictions listed in the conservation plan. They explained that currently the city has encouraged a voluntary or recommended water restriction, but the current supply was adequate to meet demands. Mr. Rosales explained that each well is allocated a specific gallon usage per year, and he noted that the city exceeded the allocated usage for two wells the previous year. He explained that because the city was required to pay a fine to the KDA, well usage is tracked more closely and well usage will be spread out to prevent over usage.

Mr. Rosales explained that the well houses are inspected daily by system staff and chlorine residuals recorded and the non-electrical well pumps (diesel and natural gas) are inspected and maintained to ensure proper operation. He explained that the wells are on a preventative maintenance schedule and the city has a contractor who inspects and repairs two wells per year. Mr. Rosales explained that the city has contracted with Walters Irrigation, Inc. to conduct the

well component inspection and make repairs and he provided an invoice for a recent inspection. The invoice is maintained in the ECAD Facility Site File for the system.

A tour of each of the wells was conducted to observe the physical security, vulnerability, and resiliency of the system's sources, the condition of the well and its components, and any potential sanitary issues or situations that could cause contamination of the well or water source.

Each well was located inside a fenced and secured area, with limited access. Each well was located inside a secure well house to protect the well components from precipitation and freezing. Each well house was structurally sound and adequately sized to allow for maintenance or replacement of equipment. Warning signs were present on the exterior of the well houses, where gas chlorine disinfection is conducted at Wells #61, #62, and #63, to notify the public of chlorine on the premises. Each of the wells were equipped with meters, check valves, isolation valves, sampling points, casing vents, draw down tubing, pressure relief valves, pressure gauges, and pump shaft cooling water mechanisms.

During the records review, I asked Mr. Rosales about the system's preventative maintenance processes and if daily, weekly, or monthly maintenance checks are conducted and documented at the well sites. He explained that the Supply Staff conduct daily checks at every well and operators complete a daily checklist that documents well conditions and maintenance completed. He provided me with a copy of a daily log sheet, where staff record their observations at well sites to document and record the coolant and oil reservoir levels of the diesel and natural gas-powered pumps at their respective wells. I reviewed several records from the past 12 months of the daily checklists' logs, and they appeared to be filled out completely and thoroughly. Mr. Rosales also explained that staff inspect the well houses for many other items; however, not all the items that are inspected are recorded on the log sheet.

During the inspection, I observed all the active wells serving the system, including Wells #1-1, #1-6, #1-7, #2-7, #2-8, #2-9, #3-3, #3-4, #35, #4-3, #4-4, #45, #5-2, #5-3, #61, #62, and #63. I also observed Wells #42 and #3-1, which are inactive and had been properly abandoned and plugged (Photographs #5 and #26). Each of the wells had sampling points with smooth sample taps. Each vertical turbine well was equipped with a small water recirculation pump (Photographs #13, #31, #34, and #58) that provided a constant flow of raw water through the pump shaft and casing. Overall, the well houses generally were clean, dry, and the well components (plumbing and electrical) appeared adequately maintained. However, during the observations of the well sites, there were several issues identified and are summarized in the table below. These findings were noted on the NOPF provided to the system at the exit conference and are also summarized in the conclusion section of this report.

Table 1: Well Inspection Findings Summary

Well #	Findings
45	The floor drain of the well house was clogged, and water had accumulated on the floor of the well house. (Photo #4).
45	Well vent screens were equipped with large mesh (~4-mesh) instead of 16-mesh screen (Photo #3; Finding #5).

3-4	Natural gas-powered pump with 55-gallon drum of lubricant oil, without secondary containment, adjacent to pump base (Photograph #16, Finding #15); Well casing vent extended, but pointed outward instead of downward (Photograph #15 and Finding #4).
35	Tree growing at the base of the well house (north side) (Photo #28, Finding #23).
3-3	Screen torn on the pressure relief valve discharge point (Photographs #32, Finding #24). No separate casing vent; ¼ inch PEX pipe drawdown tube (screened) used as casing vent and to measure drawdown (Photograph #30-31, Finding #4).
2-8	Pump packing drain clogged, and water accumulated on the floor of the well house. Casing vent and draw down tubing combined (Finding #4).
2-9	Pressure washer connected to the well water supply without a backflow prevention device (Photograph #34, Finding #22); 55-gallon drum of oil, without secondary containment, stored near pump base. (Photograph #36, Finding #15). Casing vent and drawdown tube combined (Finding #4).
2-7	Casing vent and drawdown tube utilized together (Photograph #41, Finding #4).
5-2	Gap in the sanitary seal between the well pump and the pump base (Finding #18); Casing vent and drawdown tubing combined. (Finding #4).
5-3	Mouse droppings and a rodent nest observed on the well pump (Photograph #46-47, Finding #16); Uncovered electrical junction box with wire connections exposed (Photograph #48, Finding #17). Casing vent and drawdown tubing combined (Finding #4).
63	Well out of service due to chlorine injection pump malfunction (Photograph #50, Finding #19). Significant corrosion noted on the gas chlorine cylinders (Photograph #49, Finding #19). Low free chlorine residuals (<0.2 mg/L) recorded at the well sampling site since March 2025 (Finding #19).
62	Submersible pump missing conduit covering wires from the electrical box to the casing, presenting an open pathway to the well casing (Photograph #51, Finding #20).
1-1	Gap in the sanitary seal between the well pump and the pump base (Photograph #55, Finding #18); Casing vent and drawdown tube combined (Finding #4).
1-6	Casing vent and drawdown tubing combined, but not extended from the pump base (Finding #4). Exterior lighting of the well house broken.
1-7	Oil spill on the floor of the well house adjacent to the pump base (Finding #15, Photograph #57). 55-gallon oil drum without secondary containment (Photograph #58). Pressure relief valve overflow screen torn with large holes (Finding #24); Casing vent not in downturned position (Finding #4). Casing vent and drawdown tubing combined and not extended or downturned (Finding #4).

While touring multiple well houses served by natural gas and diesel powered pumps, I noted 55-gallon drums of oil used for lubricating the well pump motors (Wells #1-7, #2-9, and #3-4). The barrels of oil were located in close proximity (between two and ten feet) to the well pump bases. These barrels were not equipped with secondary containment and in the well house of Well #1-7, I observed spilled oil on the floor of the well house adjacent to the well pump base. I noted that oil-dry material had been placed over the spilled oil to absorb it. Mr. Rosales explained that lubricating oil is necessary for the operation of the natural gas-powered pumps and that oil is transferred from the 55-gallon drums to the smaller oil reservoir of the pumps. He noted that the transfer can be messy at times due to the small hand transfer pumps and that new electric transfer pumps have been identified and ordered. He explained that the spilled oil is normally cleaned immediately and that the new electric pumps should help with the transfer process. He also noted that secondary containment pallets could be installed to prevent any leaks from reaching the floor. I explained due to the close proximity of the well base and casing, that the spilled oil presented a situation for potential contamination of Well #1-7 and that the barrels of oil in these

wells should have secondary containment to prevent any spills or leaks from reaching the floor. This issue was noted as Finding #15 in the NOPF and discussed with the system at the exit conference.

Well #45's casing vent was extended and downturned; however, the vent was equipped with a large mesh screen (approximately 4-mesh sized screen). The large mesh screen does not comply with the Kansas Minimum Design Standards (KS MDS) requirement for 16-mesh screens to be installed on casing vents and could allow large particles or insects to be drawn into the well casing. This issue was discussed with Mr. Rosales during the inspection and during the exit interview and he explained that new screens would be installed.

Regarding casing vent configurations, several wells were observed to have casing vents installed and the vents were extended from the pump base, downturned, and screened as required by the KS MDS. Well #43 was equipped with a casing vent that was made of metal piping, was extended approximately 12-15 inches above the pump base, and the outlet was screened with a fine screen of non-corrodible material and was equipped with a separate drawdown tube (Photograph #13). Well #3-4's casing vent was extended and screened, but not downturned (Photograph #15). In addition, each well was equipped with quarter inch (1/4") polyethylene (PEX) piping that was utilized for drawdown tubing in each of the wells. However, in approximately nine (Wells #1-1, #1-6, #1-7, #2-7, #2-8, #2-9, #3-3, #5-2, and #5-3) of the 17 wells observed, the drawdown tubing was also utilized as the casing vent. Each of the drawdown tube openings were covered with a fine mesh screen (~16-mesh) to protect the openings. However, the drawdown tubes were not all extended or downturned as required by the KS MDS for casing vents. Mr. Rosales explained that this configuration was acceptable to the KDHE but was unable to provide any correspondence of the approval from the State.

