

Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	12/10/2024 and 12/11/2024	
Media Program:	Drinking Water	
Regulatory Program(s)	Safe Drinking Water Act (SDWA)	
System Owner:	Oklahoma City Water Utilities Trust (OCWUT)	
System Name:	Tinker Air Force Base	
System Physical Location:	Tinker Air Force Base	
(city, state, zip code)	Oklahoma, OK	
Mailing address:	500 W. Main Street, Suite 100, Oklahoma City, OK 73102	
(city, state, zip code)	Oklahoma, OK	
County:	Oklahoma	
System Phone Number	405-297-3731	
System Contact:	Jeff Bolden	Water Quality Superintendent, TINKER AFBC/O OKC UTILITIES DEPT
	Jeff.bolden@okc.gov	
System Classification	Community Water System (CWS)	
PWS ID:	OK2005508	
Media Identifier Number:	N/A	
NAICS:	N/A	
SIC:	N/A	
Primary personnel participating in inspection:		
Stephen Clark	ERG (EPA Contractor)	Inspector
Kevin Sarmiento	ERG (EPA Contractor)	Inspector
Eddie Anguiano	Oklahoma Department of Environmental Quality (ODEQ)	
Andrew Shaw	ODEQ	
Jeff Kindschuh	Tinker AFB	Contracting Officer Representative Water/Wastewater
Trey Perdue	Oklahoma City	Tinker AFB Site Manager
Jeromy Brush	Inframark (Oklahoma City Contractor)	Contract Operator
EPA Lead Inspector Signature/Date	Stephen Clark Digitally signed by Stephen Clark Date: 2025.01.30 14:03:15 -07'00'	
	Stephen Clark, ERG (EPA Contract Inspector)	
Supervisor Signature/Date	RUBEN ALAYON-GONZALEZ Digitally signed by RUBEN ALAYON-GONZALEZ Date: 2025.01.31 14:12:01 -06'00'	
	Ruben Alayon-Gonzalez, EPA Region 6, Enforcement and Compliance Assurance Division, Water Resources Section	

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

On December 10-12, 2024, EPA contract inspectors from ERG (hereinafter the Inspection Team) conducted an announced Safe Drinking Water Act (SDWA) compliance inspection of the Tinker Air Force Base (AFB) Public Water System (the System), PWS ID No. OK2005508. The inspection began at approximately 8:00 a.m. on December 10, 2024, and finished at approximately 4:00 p.m. on December 11, 2024. The System is owned by the Oklahoma City Water Utilities Trust (OCWUT) and operated by the Oklahoma City Utilities Department.

Stephen Clark and Kevin Sarmiento presented their SDWA inspector credentials to the System representatives during the opening conference. The 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 Inspection Team met with Jeff Kindschuh, the Tinker AFB's Contracting Officer Representative, as well as other System representatives. Representative of the Oklahoma Department of Environmental Quality (ODEQ) also attended the inspection. Refer to Appendix 2, Inspection Sign-In Sheets.

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

- Discussions with System representatives regarding the operation and maintenance of the PWS.
- Site visits to the following locations:
 - All active wells (Wells 3, 5, 13, 21, 23, 24, 25, 26, 29, 30, 31, 33, 34)
 - One inactive well (Well 32)
 - Finished Water Storage Tanks: A Tower North, A Tower South, Navy Tower, 3001 Tower, and C Tower.
 - Booster Pump Station 919
 - Chlorination Station 774 (visited in conjunction with Well 3)

Photos taken during the inspection are included in Appendix 1, Photograph Log. All photographs were taken by System representatives due to Tinker AFB photograph policy.

SYSTEM DESCRIPTION

The System is a ground water system that provides service to 1,069 service connections and an estimated population of 23,800 individuals, according to the Oklahoma Safe Drinking Water Watch database. The System is a community water system as defined by 40 C.F.R., Part 141, Subpart A. The System sells water to the Tinker AFB Housing PWS (PWS ID OK8005550).

On November 21, 2021, PWS ownership transferred from the U.S. Air Force to the Oklahoma City Water Utilities Trust (OCWUT) under a 50-year contract. OCWUT operates and maintains the PWS with assistance from its contractor, Inframark.

The System's source water consists of 23 groundwater wells, 13 of which were active at the time of the inspection. Refer to Table 1 below for the operating status of the wells, according to information provided by the System prior to the inspection. System representatives stated that the average daily

demand is approximately 1.3 million gallons per day (MGD) and that the System does not operate more than 7 wells at a time to satisfy current demand.

Table 1. Operating Status of Source Wells

Well #	Building #	Operating Status
1	604	Decommissioned
2	665	Out of Service
3	764	Active
5	901	Active
7	1012	Decommissioned
8	36	Decommissioned
11	3209	Out of Service
12	3211	Out of Service
13	3213	Active
20	2127	Out of Service
21	2119	Active
22	2113	Out of Service
23	2109	Active
24	3801	Active
25	3802	Active
26	3803	Active
27	4044	Out of Service
29	849	Active
30	56601	Active
31	55300	Active
32	50414	Out of Service
33	53902	Active
34	1021	Active

The distribution system consists of five elevated finished water storage tanks, one booster pump station, and approximately 86.5 miles of distribution mains and service lines. The distribution system is divided into three pressure zones: Area A, Area B-Navy, and Area C. The System's service connections are not metered. The Tinker Aerospace Complex, located on the south side of the Tinker AFB, is served directly by the City of Oklahoma City, and is not connected to the System.