On June 9, 2025, I contacted the KDHE Public Drinking Water, Engineering and Permits Unit for a confirmation and clarification of whether the configuration is acceptable or had received approval from the State. On June 18, 2025, the state provided a response that casing vent and drawdown tube configuration (Photographs # 31, 41, 43, and 58) did not appear to be an acceptable design and did not appear to be completed in accordance with the KS Minimum Design Standards. The KS Minimum Design Standards – (Chapter IV) Source Development (D) Groundwater – Resource Facilities and Other Requirements, (4) Construction Criteria for Well Houses, Discharge Piping, and Related Appurtenances, (e) Well Vent Section requires that: *1) The vent shall be constructed of metal tubing or pipe and fitted through the pump head's metal base plate so as to form a watertight connection with the base; 2) The vent shall terminate in a full 180° return bend not less than 2 ft. (0.6 m) above the pump base; and 3) The opening in the vent shall be screened with 16-mesh non-corrodible screen*. However, additional information was necessary for the State to make an accurate determination. Further coordination between the system and the State's engineering section is needed to ensure the configuration is acceptable.

In addition, the 2022 Edition of Recommended State Standards (Ten State Standards) Casing Vent section (3.2.7.5) states that: *Provisions shall be made for venting the well casing to atmosphere. The vent shall terminate in a downturned position, at or above the top of the casing, no less than 12 inches above grade or floor, in a minimum 1½ inch diameter opening covered with a 24 mesh, corrosion resistant screen. The pipe connecting the casing to the vent shall be of adequate size to provide rapid venting of the casing. Where vertical turbine pumps are used,*

vents into the side of the casing may be necessary to provide adequate well venting; installation of these vents shall be in accordance with the requirements of the reviewing authority.

This issue should be further investigated to ensure that the well casing vents are constructed properly to allow proper operation of the wells and to prevent potential contamination from entering the water source. This issue is noted as Finding #4 in the NOPF and was discussed with the system prior to the conclusion of the inspection.

The sanitary seal or casing seals of Wells #52 and #11 were cracked or there were gaps in the sanitary seal between the well pump and the pump base that did not provide for a watertight seal. The sanitary seal is important to maintain proper well pressure and to prevent contamination from being potentially being drawn into the well casing from an unprotected opening. KS Minimum Design Standards – Casing Seal and Discharge Piping section requires that, "*The metal base plate of the pump discharge head assembly shall be grouted and bolted or otherwise securely sealed to the concrete base that supports the pump discharge head assembly so as to be watertight."* This issue was discussed with Mr. Rosales during the inspection, in the exit conference, and noted as Finding #18 on the NOPF. Mr. Rosales explained that the seals would be recalked to seal the openings. In addition, while inspecting Well #62, I observed that the electrical wiring to the submersible pump were not covered with conduit from the electrical junction box and extended to the casing cover. The lack of conduit presented an opening to the casing where potential contaminants could enter the well similar to the sanitary well seal requirements. According to the KS Minimum Design Standards, Sanitary Well Seal requirements, *"The top of the pitless unit shall be securely fitted with a sanitary well seal, which creates an air and watertight seal. The pitless unit shall also be designed to receive a contamination proof conduit for power purposes."* Mr. Rosales explained that the wiring to the submersible pump had been shortened and when this occurred the wiring was not long enough for the previous conduit fitting and a new piece of conduit was required. He explained that the conduit would be repaired. This issue was noted as Finding #20 on the NOPF.

While inspecting the well house of Well #53, I observed mouse or rodent droppings on the well pump. After further investigation, I observed a rodent nest inside the well pump. This issue was immediately addressed by system staff by removing the nest, and we discussed preventative measures that could be conducted to prevent rodents from entering the well houses. Mr. Rosales explained that he had contacted a pest exterminator, and that traps or appropriate poisons would be added around the well houses to prevent infestations. Rodents pose a potential sanitary concern with potential contamination entering the well or causing significant damage to the well pump or electrical pump components. Measures should be conducted to prevent rodents from entering or remaining in well houses or their components. This finding was noted as Finding #16 on the NOPF.

At the time of the inspection, Well #63 was out of service due to issues with a chlorine injector pump. Mr. Rosales explained the well had been down for several months due to the injection pump malfunctioning. I observed significant corrosion on the gas chlorine cylinders in the chlorine room, and Mr. Rosales explained that this occurred when the injection pump malfunctioned and caused a leak. The chlorine gas had since been turned off. Mr. Rosales explained that chlorine injector pump was being repaired and that the city planned to have the well up and running before the summer months or when the highest system demand occurs. With the system being under a voluntary water restriction, the loss of a well could inhibit the system's

ability to meet source water demand. This issue was noted as Finding #19 on the NOPF and discussed with the system at the exit conference.

At Wells #3-3 and #1-7, I observed the screens on the pressure relief valves were torn or had large holes present in the mesh screens that cover the discharge points. Pressure relief valves expel excess pressure in the discharge lines of the well and draw air into the discharge line. The entry and exit of air into the discharge lines, through the pressure relief valves, provides a pathway for contaminants to enter the system, if the openings are not properly screened. Mr. Rosales explained that the screens are regularly inspected and replaced and that he would ensure the screens are replaced immediately. This finding was discussed with the system at the exit conference but was not noted on the NOPF. However, this finding is included as Finding #24 in the Conclusion Section of this report.

While inspecting Well #11, a power washer was observed in the well house. The power washer was connected with a garden hose, without a backflow prevention device or vacuum breaker, to the casing lubrication water line. This configuration posed a potential contamination risk because the water supply connection is from water that directly flows from and returns to the aquifer. If backflow would occur this cross connection could potentially cause contamination of the well. Mr. Rosales explained that the system has garden hose connectors with vacuum breaks, and these would be used in the future. The power washer was disconnected during the inspection. This issue is noted as Finding #22 of the NOPF.

In Wells #45 and #2-8, water had accumulated on the floor of the well house. Each of the well houses were equipped with floor drains, as specified in the KS Minimum Design Standards, however, the drains were clogged preventing proper drainage. Mr. Rosales identified the causes of each of the drainage issues and explained that they would be addressed as soon as possible. This issue was discussed during the inspection; however, it was not noted on the NOPF but is included as Finding #26 in the Conclusion Section of this report.

The system utilizes a Supervisory Control and Data Acquisition (SCADA) system that continuously monitors every well and pump in the system to record pump hours and pumping rates. The SCADA system will alert operators to well or pump issues in the system.

Treatment

Each of the Stations (#1 through #5) were observed during the inspection. Each Station was located inside a fenced area with adequate security measures. Each Station included an individual chlorine storage/treatment room that was housed in a solid and physically secure structure to protect the treatment components. The gas chlorine cylinders in each of the Stations were properly secured with chains. The electrical and ventilation systems were working properly in each of the Stations. In Station #4 and #3, there was minor corrosion noted on the ventilation ducts, but Mr. Rosales explained that the vents were scheduled for replacement (Finding #9). Each of the Station's chlorine storage and treatment rooms appeared to be clean, dry, well maintained, operating properly, and adequate chlorine residuals were being produced as noted in Daily Chlorine and Daily Residual log sheets maintained by the system operators. Mr. Rosales explained that after disinfection, the treated water flows to the GSTs of Stations #1 through #4 for detention and chlorine contact time of approximately 30 minutes to one hour before it is pumped to the distribution system.

Distribution System
Mr. Rosales provided a demonstration of the City's distribution system components with the city's Geographic Information System (GIS) mapping system. The GIS map recorded water lines, by size and material, meters, valves, hydrants, pumps, storage structures, and other features such as areas where water main breaks occur. The mapping system included the service connection information collected from the System's Lead Service Line Inventory (LSLI). The mapping system noted areas with ongoing construction as planned by the CIP.

He explained that the distribution system has four (4) pressure zones, and that pressure is maintained between 40 to 60 pounds per square inch (psi) throughout the system. He explained that the system has looped most of the dead-end lines and that the Fire Department conducts flushing of the City's fire hydrants and provides the Water Department with a monthly report of the hydrants flushed and identifies any hydrant needing repairs. He explained that the system has adequate valving to isolate sections of the system, and that the system has a valve exercise program. He explained that the program has been put on hold due to damages to valves and broken valves are repaired when identified. He explained that the system receives and responds to complaints.

Chlorine Residuals
During the inspection, a free chlorine residual was measured using the EPA's Hach DR900 Multiparameter Portable Colorimeter from the restroom of the Water Department building. The free chlorine residual was recorded at 0.32 mg/L. A review of daily disinfection measurements collected by system staff from locations throughout the distribution system identified free chlorine residual measurements recorded below 0.2 mg/L from the Well #63 location. Measurements recorded from March 17, 2025, through April 28, 2025, at Well #63, identified approximately 33 samples with measurements below 0.2 mg/L. This issue was noted as Finding #19 of the NOPF and discussed with Mr. Rosales during the exit conference of the inspection. Mr. Rosales explained that the recent measurements were due to the chlorine injection pump of Well #63 being inoperable. He explained that Well #63 is at the extreme northwest section of the distribution system and that no service connections are near the well and that the chlorine residuals of the nearest service connections are at or above 0.2 mg/L.