Section II – INSPECTION ACTIVITY SUMMARY

The 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. The System representatives provided documents in response to a document request included in EPA Region 6's inspection notification email. The information in this report is based on document review, conversations with System representatives, and observations made during this inspection.

Staffing Information

The System employs the following licensed operators according to a summary provided:

- Three operators with Class B Waterworks
- Two operators with Class C Waterworks
- Two operators with Class D Waterworks
- Three recent hires without operator certifications (one with temporary Class D Waterworks license, and two employees that were hired less than 30 days prior to the inspection)

Operators conduct routine checks of wells and finished water storage tanks, which are documented using checklists and operator logbooks. Well pumps, including chlorine gas feed systems, are operated manually based on system demand. Operators check wells that are operating twice per 12-hour shift and check wells that are not operating once per 12-hour shift. Finished water storage tanks are checked three times per shift. The System's suite of standard operating procedures (SOPs) included SOPs for tasks such as well checks, chlorine room inspections, chlorine feed adjustments, and storage tank checks.

At the time of the inspection, the System was installing equipment for a supervisory control and data acquisition (SCADA) system.

Initial System Deficiency Corrections and Capital Upgrades

Initial System Deficiency Corrections (ISDCs) and corresponding capital upgrade projects were identified by the Defense Logistics Agency, Tinker AFB, and OCWUT as component of the PWS contracting process. The ISDCs include various system-wide improvements, including the repair and replacement of source water and distribution system infrastructure to increase dependability and reliability. At the time of the inspection, OCWUT was in the process of implementing the scope of work for these ISDCs, as well as additional deficiencies identified during annual condition assessments. The Air Force Civil Engineering Center (AFCEC) reviews and approves funding for capital improvement projects.

Cross-Connection Control Program

The System's cross-connection control program is implemented by Tinker AFB personnel and OCWUT. Per resolution between the federal government and OCWUT, the federal government is responsible for enforcing cross-connection/backflow prevention requirements for new construction initiated by the federal government, and OCWUT is responsible for enforcing these regulations for OCWUT-initiated construction. The Army Corp of Engineers provides oversight for new construction projects to ensure these requirements are implemented. Certified testers employed by a Tinker AFB contractor conduct annual testing of backflow prevention devices per standardized protocols.

Hydrant Inspection and Flushing

The System inspects and flushes approximately 20 percent of hydrants each year and tracks these activities in a spreadsheet. The System uses the National Fire Protection Association's color-coding system to categorize each hydrant's water flow capacity based on the results of fire flow testing. The System also conducts routine flushing of dead-end lines.

Valve Exercising

The System has mapped all valves and exercises each distribution system valve annually. Maintenance activities are tracked via a spreadsheet and maps. System representatives stated the System is transition to a GIS-based tracking system. The System has a valve system maintenance trailer.

Customer Complaints

The System tracks customer complaints as a component of the monthly system performance review. The System assigns incidents as priority ratings (e.g., Emergency, Urgent) and tracks information such as the problem source and cause, time of notification, and resolution.

Section 1433 Review

The Inspection Team reviewed the System's Section 1433 Risk and Resilience Assessment and Emergency Response Plan. The Inspection Team also reviewed the System's cybersecurity practices.

The System's RRA document was available at the time of the inspection and was dated to show that it was timely and completed before the date of the certification of completion. The RRA assessed all required elements of 1433(a).

The System's ERP document was available at the time of the inspection and was dated to show that it was timely and completed before the date of the certification of completion. The ERP included all required elements of Section 1433(b).

FACILITY/SYSTEM WALKTHROUGH

Wells

The Inspection Team's observations included many similar observations across each well site. General observations for all wellheads and chlorine rooms are presented, as well as additional unique observations at well sites, as applicable.

General Observations at Wellheads

The Inspection Team made the following general observations during site visits to the wells:

- Wellheads are located in secure wellhouses, with signage indicating OCWUT ownership. Wells 3 and 5 are located in underground vaults, each equipped with a sump and sump pump. System representatives stated that OCWUT plans to relocate these wells to aboveground locations.
- Wellheads are equipped with well level indicators, check valves, smooth-nozzle raw water sample taps, pressure gauges, and flow meters. These components appeared to be working properly at the time of the inspection. Wellheads vents were covered with #24 mesh screens.
- Each wellhead visited appeared to have sanitary seals to prevent the entry of contaminants into the source water.
- Concrete well pads are raised approximately 18 inches or more above the floor of the wellhouses. Note that at Well 23, the concrete well pad was approximately 6 inches above the

floor of the wellhouse. The Inspection Team did not observe evidence of flooding in the surrounding area.

- Well discharge piping at Wells 3, 5, 23, 24, 25, 29, 30, 32, and 33 did not have air relief valves installed and Well 31 had an air relief valve installed downstream from the check valve.
- Wells are manually controlled, along with chlorine feed rates, and the system does not have any remote monitoring capabilities installed. However, System representatives stated that they are in the process of installing and integrating a SCADA system.

Chlorine Rooms

The Inspection Team observed the chlorine gas storage/feed rooms at each wellhead and made the following general observations during site visits:

- The System used standardized equipment for the chlorine feed systems.
- The rooms had chlorine gas detection systems located approximately 1 foot above the floor and outward-opening doors with windows and crash bars. The Inspection Team observed that the chlorine gas detector in the chlorine storage/feed room at Well 25 was located approximately 4 feet above the floor (refer to [Appendix 1, Photograph 1](#)).
- The System labels and secures the chlorine gas cylinders in place. It stores in-use cylinders on scales to monitor usage.
- The ventilation systems consisted of an inlet vent and an outlet vent with a fan.
- The carrier water systems had one pump, except for Well 25, which had two pumps. System representatives stated the System is upgrading chlorine feed systems to include two pumps. The System maintains spare pumps.

Well 3/Chlorination Station 774

The Inspection Team observed a threaded hose-bibb on the raw water line used for chlorine gas carrier water (refer to [Appendix 1, Photographs 2 and 3](#)). System representatives stated that the hose-bibb is used to hose down the chlorination station. A hose was not connected to the hose-bibb at the time of the inspection.

Well 5

The Inspection Team observed the well pressure relief drain line discharged outside the wellhouse to a catch basin. The discharge line was approximately one inch above the catch basin (refer to [Appendix 1, Photograph 4](#)).

Well 21

The Inspection Team observed that the pressure relief drain line discharges to a floor drain (refer to [Appendix 1, Photographs 5 and 6](#)). The floor drain leads to an outside storm water catch basin (refer to [Appendix 1, Photograph 7](#)).

Well 24

Standing water was present in the vault underneath the wellhead piping (refer to [Appendix 1, Photographs 8 and 9](#)). The finished water pipe was partially submerged. The vault had a sump pump but

no sump. It was unclear to the Inspection Team if there was an issue with the sump pump or if the water level was not high enough to trigger the pump's float activator.

Well 25

The Inspection Team observed that the pressure relief drain line discharged outside the wellhouse. The drain line was located on a splash pad for a roof downspout (refer to Appendix 1, Photograph 10). The splash pad appeared to slope back to the wellhouse, and it appeared stormwater may accumulate in the area of the drain line.

Well 30

The well has a line that sends raw water to the Tinker Golf Course irrigation pond approximately a quarter of a mile from the well. Outside the wellhouse, there are two valves that are manually turned to direct flow to the distribution system or to the golf course. Operators document whether the well is being operated to provide raw water to pond or to provide finished water to the distribution system. System representatives stated that the chlorine treatment is turned off while serving the golf course and turned on when serving the water system.

System representatives stated the raw water line that fills the pond has an air gap: the line terminates approximately 2 to 3 feet above the elevation of the pond's overflow structure (i.e., it terminated 2 to 3 feet above the pond's maximum water level) and estimated the line was a 10-inch diameter pipe. Additionally, System representatives stated that there was no check valve or screening installed on the line serving the golf course irrigation pond. Due to time constraints, the Inspection Team did not visit the irrigation pond during the inspection.

Well 32

System representatives stated the well had been out of service since March/April 2024 due to electrical issues that caused the well pump to fail. They stated the well was isolated from the distribution system by the isolation gate valve on the wellhead discharge piping.

Finished Water Storage Tanks

The Inspection Team's observations included many similar observations across each tank site. General observations for all tanks are presented, as well as additional unique observations at tank sites, as applicable. Note, the Inspection Team observed each finished water storage tank from the ground level and did not climb any of the tanks.

General Observations at Storage Tanks

The Inspection Team made the following general observations during site visits to the finished water storage tanks:

- Each Tank site is surrounded by a locked perimeter fence.
- Tanks sites have "No Trespassing" signs documenting OCWUT ownership, the asset identifier, and the phone number for the Oklahoma City Utilities Department.
- Overflow pipes drained to splash pads and had flap valves that appeared to be well sealed.

- The Inspection Team observed cracked and spalling concrete on multiple concrete support pedestals on A Tower North, Navy Tower, and Tower 3304 (refer to Appendix 1, Photographs 11–15)
- System representatives stated that the cathodic protection systems are outdated and are scheduled to be replaced (refer to Appendix 1, Photograph 16 for an example at A Tower South)
- The Inspection Team obtained the following pressure readings from tank pressure gauges:
 - Navy Tower: 53.2 psi (the tank had an electronic pressure logger)
 - Tower 3001: approximately 55 to 60 psi
 - C Tower: approximately 54 psi.

A Tower North

System representatives stated that the tank is intentionally overflowed approximately once every 2 weeks for approximately one hour to reduce water age in the distribution system. The Inspection Team observed sodium bisulfite tables adjacent to the overflow splashpad to dechlorinate overflow water (refer to Appendix 1, Photograph 17).

Navy Tower

The Inspection Team observed a pressure tank, which appeared to be a bladder tank, inside the valve vault. At the time of the inspection, System representatives did not know the purpose of the tank. It was unclear to the EPA Inspectors if the tank was still serving its intended purpose or being maintained properly.

Booster Pump Station

Booster Station 919

The station is an aboveground station inside a locked building. The two pumps are used to pump from pressure zone A to pressure zone C. System representatives stated that the System used to operate the pumps continuously but now operate the pumps approximately once per month. They explained that the reduction in frequency is due to distribution system improvements (e.g., the distribution system was separated into three zones and Pressure Reducing Valves (PRVs) were installed between the zones). The System operates the station primarily to reduce water age in the distribution system and maintains the station for emergency purposes.