According to the Kansas Administrative Regulations Article 15 – Domestic Water Supply, 28-15-19. Disinfection of drinking water.

(a) All drinking water supplied to the public from a public water supply system shall be disinfected.
(b) A sufficient amount of chlorine shall be added to the water to maintain a chlorine residual of at least 0.2 mg/l of free chlorine throughout the entire distribution system.
(1) Failure to maintain a residual as specified in this subsection in more than five percent of measurements taken each month, in any two consecutive months, shall be a violation of this regulation.
(2) Each day the public water supply system serves water to customers, the operator shall make a determination of the chlorine residual as follows:
(A) The operator shall make a daily determination to ensure that the residual levels required by this subsection are maintained. The operator shall vary sampling locations throughout the distribution system.
(B) The operator shall record and maintain data to demonstrate to the department that the public water supply system is in compliance with the requirements of this regulation.

(3) If the chlorine residual is less than the minimum level required by this subsection, the operator shall take appropriate action to increase the chlorine residual to the level specified in this subsection.

Water Loss
Mr. Rosales provided the system's water use report from 2024. The system conducts annual water loss evaluations that are included in the annual water use reports that are reported to KDA's Division of Water Resources. The system's water loss in 2024 was calculated at approximately 3% of the total water produced. Mr. Rosales explained that the system utilizes a meter monitoring system that immediately alerts system staff to water leaks and that repairs are made quickly to prevent water loss. The system's 3% water loss is less than the EPA and the KDHE's recommended average of 10%; however, Messrs. Rosales and Beer explained that the system continues to investigate and improve efficiency and water loss.

Finished Water Storage
I reviewed the latest inspection report for each of the system's finished water storage facilities including the five ground storage tanks (at the Stations) and the 1 MG elevated storage tank. Mr. Rosales explained that the system inspects the interior of all storage structures including the Station GSTs and has an inspection and repair schedule, for each structure of every three years, contracted with an inspection company. Mr. Rosales provided me with the inspection reports for each structure. The GSTs at Stations #2 and #3 were last inspected in May 2024. The inspections identified corrosion of the access hatches and the interior of the GSTs that Mr. Rosales explained were planned to be repaired within the next two years. The corrosion did not appear to be significant enough to require immediate attention and could wait to be addressed. The inspection report photographs noted that the access hatches for the GSTs were in shoebox configuration; however, no gaskets were in place to seal the hatch lid to the hatch sides. This issue was noted as Finding #8 of the NOPF and discussed with Mr. Rosales during the exit conference.

The 1 MG elevated storage tank was last inspected in November 2023. The inspection report identified several issues that were addressed in 2024, and these included 1) a new riser access that replaced the dry manway access with a 30-inch manway; 2) overflow pipe reconfiguration; 3) replaced vent screens; and 4) conducted interior paint touch up. I observed the roof access hatches were not equipped with waterproof gaskets, from photographs of the tank interior that were provided in the inspection reports reviewed during the inspection. This was discussed with Mr. Rosales, and he explained that he would discuss this with the inspection company. This finding was discussed at the exit conference and noted as Finding #6 of the NOPF.

During the inspection, I visually observed every finished water storage structure from the ground level. I observed the foundation condition and overflow of the elevated storage tank. I noted the overflow screen was torn and had large holes in it and was in need of being replaced (Photograph #52, Finding #13). Below the recently installed manway of the tower, a large hole was present in the ground from the water eroding the area after the tower was drained to replace the opening. A wooden pallet had been placed at the base to cover the hole (Photograph #52, Finding #14). These issues were discussed with Mr. Rosales at the exit conference and noted in the NOPF.

Each of the Station's GSTs were observed. The GSTs were located inside a secure fenced perimeter and the concrete structures were elevated above ground level and covered with grass sod. The ground was sloped to prevent water from standing near the structures. Each of the

GST's access points were observed. Mr. Rosales explained that the interior of the sand traps for each of the GSTs are cleaned at least every five years. Mr. Rosales explained that the corrosion noted on the access hatches in the recent inspection reports is being evaluated. I noted again that while reviewing the inspection reports of the GST, that the hatch lids did not have gaskets to fully seal the lids to the hatch sides. This issue was noted as Finding #8 of the NOPF. Chapter VI for Water Storage Tanks of the KS Minimum Design Standards requires that all entry ways, to finished water storage structures, shall be gasketed to be watertight. Mr. Rosales explained that the City is evaluating the costs of installing new hatch lids or refurbishing the metal surfaces and repainting, and that these costs would be evaluated then incorporated into the operation and maintenance schedule.

The vents for each of the GSTs were observed. The GST vent on Stations #2, #3, and #4 were equipped with large opening screens (Photographs #9, #22, and #40). Chapter VI for Water Storage Tanks of the KS Minimum Design Standards requires vents for GSTs to be equipped with 16-mesh screens to prevent insects from entering through the vents and into the storage structures. This issue was discussed with Mr. Rosales during the inspection, at the exit conference, and is noted at Finding #7 of the NOPF. Mr. Rosales explained that the City would evaluate the issue and replace the screens with the appropriate size. While observing the GST at Station #1 (Photograph #59), I noted that there were no vents provided for the two storage tanks. This was noted as Finding #12 of the NOPF, however, the tanks have been in operation since the 1940's and therefore would are not subject to minimum design standards for venting and Mr. Rosales explained that there have not been any operating issues due to the lack of vents.

Lead and Copper

The system has been on a reduced triennial monitoring schedule for the past three monitoring periods and is required to collect 30 lead and coppper samples. The 2022 Lead and Copper Sampling Pool identified 50 potential sampling sites or 20 potential alternative sites. The system directly serves a population of approximately 20,000 and therefore, would be required to sample from 60 sites during standard monitoring. An additional 10 sites are needed to meet the minimum number of sampling sites for Standard Monitoring. The system's last lead and copper sampling monitoring period was conducted in 2022 and recorded the copper 90th percentile level at 0.09 mg/l and a lead 90th percentile level of 0.0 mg/L, both of which are less than the Action Levels for each parameter. Based on a review of the KS DWW lead and copper summary, the system has not experienced a lead or copper action level exceedance (ALE) in at least the past 10 years.

I reviewed the system's lead service line inventory, that was developed and submitted to the KDHE, prior to October 16, 2024, and the system's 2022 Lead and Copper sampling pool. The system's inventory identified at least four private service lines and seven water mains, owned by the PWS, as being constructed of lead or a galvanized requiring replacement (GRR) material. Column U of the inventory spreadsheet also identified at least 21 service lines that were determined to be served by "lead", either from the private service line or from the public water system's water main. According to the 2022 Sampling Pool, there were no sampling sites associated with lead service lines or served by a PWS owned lead water main identified. I explained to Mr. Rosales, that the sampling pool should be updated, using the information from the LSLI, to include all available lead service lines and the appropriate tiered sites as specified by Table 2 below and 40 CFR 141.86(a)(4)(i through v):

Table 2: Revised Tiering Criteria under the Final LCRI

Sample Site Tier	Description
Tier 1	Single-family structures (SFS) with premise plumbing made of lead and/or served by an LSL.
Tier 2	Buildings, including multiple-family residences, with premise plumbing made of lead and/or served by an LSL.
Tier 3	SFS served by a lead connector. SFS served by a galvanized service line or containing galvanized premise plumbing identified as ever having been downstream of an LSL.
Tier 4	SFS that contain copper premise plumbing with lead solder installed before the effective date of the State's applicable lead ban.
Tier 5	SFS or a building in which the plumbing materials used at that site would be commonly found at other sites served by the water system (i.e., representative of sites throughout the distribution system).

Cross Connection Program

The City of Liberal's Cross Connection Program ordinance provides procedures for customers and for system staff. A copy of the system's ordinance is located the following link: http://www.cityofliberal.org/DocumentCenter/View/1158#:~:text=Authorized%20representative%20means%20any%20person%20designated%20by,to%20administer%20this%20cross%20connection%20control%20regulation.&text=No%20water%20service%20connection%20shall%20be%20installed,of%20the%20city%20or%20its%20authorized%20representative. According to the ordinance, the consumer is required to inspect, test, and overhaul backflow prevention devices as directed. All backflow prevention assemblies are required to be inspected at the time of installation and least every 12 months afterwards. Also, according to the ordinance, "the city and consumer must maintain a complete record of each backflow prevention device from purchase to retirement. This shall include a comprehensive listing that includes a record of all tests, inspections, and repairs. All records of inspections, tests, repairs, and overhauls shall be provided within 30 days to the city or its authorized representative."