During the site visit, the Inspection Team observed that all four pressure gauges used to measure the suction and discharge pressures did not appear to be operating correctly. The North Pump's suction gauge read the gauge's maximum pressure, and the discharge pressure read below 0 psi (refer to Appendix 1, Photograph 18). The South Pump's suction gauge read approximately 100 psi, and the discharge pressure gauge read approximately 150 psi (refer to Appendix 1, Photograph 19). System representatives stated that they anticipated the discharge pressures to be approximately 50 to 60 psi, and that pressures above 100 psi were far too high. After the site visit, System representatives determined that an issue with the heater in the booster station caused the pressure gauges to fail due to cold temperatures. System representatives provided photographs of the new gauges, which read approximately 55 psi (refer to Appendix 1, Photographs 20–23).

Section III – AREAS OF CONCERN

Oklahoma Administrative Code (OAC) Title 252, Chapter 631, Subchapter 3-1 (OAC 252:631-3-1) states, “All systems must properly operate, in accordance with a[n] Operations and Maintenance manual as required by OAC 252:626-3-7. All systems must maintain each unit to provide treatment of the water in accordance with the DEQ approved plans and specifications, in accordance with the purpose for which the units were designed and according to the terms of their permits. Permits may contain more stringent provisions than contained in the rules to meet the requirements of the provisions of 40 CFR adopted by reference in this chapter. Employees must be trained in the proper operation and maintenance of the system.”

Area of Concern 1. During the site visit at the Navy Tower, the Inspection Team observed that the valve vault contained a pressure tank, which appeared to be a bladder tank. At the time of the inspection, System representatives did not know the purpose of the tank. It was unclear to the Inspection Team if the tank was still serving its intended purpose or being maintained properly.

OAC Title 252, Chapter 631, Subchapter 3-20 (OAC 252:631-3-20) states, “All PWS systems must maintain a water pressure of at least twenty-five (25) psi throughout the distribution system.”

Area of Concern 2. During the site visit at Booster Station 919, the Inspection Team observed that all four pressure gauges used to measure the suction and discharge pressures did not appear to be operating correctly. The North Pump’s suction gauge read the gauge’s maximum pressure and the discharge pressure read below 0 psi (refer to [Appendix 1, Photograph 18](#)). The South Pump’s suction gauge read approximately 100 psi and the discharge pressure gauge read approximately 150 psi (refer to [Appendix 1, Photograph 19](#)). System representatives stated they anticipated the discharge pressures to be approximately 50 to 60 psi, and that pressures above 100 psi were far too high. After the site visit, System representatives that an issue with the heater in the booster station caused the pressure gauges to fail due to cold temperatures. System representatives provided photographs of the new gauges, which read approximately 55 psi (refer to [Appendix 1, Photographs 20–23](#)).

OAC Title 252, Chapter 626, Subchapter 5-15 (OAC 252:626-5-15) states, “Do not allow a physical connection between a line carrying a public drinking water supply and a line carrying water of unknown or questionable quality.

Area of Concern 3. System representatives stated that the 10-inch water line connecting Well 30 to the Tinker Golf Course irrigation pond, approximately a quarter of a mile from the well did not have a backflow prevention device installed. Two valves are manually turned to direct flow to the distribution system or to the golf course. System representatives stated that the chlorine treatment is turned off while serving the golf course and turned on when serving the water system. System representatives stated the raw water line that fills the pond has an air gap: the line terminates approximately 2 to 3 feet above the elevation of the pond’s overflow structure (i.e., it terminated 2 to 3 feet above the pond’s maximum water level).

AWWA M14 Backflow Prevention and Cross-Connection Control, Chapter 6 Sample Hazards and Proper Protection, Table 6-2 describes recommended protection at fixtures and equipment found in water treatment plants. For hose-bib connections, Table 6-2 specifies a hose-bib vacuum breaker as the recommended minimum protection.

Area of Concern 4. The Inspection Team observed a threaded hose-bibb on the raw water line used for chlorine gas carrier water (refer to [Appendix 1, Photographs 2 and 3](#)). System representatives stated that the hose-bibb is used to hose down the chlorination station. A hose was not connected to the hose bibb at the time of the inspection.

Recommended Standards for Water Works (Ten States Standards) (2022 Edition), Section 3.2.7 contains standards for well pumps, discharge piping, and appurtenances. **Section 3.2.7.3(a)(3)** states the discharge piping shall “Be protected against the entrance of contamination.” **Section 3.2.7.3(a)(6)** states the discharge piping shall, “Where applicable, be equipped with an air release-vacuum relief valve located upstream from the check valve, with exhaust/relief piping terminating in a downturned position at least 18 inches above the floor and covered with a 24-mesh corrosion resistant screen”

Area of Concern 5. At Well 5, the Inspection Team observed that the pressure relief drain line discharged outside the wellhouse into a catch basin, approximately one inch above the basin (refer to [Appendix 1, Photograph 4](#)).