During the inspection, I discussed the implementation of the system's cross Connection Control Program with Messrs. Beer and Rosales. Mr. Rosales explained that service connections with backflow prevention devices have their devices inspected on an annual basis. He explained that the devices that the city owns are also inspected annually. I asked if a comprehensive listing of all active backflow prevention devices was maintained, and Mr. Rosales explained that customers provided results of the backflow tests, and he provided multiple test results for me to review. However, he explained that the Water Department did not maintain a list of active devices or have an inspection tracking system, to ensure that the devices are inspected in the required timeframe. Mr. Rosales recommended that I contact Mr. Keith Bridenstine with the City's Code Enforcement Department to see if they maintained the comprehensive list.

On May 20, 2025, Mr. Bridenstine explained that a comprehensive backflow prevention device tracking list was not maintained by the Building Services & Code Enforcement department either. I relayed this information to Mr. Rosales and explained that this would be a finding of the inspection report. Tracking of cross connection hazards, backflow prevention devices, and annual inspections is a critical element of a Cross Connection Control Program to help prevent contamination of the public water supply by non-potable water sources from hazard connections. This finding is listed as Finding #25 of this report.

During the inspection, I observed the interconnection with National Beef was also conducted. A backflow device was noted at the connection (Photograph #56) and the inspection tag noted that it had been inspected in the past 12 months. The interconnection is housed in a physically secured building that is temperature controlled. The interconnection building and components were well maintained, and the building was physically secured.

SUMMARY AND CONCLUSION

Following a review of the operation and maintenance portion of the inspection, Mr. Beer and Mr. Rosales were updated on the preliminary findings. In addition, following the review of the AWIA requirements, Mr. Lunceford was available to discuss the cybersecurity risks and controls established for the system. On May 15, 2025, I conducted an exit briefing with Mr. Rosales and explained the preliminary findings that I observed during the inspection. An NOPF was emailed to the facility on May 16, 2025. The preliminary findings noted in the NOPF are listed below and any findings discovered after the exit conference are provided with details.

Findings

1) Risk Resiliency Assessment (RRA) incomplete and did not include all required categories including the sections identified in SDWA Section 1443(a)(i through vi).

2) Emergency Response Plan (ERP) incomplete and did not include all required categories including the sections identified in SDWA Section 1443(b)(1 through 3).

3) The current Lead and Copper Sampling Pool/Plan did not include all available Tier 1 sites or sites with lead service lines as identified in the Lead Service Line Inventory. The current plan was incomplete and included only 22 sample sites and the system is required to monitor from at least 30 sites. The system should review the LSLI and include all available Tier 1 sites and add additional sampling sites (adequate number for Standard Monitoring – at least 60) for the upcoming monitoring period of July – September 2025.

4) Well Findings: There were multiple issues noted with the system's active wells including: gaps in sanitary seals; well casing vents with large holes in screens; and well casing tubes were used as both vents and drawdown and were not downturned or extended. The system was unable to provide any correspondence from the KDHE that approved the casing vent/drawdown tube configuration.

5) Well #45 casing vent was equipped with a large mesh screen (approximately 4-mesh) and is required by KDHE to be equipped with screens of 16-mesh size of non-corrodible material.

6) Water tower roof access hatches (Roof and Dry) did not have waterproof gaskets on access hatch doors.

7) Stations (clear wells) #4, #3, #2 vents/overflow were equipped with large mesh (4-mesh) screens or had large holes in the mesh screen. Overflow vents should be equipped with screens of 16-mesh size of non-corrodible material.

8) Station access hatch lids exhibited corrosion and bare metal as noted during the recent storage structure inspection. System Response: The system is evaluating the most cost-effective method to address the access lids, that could include replacing or sandblasting and repainting the existing access hatch lids.

9) Interior corrosion of Station's #2 and #3 piping and components was identified in the recent storage structure inspection reports.

10) Light corrosion of the Station #4 components in the chlorine feed building (exhaust system) was noted during the inspection. System response: The system plans to replace the chlorine exhaust systems of Station's #4 and #2 within the next twelve months.

11) Station access hatches were not equipped with waterproof gaskets on lids. System Response: The City is evaluating the Station access hatch lids and will consider adding gaskets during repairs or replacement.

12) Station #1 did not have an overflow or vent – built in 1940-50's no design criteria.

13) The overflow screen on the Water Tower was torn with large holes and in need of replacement.

14) Soil erosion (large hole) observed at the base of the Water Tower fill pipe due to replacing the manway.

15) Oil spill, due to oil transfer from 55-gallon drums to pump's oil reservoir, on the floor of Well #1-7 near the well casing and pump base. The system's natural gas-powered well (Wells #1-7, #2-9, and #3-4) had 55-gallon drums of oil, with no secondary containment. available. System Response: The City is planning to replace the transfer pumps with electric pumps instead of manual transfer pumps.

16) Mouse droppings and a mouse nest were observed on the well pump and inside of well house of Well #53. Corrective Action taken, the nest was removed by system staff at the time of the inspection, but droppings remained. The system coordinated with an exterminator to install appropriate traps / poison and will send photographs to document this was corrected.

17) Well #53 – the electrical junction box cover was missing, and wire connections were exposed. Exposed wires should be housed inside junction boxes to prevent corrosion or electrical shorts.

18) Sanitary seals on Wells # 52 and #11 had visible gaps between well pump and pump pad. The sanitary seals should be properly sealed to prevent contamination and proper pressure.

19) Well #63 was out of service due to issues with the chlorine injector pump assembly and significant corrosion on chlorine gas cylinder assembly. Low chlorine residuals (<0.2 mg/L) were recorded in distribution system monitoring logs during March through May 2024 from this well location.

20) Well #62 – (submersible pump) had missing conduit to fully cover wires and an uncovered opening to the water source.

21) High service pump packing at Station #3 was observed to be leaking. Packing should be adjusted to prevent excessive leakage.

22) A power washer was connected to the well casing lubrication line without a backflow prevention device at Well # 11. Vacuum breaker hose connections should be used to prevent siphonage or backflow to the water source.

23) A tree was observed growing near the Well #35 building base and exterior wall. Trees should be removed to prevent damage to the well house and well components.

24) *Pressure relief valve overflow screens were torn with large holes at Wells #1-7 and #3-3. **Not noted in the original NOPF*

*The system's cross connection records did not include a comprehensive listing of all backflow prevention devices that included a record of all tests, inspections, and repairs, as required by the City's Cross Connection Ordinance. *The NOPF included the following language, "Additional follow up with Building Department still needed on the tracking program/practices of backflow prevention device inspections conducted by the City." *Not noted in the original NOPF*

25) *Water had accumulated on the well house floors of Wells #45 and #2-8. System Response: Staff will unplug the drains to ensure water is not allowed to stand and the drains flow correctly. **Not noted in the original NOPF*

The NOPF was provided to the system on May 16, 2025, and provided the opportunity for a response with any actions taken or plans (preferably with an implementation schedule) to address any of the findings within 14 days. On June 5, 2025, I notified the system via email (Attachment 6) of the information relayed from Mr. Bridenstine regarding the cross-connection program tracking requirements and resent the NOPF. I also requested any corrective actions from the system that were taken or planned after the inspection. To date, the System or city has not submitted a written response to the initial NOPF or the follow up request.

LANTZ TIPTON
Digitally signed by LANTZ TIPTON
Date: 2025.06.26 08:29:45 -05'00'

Lantz Tipton
Physical Scientist, WB

NICOLE MORAN
Digitally signed by NICOLE MORAN
Date: 2025.06.26 12:23:15 -05'00'

Nicole Moran
Supervisor, WB/DWIS

ATTACHMENTS:

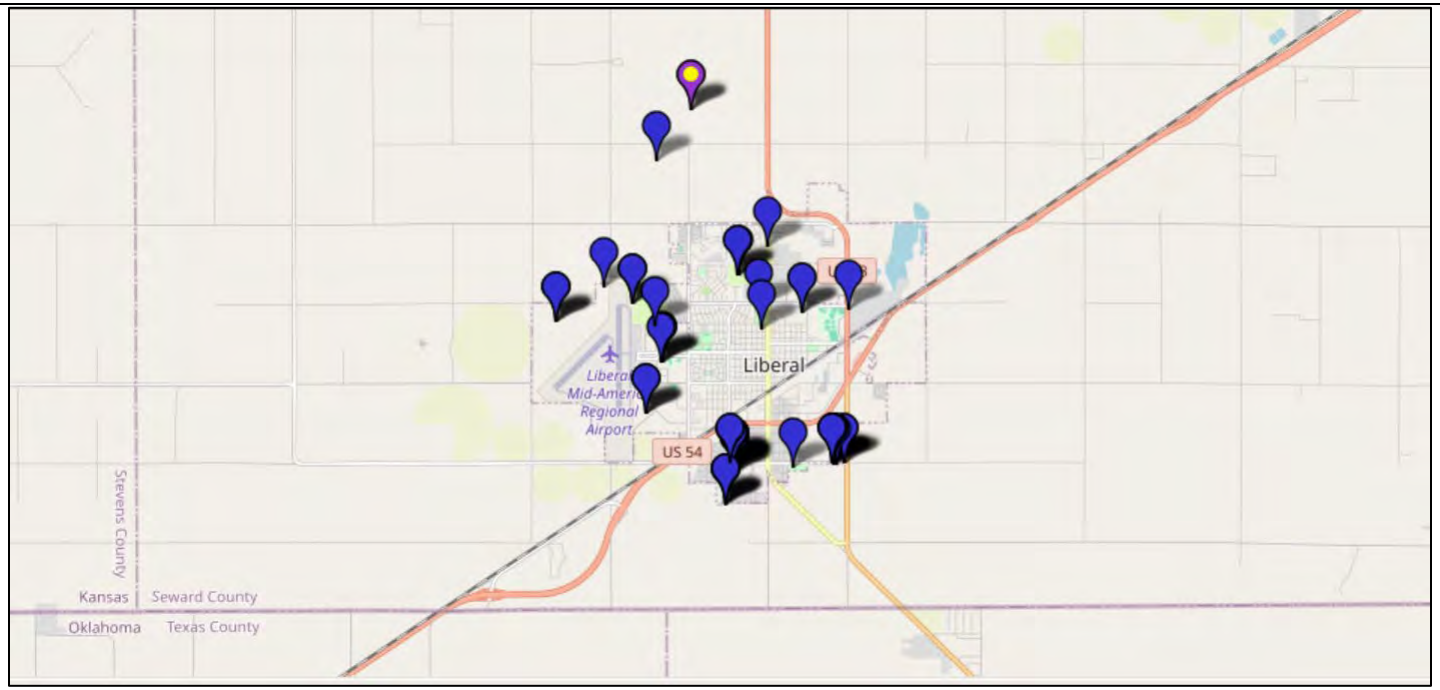
1. Photolog and Digital Photographs (24 pages)
2. KDHE 2022 SNSV report and system response (36 pages)
3. SDWIS Violation Data (1 page)
4. EPA Inspection Notification (2 pages)
5. Notice of Preliminary Findings (2 pages)

6. Cross Connection Tracking System notification / 2nd NOPF notification (4 pages)

United States Environmental Protection Agency – Region 7

Digital Image Log

1. Facility Name: City of Liberal – Public Water Supply **2. PWS ID #: KS2017504**	**3. Inspector Name: Lantz Tipton**		
4. Photographer (if Different): Lantz Tipton	**5. Date of Inspection: 5/14-15/2025**		
6. Street Address of Digital Images: see map	**7. City: Liberal**	**8. State: KS**	**9. Zip: 67901**
10. Image Numbers: 1-59	**11. File Name: IR_FY25_KS_City of Liberal PWS – Attachment 1**		



Digital Image Number	File Name	Description	Date and Time Digital Image Taken
1	20250514_184259624_iOS.jpg	Well #44 with casing vent extended and screened and draw down tube with screened opening	2025:05:14 13:42:59
2	20250514_184430132_iOS.jpg	Well #44 – well head with lubrication level indicator	2025:05:14 13:44:30
3	20250514_184930946_iOS.jpg	Well #45 – casing vent extended and downturned (large mesh screen not pictured), pressure gauge, packing drain tube, and well components.	2025:05:14 13:49:30
4	20250514_185347998_iOS.jpg	Well #45 – view of discharge line with pressure relief valve and isolation valve; Note the floor drain is clogged and water accumulation on the floor.	2025:05:14 13:53:47
5	20250514_185448187_iOS.jpg	Plugged well (#42)	2025:05:14 13:54:48
6	20250514_185557841_iOS.jpg	Station #4 – Chlorine gas storage building with secure door, sound structure, and chlorine exhaust on the roof of the structure.	2025:05:14 13:55:57
7	20250514_190043571_iOS.jpg	Station #4 – chlorine gas cylinders with automatic switch over valves, valve wrenches in place, and digital scale monitor measuring cylinder weight to record usage.	2025:05:14 14:00:43
8	20250514_190842798_iOS.jpg	Bulk water filling point at Station #4. Note the air gap is twice the diameter of the fill pipe	2025:05:14 14:08:42
9	20250514_190939913_iOS.jpg	Station #4 – ground storage tank vent with large mesh screen (~4 mesh)	2025:05:14 14:09:39
10	20250514_191102244_iOS.jpg	Station #4 – sampling location	2025:05:14 14:11:02
11	20250514_191616818_iOS.jpg	Station #4 – view of ground storage tank vent from the top of the GST looking east toward the Chlorine Storage Building	2025:05:14 14:16:16
12	20250514_191653225_iOS.jpg	Station #4 – View of the sand collection pit access hatch prior to the GST.	2025:05:14 14:16:53
13	20250514_192216248_iOS.jpg	Well #43 – view of well pump on concrete base with casing vent screened, extended, and downturned; Draw down tube screened; also, pressure relief valve and discharge point screened.	2025:05:14 14:22:16
14	20250514_193203029_iOS.jpg	Well #34 – natural gas-powered pump.	2025:05:14 14:32:03
15	20250514_193316404_iOS.jpg	Well #34 – well casing vent extended but pointing outward; Also note the 55-gallon drum of lubricating oil near the pump base.	2025:05:14 14:33:16
16	20250514_193402828_iOS.jpg	Well #34 – pressure relief valves with screened discharge point.	2025:05:14 14:34:02
17	20250514_193658185_iOS.jpg	Well #34 – drains for lubricants and antifreeze for the natural gas-powered pump	2025:05:14 14:36:58
18	20250514_194128305_iOS.jpg	Station #3 – electrical pumps, plumbing components, and sample location	2025:05:14 14:41:28
19	20250514_194242303_iOS.jpg	Station #3 – split casing pump and components	2025:05:14 14:42:42
20	20250514_194252746_iOS.jpg	Station #3 – Diesel powered pump	2025:05:14 14:42:52
21	20250514_194455578_iOS.jpg	Station #3 – High Service Pump – packing leak	2025:05:14 14:44:55
22	20250514_194649233_iOS.jpg	Station #3 – Ground storage tank vent screen with large mesh (4 mesh)	2025:05:14 14:46:49
23	20250514_194942611_iOS.jpg	Station #3 – Ground storage tank concrete access hatch, drain valve, and drain location.	2025:05:14 14:49:42
24	20250514_195051270_iOS.jpg	Station #3 – gas chlorine cylinders with auto switch valves, valve wrenches, and digital scale monitor	2025:05:14 14:50:51

25	20250514_195054153_iOS.jpg	Station #3 – chlorine gas feed adjustment mechanism for each source water line	2025:05:14 14:50:54
26	20250514_195531565_iOS.jpg	Plugged Well #3-1	2025:05:14 14:55:31
27	20250514_195727126_iOS.jpg	Well #35 – submersible pump with physical barriers	2025:05:14 14:57:27
28	20250514_195856894_iOS.jpg	Well #35 - Tree at the base of well house	2025:05:14 14:58:56
29	20250514_200250484_iOS.jpg	Well #35 – Well building on tracks to allow access to the pump components	2025:05:14 15:02:50
30	20250514_200340387_iOS.jpg	Well #3-3 without a casing vent	2025:05:14 15:03:40
31	20250514_200407504_iOS.jpg	Well #3-3 drawdown tube extended and screened; however, facing outward and not downturned	2025:05:14 15:04:07
32	20250514_200427615_iOS.jpg	Well #3-3 – pressure relief valve discharge point with tears in the screen.	2025:05:14 15:04:27
33	20250514_200734714_iOS.jpg	Well #3-3 view of exterior of building and security fencing	2025:05:14 15:07:34
34	20250514_202212967_iOS.jpg	Well #2-9 with pressure washer connected to the casing lubrication water line without a backflow prevention device or reduced pressure assembly.	2025:05:14 15:22:12
35	20250514_202214747_iOS.jpg	View of Well #2-9 casing lubrication line, pressure relief valve screened discharge point, check valve, isolation valve, and natural gas-powered generator in the background.	2025:05:14 15:22:14
36	20250514_202302268_iOS.jpg	Well #2-9 view of second natural gas-powered pump; note the 55-gallon barrel of oil near well pump base.	2025:05:14 15:23:02
37	20250514_203015630_iOS.jpg	Station #2 – chlorine gas bottle measurement log also monthly sand trap log	2025:05:14 15:30:15
38	20250514_203259276_iOS.jpg	Station #2 – pump building interior	2025:05:14 15:32:59
39	20250514_203458813_iOS.jpg	Station #2 – two electric high service pumps from the GST.	2025:05:14 15:34:58
40	20250514_203621174_iOS.jpg	Station #2 - GST vent with large mesh screen and large hole in the screen	2025:05:14 15:36:21
41	20250514_204527748_iOS.jpg	Well # 2-7 – well pump base with drawdown tube / casing vent assembly screened.	2025:05:14 15:45:27
42	20250514_205644479_iOS.jpg	Well #2-7 – natural gas powered generate with oil spill on the floor adjacent to the pump base.	2025:05:14 15:56:44
43	20250514_205658748_iOS.jpg	Well #2-7 – floor drain clogged and water accumulating on the floor of the building	2025:05:14 15:56:58
44	20250514_205949410_iOS.jpg	Well #2-7 – discharge pipe with cap for pump to waste if necessary	2025:05:14 15:59:49
45	20250514_210929151_iOS.jpg	Station #5 gas chlorine tanks and interior of the pump building	2025:05:14 16:09:29
46	20250514_211813436_iOS.jpg	Well #53 – mouse droppings on the well pump	2025:05:14 16:18:13
47	20250514_211817713_iOS.jpg	Well #53 – mouse nest in the electrical pump	2025:05:14 16:18:17
48	20250514_212156813_iOS.jpg	Well #53 – uncovered electrical junction box from the variable frequency drive (VFD) panel	2025:05:14 16:21:56
49	20250514_214200792_iOS.jpg	Well #63 – gas chlorine cylinders with heavy corrosion due to cylinder leak	2025:05:14 16:42:00
50	20250514_214515941_iOS.jpg	Well #63 – well out of service due to chlorine injection pump repair	2025:05:14 16:45:15