Area of Concern 6. At Well 21, the Inspection Team observed that the pressure relief drain line discharges to a floor drain (refer to [Appendix 1, Photographs 5 and 6](#)). The floor drain leads to an outside storm water catch basin (refer to [Appendix 1, Photograph 7](#)).

Area of Concern 7. At Well 25, the Inspection Team observed that the pressure relief drain line discharged outside the wellhouse. The drain line was located on a splash pad for a roof downspout (refer to [Appendix 1, Photograph 10](#)). The splash pad appeared to slope back to the wellhouse, and it appeared stormwater may accumulate in the area of the drain line.

AWWA M42-13 Steel Water-Storage Tanks, Chapter 8 Routine Operation and Maintenance states, “Overflow pipes on tanks are intended for occasional use only. Tanks should not be regularly overflowed, and the overflow should not be used as a visual control for pumps and valves. Extreme overuse of the overflow pipe may damage the pipe or brackets. Trickling overflowing water can freeze and obstruct the overflow pipe.”

Area of Concern 8. System representatives stated that the System intentionally overflows the A Tower North finished water storage tank, approximately once every 2 weeks for approximately one hour, to reduce water age in the distribution system. The Inspection Team observed sodium bisulfite tables adjacent to the overflow splashpad to dechlorinate water from the overflow pipe (refer to [Appendix 1, Photograph 17](#)). System representatives stated that the System is evaluating/planning system improvements to reduce water age and will cease intentional overflows.

AWWA M42-13 Steel Water-Storage Tanks, Chapter 3 Cathodic Protection states, “Annual inspection of the cathodic protection system by the manufacturer or by a qualified corrosion engineer is recommended. At a minimum, this inspection should include an overall examination of the entire cathodic protection system, replacement of all defective parts, a potential profile survey, a physical check of the anode placement, and a written report...Cathodic protection systems should be tested and inspected on a regular basis to ensure that they provide the maximum level of corrosion control to the submerged steel tank surfaces.”

Area of Concern 9. System representatives stated the cathodic protection systems at the finished water storage tanks are outdated and are scheduled to be replaced (refer to Appendix 1, Photograph 16 for an example at A Tower North). The Inspection Team noted the System’s ISDC scope of work includes cathodic protection systems.

Closing Conference

On December 11, 2024, the Inspection Team conducted a closing conference with System representatives at approximately 4:00 p.m. Refer to Appendix 2, Inspection Sign-In Sheets. The Inspection Team reviewed observations with the System representatives and explained that the observations were preliminary and did not constitute any formal compliance determinations.

Section IV – LIST OF APPENDICES

Appendix 1 – Photograph Log

Appendix 2 – Inspection Sign-in Sheets

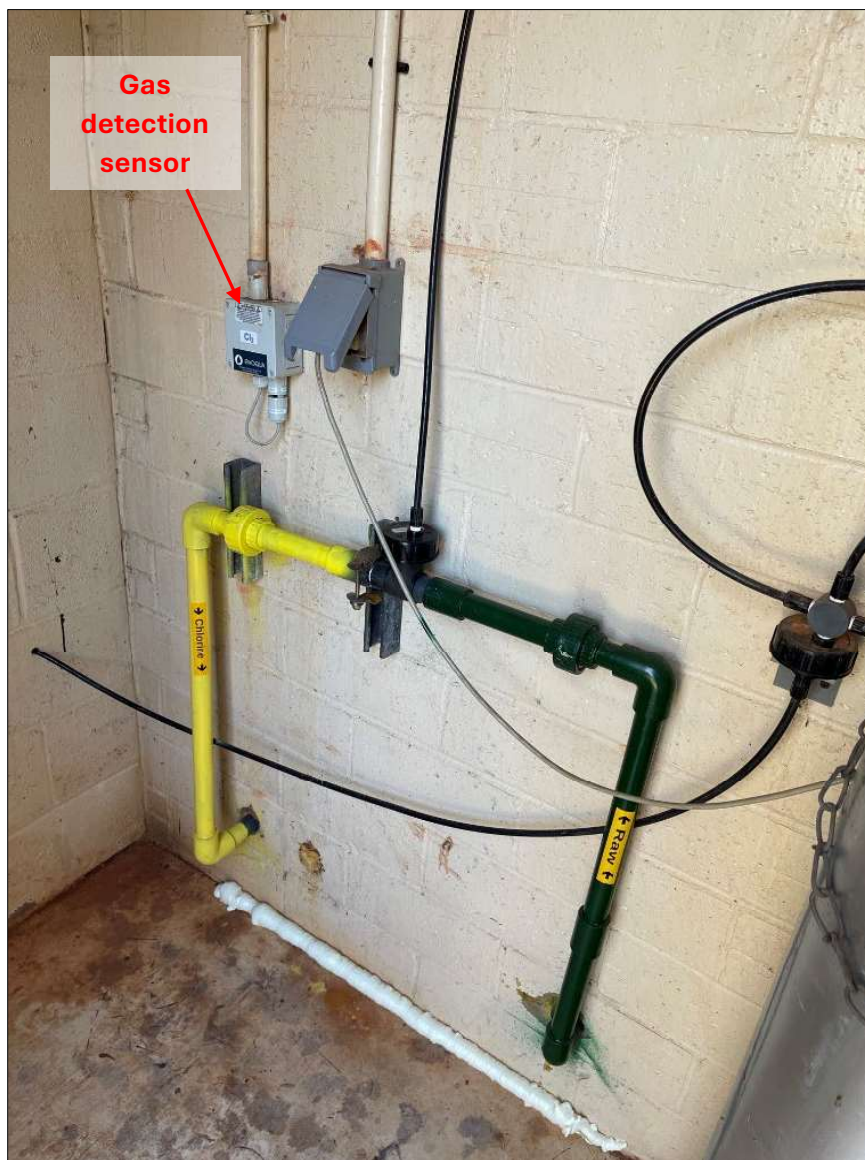


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 1

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 1. Well 25 Building 3802 IMG_3169.jpeg