51	20250514_215202509_iOS.jpg	Well #62 – submersible pump electrical wiring without conduit from the junction box to the well casing.	2025:05:14 16:52:02
52	20250514_220639469_iOS.jpg	Water tower overflow screen with tears in the bottom of the screen	2025:05:14 17:06:39
53	20250514_220904804_iOS.jpg	Water tower new manway installed; note the pallet below the manway where the ground was heavily eroded due to water flow after draining.	2025:05:14 17:09:04
54	20250514_221009800_iOS.jpg	Water tower sampling location and inspection log	2025:05:14 17:10:09
55	20250514_222441725_iOS.jpg	Well #1-1 - gap in sanitary seal between well pump and well base	2025:05:14 17:24:41
56	20250514_223140060_iOS.jpg	Consecutive connection with National Beef – backflow prevention device protecting the connection.	2025:05:14 17:31:40
57	20250514_223901579_iOS.jpg	Well #1-7 – oil spilled on the floor of the well building below the natural gas-powered generator.	2025:05:14 17:39:01
58	20250514_223904693_iOS.jpg	Well #1-7 – well pump connected to the natural gas generator; note the 55-gallon drum of oil near the well base.	2025:05:14 17:39:04
59	20250514_225035349_iOS.jpg	Station #1 – View of the top of two GSTs and the high service pump and chlorine storage building in the background; note no vent on either of the GSTs	2025:05:14 17:50:35

Number	Photo
1	
	Well #44 with casing vent extended and screened and draw down tube with screened opening

2

Well #44 – well head with lubrication level indicator

3		
	Well #45 – casing vent extended and downturned (large mesh screen not pictured), pressure gauge, packing drain tube, and well components.	

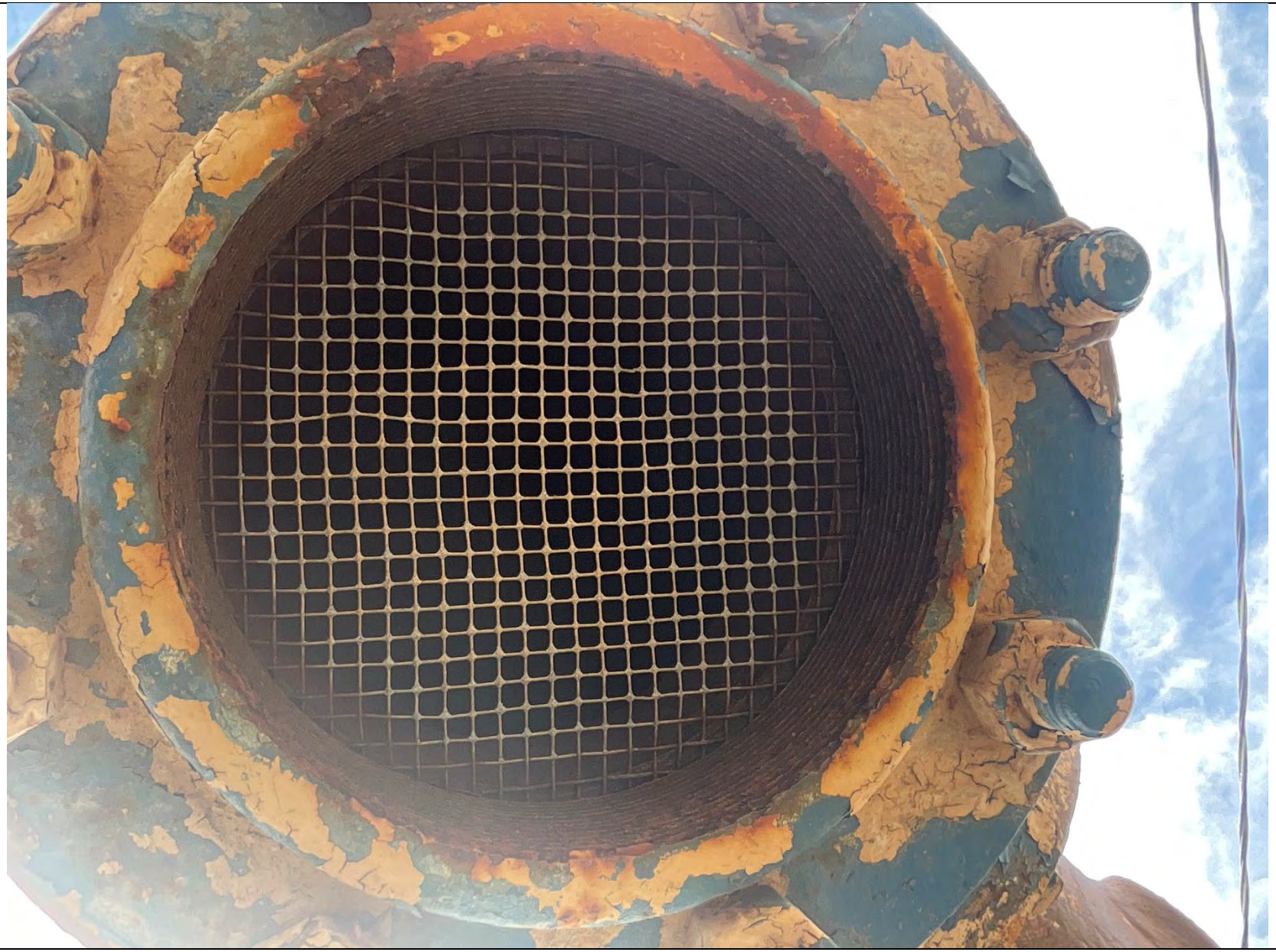
4		
	Well #45 – view of discharge line with pressure relief valve and isolation valve; Note the floor drain is clogged and water accumulation on the floor.	

5		
	Plugged well (#42)	

6		
	Station #4 – Chlorine gas storage building with secure door, sound structure, and chlorine exhaust on the roof of the structure.	

7		
	Station #4 – chlorine gas cylinders with automatic switch over valves, valve wrenches in place, and digital scale monitor measuring cylinder weight to record usage.	

8		
	Bulk water filling point at Station #4. Note the air gap is twice the diameter of the fill pipe	

9	
	Station #4 – ground storage tank vent with large mesh screen (~4 mesh)

10		
	Station #4 – sampling location	

11		
	Station #4 – view of ground storage tank vent from the top of the GST looking east toward the Chlorine Storage Building	

12

Station #4 – View of the sand collection pit access hatch prior to the GST.

13		
	Well #43 – view of well pump on concrete base with casing vent screened, extended, and downturned; Draw down tube screened; also pressure relief valve and discharge point screened.	

14		
	Well #34 – natural gas powered pump.	

15		
	Well #34 – well casing vent extended but pointing outward; Also note the 55-gallon drum of lubricating oil near the pump base.	

16

Well #34 – pressure relief valves with screened discharge point.