Description: View inside the chlorine feed room. The room's chlorine gas detection sensor was approximately 4 feet above the floor.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 2

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 2. Chlorination Station 774 IMG_3121.jpeg

Description: View inside the station. A threaded hose-bibb was installed on the raw water line. The System uses the hose-bibb to wash down the inside of the station.

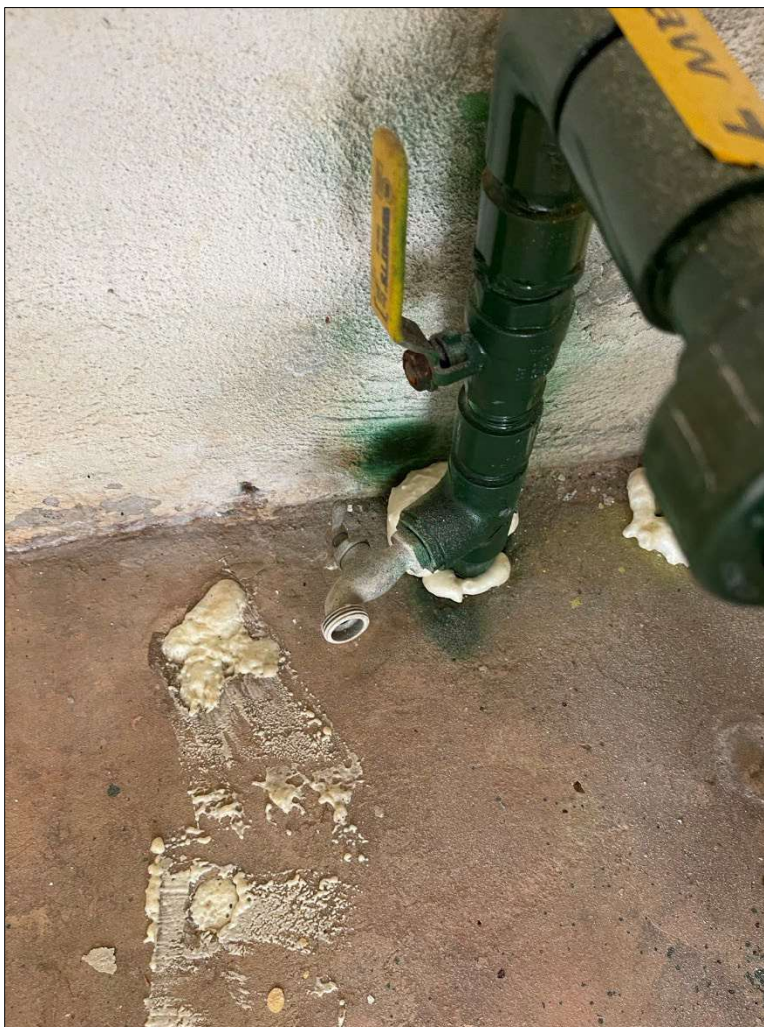


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 3

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 3. Chlorination Station 774 IMG_3120.jpeg

Description: View of a threaded hose-bibb on the raw water line shown in Photograph 2.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 4

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 4. Well 5 IMG_3129.jpeg

Description: View of the well's pressure relief drain line that discharge outside the wellhouse to a catch basin.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 5

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 5. Well 21 IMG_3143.jpeg

Description: View of the wellhead. The pressure relief line drained to a floor drain.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 6

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 6. Well 21 IMG_3147.jpeg

Description: Close-up view of the pressure relief line and floor drain.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 7

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 7. Well 21 IMG_3146.jpeg

Description: View of the stormwater vault to which the pressure relief line drained. The floor drain line appeared to be one of the downturned lines on the right side of the photograph. It was unclear to the Inspection Team if the vault was subject to flooding, thus posing a sanitary risk to the wellhead.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 8

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 8. Well 24 IMG_3172.jpeg

Description: View of the wellhead. Standing water was present in the vault underneath the discharge piping (refer to Photograph 9).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 9

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 9. Well 24 IMG_3173.jpeg

Description: View of standing water in the vault underneath the wellhead piping. The finished water pipe was partially submerged. The vault had a sump pump but no sump. It was unclear to the Inspection Team if there was an issue with the sump pump or if the water level was not high enough to trigger the pump's float activator.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 10

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 10. Well 25 Building 3802 IMG_3166.jpeg

Description: View of the drain line for the pressure relief line. The drain line was located on a splash pad for a roof downspout. The splash pad appeared to slope back to the wellhouse, and it appeared stormwater may accumulate in the area of the drain line.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 11

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 11. A Tower North IMG_3106.jpeg

Description: View of one of the concrete support pedestals, which was cracked and spalling.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 12