17		
	Well #34 – drains for lubricants and antifreeze for the natural gas powered pump	

18

Station #3 – electrical pumps, plumbing components, and sample location

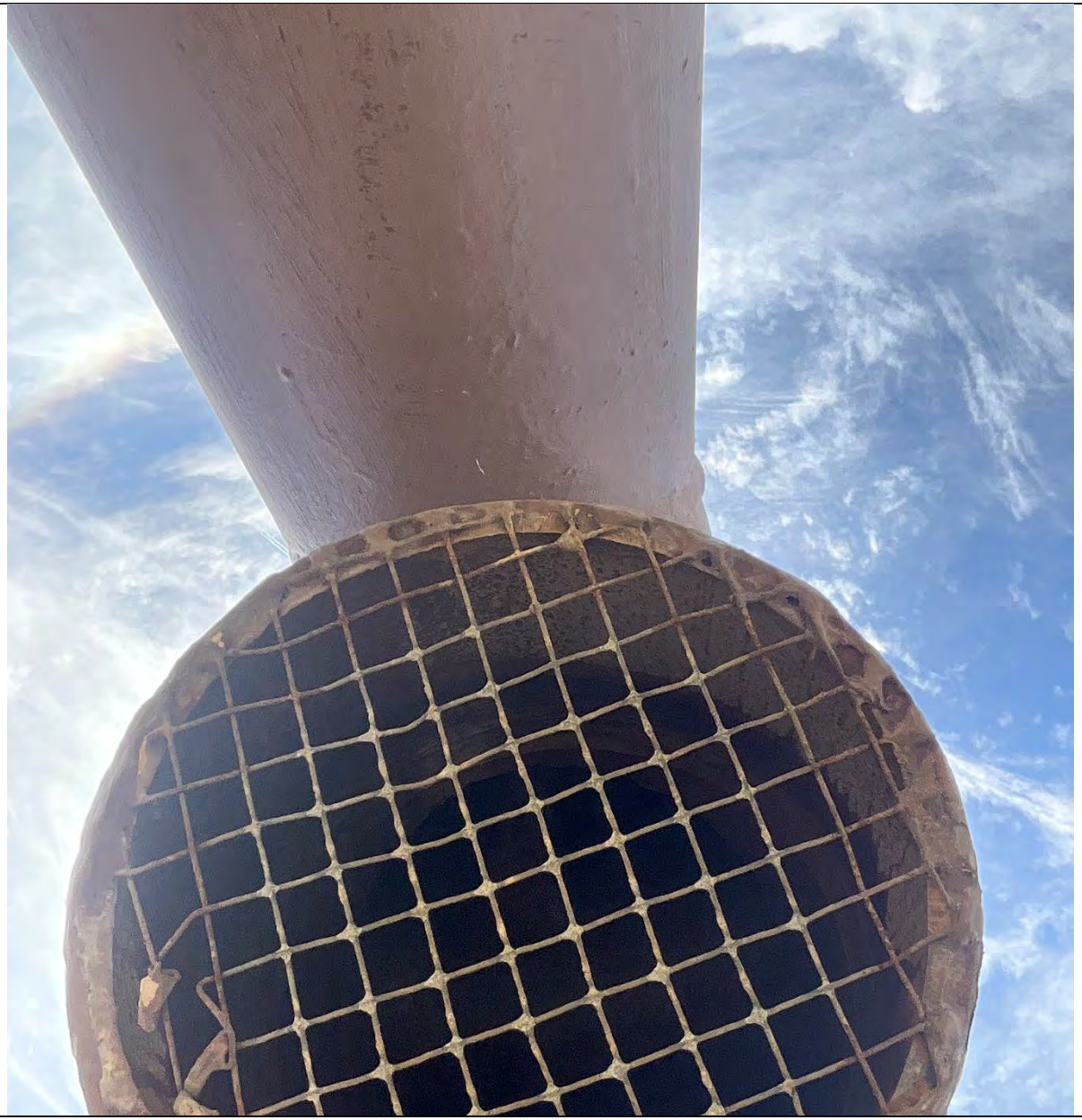
19

Station #3 – split casing pump and components

20		
	Station #3 – Diesel powered pump	

21		
	Station #3 – High Service Pump – packing leak	

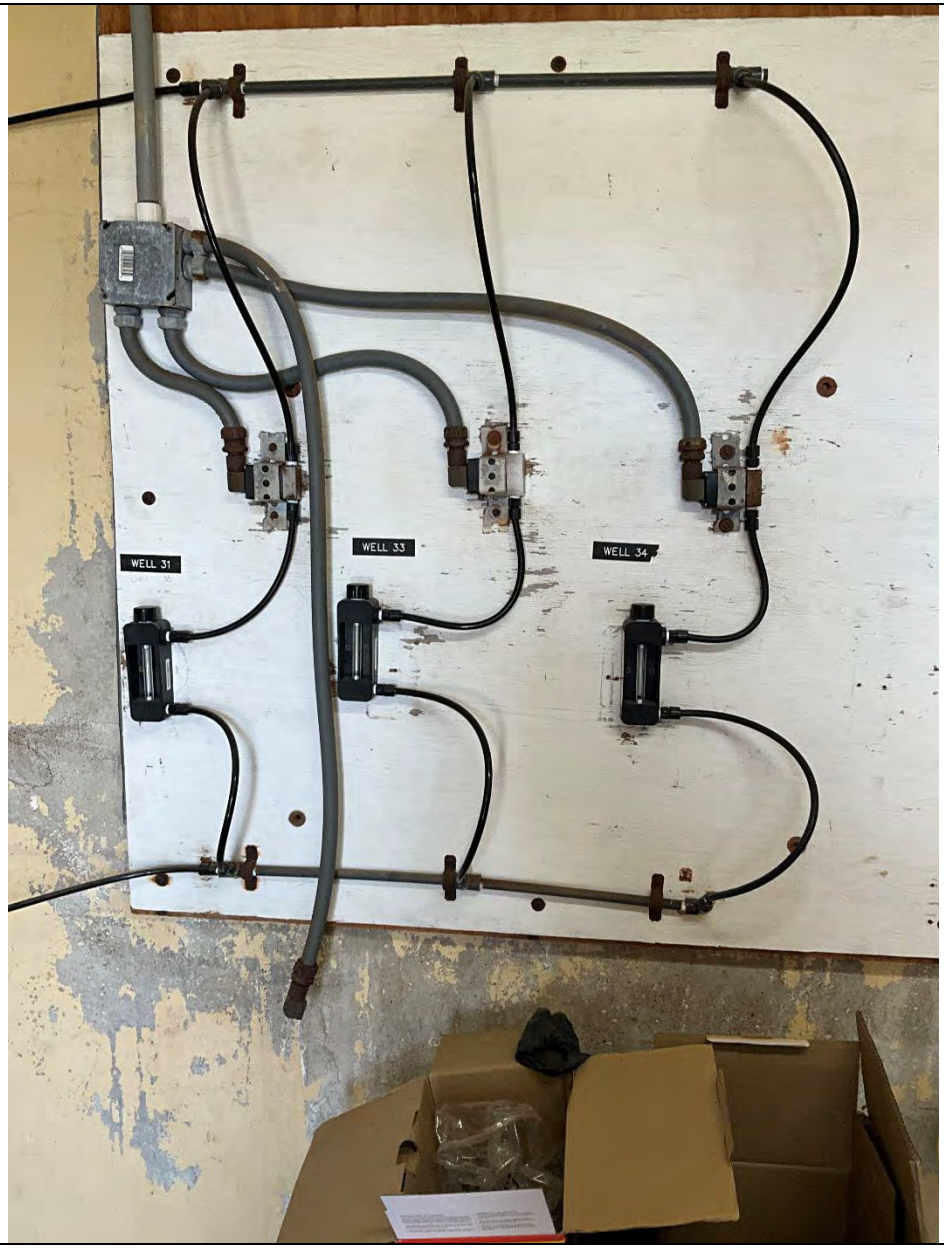
22



Station #3 – Ground storage tank vent screen with large mesh (4 mesh)