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 12. A Tower North IMG_3107.jpeg

Description: View of one of the concrete support pedestals, which was cracked and spalling.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 13

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 13. Navy Tower IMG_3136.jpeg

Description: View of one of the concrete support pedestals, which was cracked and spalling.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 14

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 14. Navy Tower IMG_3137.jpeg

Description: View of one of the concrete support pedestals, which was cracked and spalling.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 15

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 15. Tower 3304 IMG_3151.jpeg

Description: View of crack/hole in one of the concrete support pedestals. One of the inspectors placed a pen inside the hole for reference.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 16

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 16. A Tower South IMG_3112.jpeg

Description: View inside the cathodic protection system control cabinet. System representatives stated the cathodic protection systems for the finished water storage tanks are outdated and scheduled to be replaced. The Inspection Team noted the System's ISDC scope of work includes cathodic protection systems.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 17

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 17. A Tower North IMG_3109.jpeg

Description: View of the overflow splash pad. The System intentionally overflows the tank to reduce water age in the distribution system. Sodium bisulfite tablets are on the ground surface adjacent to the splash pad for dechlorination.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 18

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 18. Booster Station 919 IMG_3158.jpeg

Description: View of the discharge pressure gauge for the North Pump. The pressure gauge read less than 0 psi. System representatives provided photographs of the replacement gauge that read approximately 55 psi.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 19

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 19. Booster Station 919 IMG_3161.jpeg

Description: View of the discharge pressure gauge for the South Pump. The pressure gauge read approximately 150 psi. System representatives provided photographs of the replacement gauge that read approximately 55 psi.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 20

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 20. Booster Station 919 Gauge 1 fix.jpeg

Description: View of one of the four pressure gauges the System replaced. System representatives provided photographs of the replacement gauge that read approximately 55 psi.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 21

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 21. Booster Station 919 Gauge 2 fix.jpeg

Description: View of one of the four pressure gauges the System replaced. System representatives provided photographs of the replacement gauge that read approximately 55 psi.

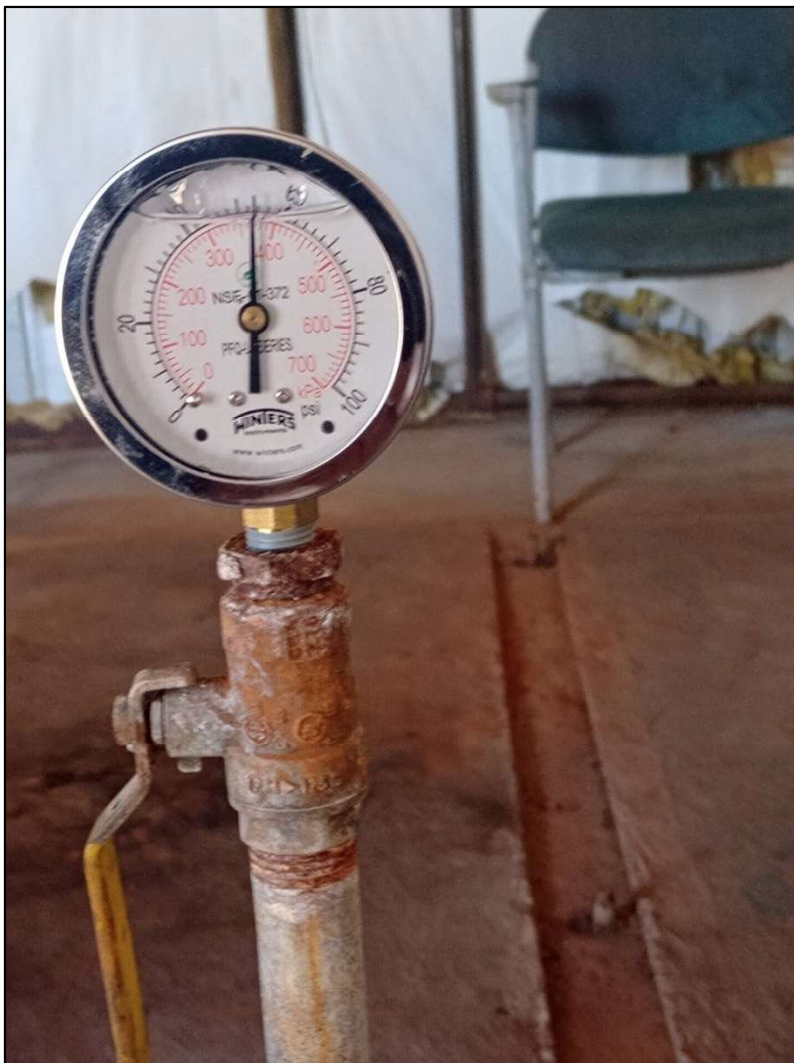


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 22

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 22. Booster Station 919 Gauge 3 fix.jpeg

Description: View of one of the four pressure gauges the System replaced. System representatives provided photographs of the replacement gauge that read approximately 55 psi.