23		
	Station #3 – Ground storage tank concrete access hatch, drain valve, and drain location.	

24		
	Station #3 – gas chlorine cylinders with auto switch valves, valve wrenches, and digital scale monitor	

25		
	Station #3 – chlorine gas feed adjustment mechanism for each source water line	

26		
	Plugged Well #3-1	

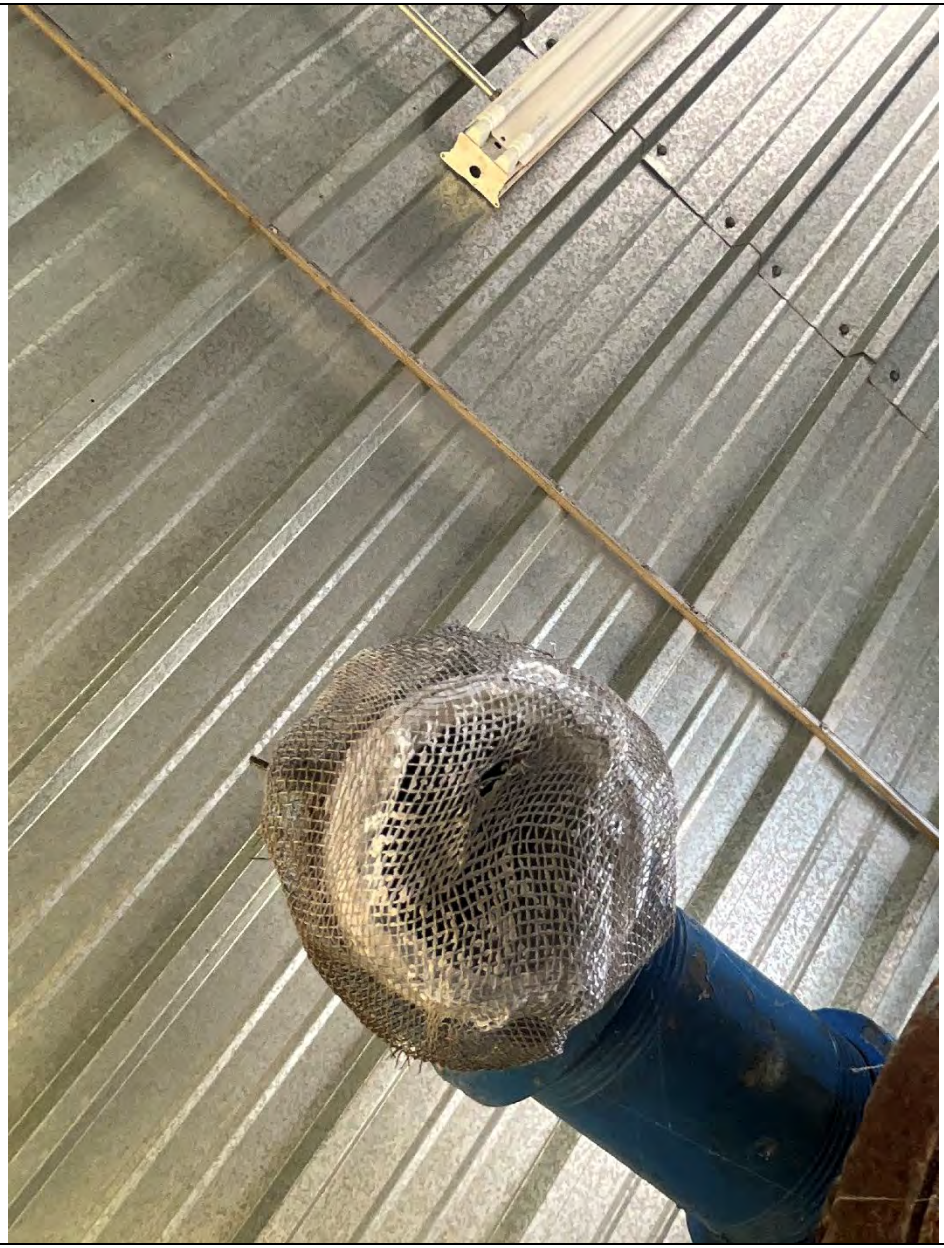
27		
	Well #35 – submersible pump with physical barriers	

28		
	Well #35 - Tree at the base of well house	

29		
	Well #35 – Well building on tracks to allow access to the pump components	

30		
	Well #3-3 without a casing vent	

31		
	Well #3-3 drawdown tube extended and screened; however, facing outward and not downturned	

32		
	Well #3-3 – pressure relief valve discharge point with tears in the screen.	

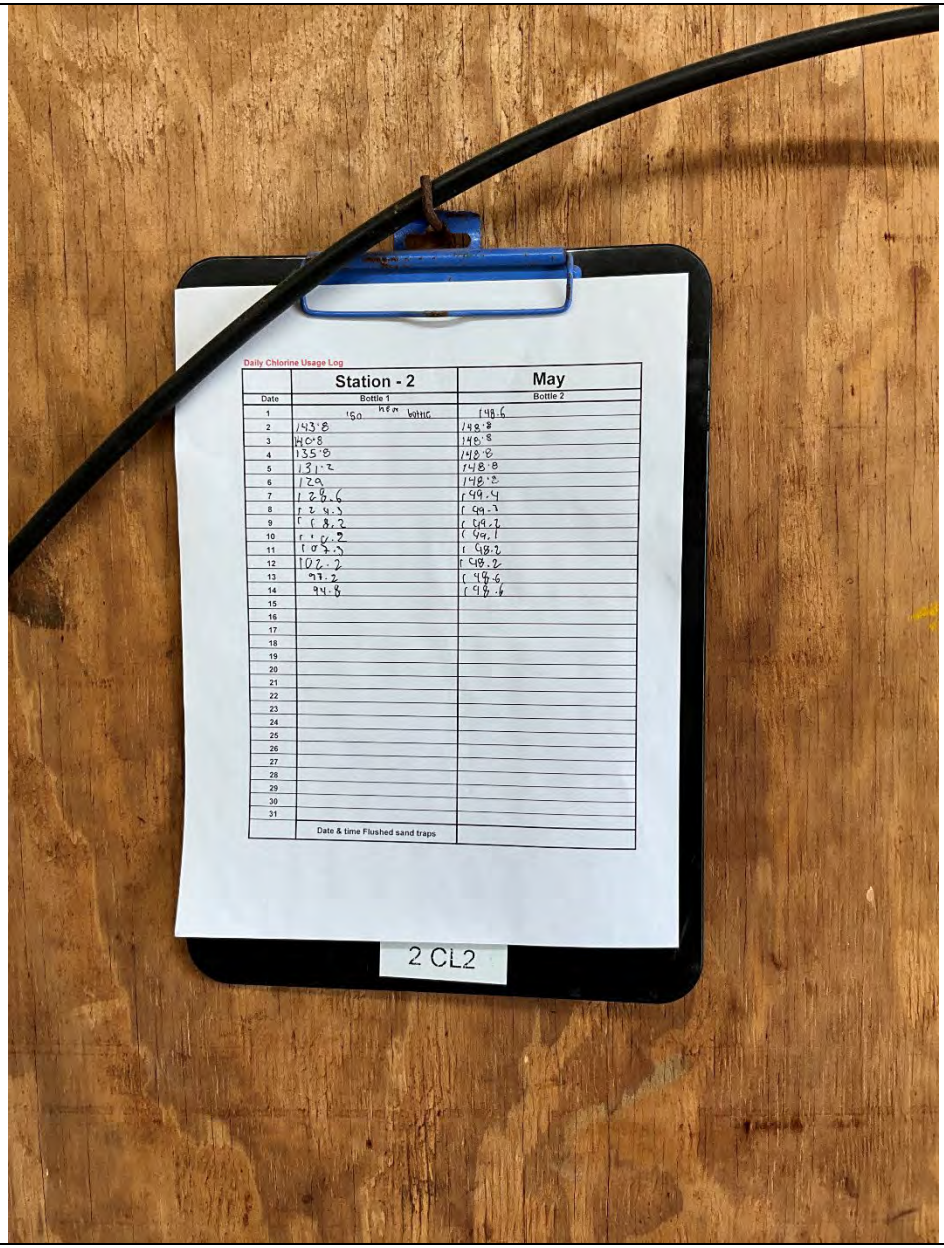
33		
	Well #3-3 view of exterior of building and security fencing	

34		
	Well #2-9 with pressure washer connected to the casing lubrication water line without a backflow prevention device or reduced pressure assembly.	

35		
	View of Well #2-9 casing lubrication line, pressure relief valve screened discharge point, check valve, isolation valve, and natural gas powered generator in the background.	

36		
	Well #2-9 view of second natural gas powered pump; note the 55-gallon barrel of oil near well pump base.	

37



Station #2 – chlorine gas bottle measurement log also monthly sand trap log

38

Station #2 – pump building interior

39

Station #2 – two electric high service pumps from the GST.

40		
	Station #2 - GST vent with large mesh screen and large hole in the screen	

41

Well # 2-7 – well pump base with drawdown tube / casing vent assembly screened.

42		
	Well #2-7 – natural gas powered generate with oil spill on the floor adjacent to the pump base.	

43

Well #2-7 – floor drain clogged and water accumulating on the floor of the building

44

Well #2-7 – discharge pipe with cap for pump to waste if necessary

45

Station #5 gas chlorine tanks and interior of the pump building

46

Well #53 – mouse droppings on the well pump

47		
		Well #53 – mouse nest in the electrical pump

48		
	Well #53 – uncovered electrical junction box from the variable frequency drive (VFD) panel	

49		
	Well #63 – gas chlorine cylinders with heavy corrosion due to cylinder leak	

50

Well #63 – well out of service due to chlorine injection pump repair

51		
	Well #62 – submersible pump electrical wiring without conduit from the junction box to the well casing.	

52		
	Water tower overflow screen with tears in the bottom of the screen	

53		
	Water tower new manway installed; note the pallet below the manway where the ground was heavily eroded due to water flow after draining.	

54

Water tower sampling location and inspection log

55		
	Well #1-1 - gap in sanitary seal between well pump and well base	

56		
	Consecutive connection with National Beef – backflow prevention device protecting the connection.	

57		
	Well #1-7 – oil spilled on the floor of the well building below the natural gas-powered generator.	

58

Well #1-7 – well pump connected to the natural gas generator; note the 55-gallon drum of oil near the well base.

59		
	Station #1 – View of the top of two GSTs and the high service pump and chlorine storage building in the background; note no vent on either of the GSTs	

No changes were made to the original image files