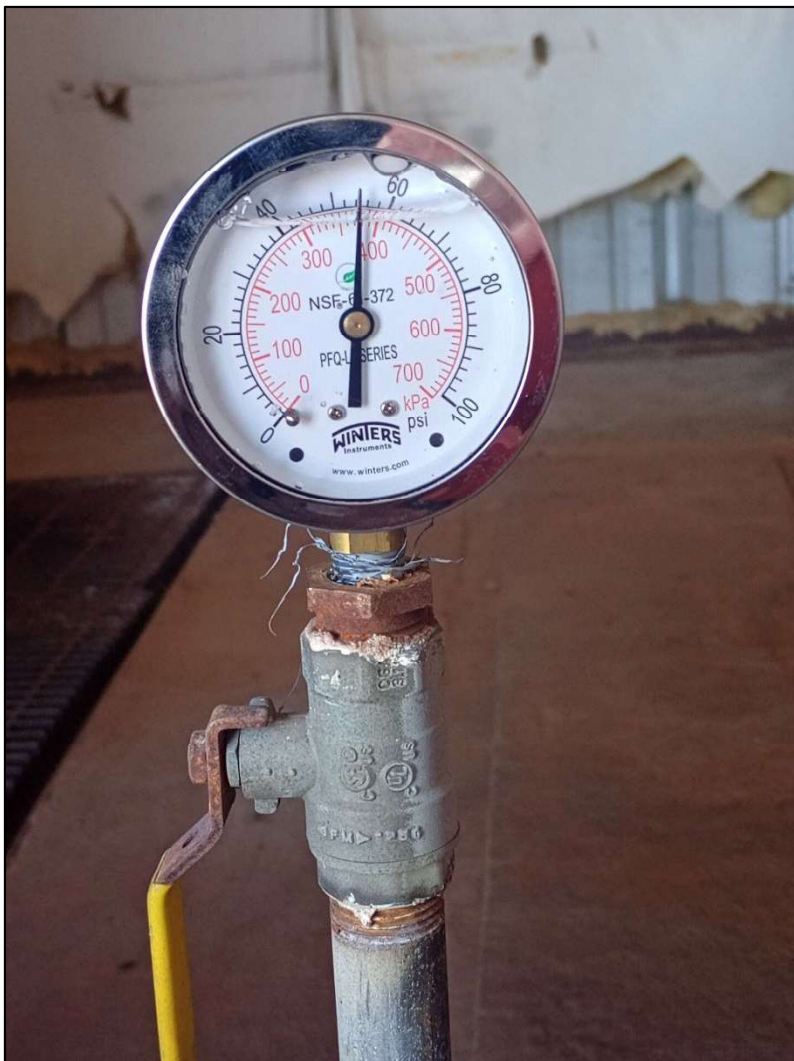


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 23

Location: Tinker Air Force Base Public Water System		
Tinker AFB	County: Oklahoma	State: Oklahoma



Photograph 23. Booster Station 919 Gauge 4 fix.jpeg

Description: View of one of the four pressure gauges the System replaced. System representatives provided photographs of the replacement gauge that read approximately 55 psi.

Appendix 2

Inspection Sign-in Sheets

Meeting: Combined Kick-Off Session for PWS
and Stormwater Multi-Media Inspection

Date: 10 December 2024

Name	Organization/Company	Telephone
Jeff Kindschuh	72 ABW/CENPE, Tinker AFB	405-734-1114
Stephen Clark	ERG (EPA Contractor)	720-789-8046
Kevin Sarmiento	ERG (EPA Contractor)	8 (703) 633-1642
Jason Avery	CE/ARLD	405-734-3114
Mark Thibodeau	DEQ	405-702-8108
LARRY BLADES	INFRAMARK	405-585-1951
Josh Morgan	OKC	405-906-5717
Jerome Brush	INFRAMARK	580 275 8017
TREY PERDUE	OCWUT	405-205-7607
Mike Taber	72 ABW/JAV	739-8025
Leigh Ann Kbrniller	OCWUT	405 482 4649
Lauren Creutz	GUERNSEY	479 806 2973
Marc Owen	72 ABW/CENPE	405-734-5902
Paul Ryckbost	Guernsey/OCWUT	405-535-9393
Racheal Pierce	OCWUT/ENG	405 297 3843
Chad Ashworth	72 ABW/CE	405 734 9852
John Lewis	72 ABW/CEIC	405-734-1228
Douglas Woods	72 OMRS/SGXB	405-582-6788
Theodore Wiseman	72 OMRS/SGXB	405-582-6777
Stephanie Wilson	72 ABW/CE	405 734-3451
Andrew Shaw	DEQ	703-966-7316

Brandt Flehardt

72 ABW/CE

405 786-2941

ARUNA A.

72 ABW/CEO

405-820-8404

Eddie Anguiano

OK DEQ/ECLs

570-206-9478

Stephen Henry

ODEQ

405-413-7743

NAME

ORG

PHONE

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72 ADW/CE

405 734 5319

SHARON H. CRAYTON

EPA/Region 6

(214) 883-5415

Jared Johnston-Cox

OKC

405 323 8113

Carol Johnson

EPA/RL

214-404-8276

Scott Mosker

72 ADW/CE/M

405-734-3515

FRANKIE KROGH

72 ADW/CE/M

405-734 3513

Meeting: Cybersecurity Discussions

Date: 11 December 2024 (2:30 PM - 3:30 PM Dismissal)

[illegible]

Meeting: RRA/ERP & Misc. Inspection Questions & Discussions Date: 11 December 2024 1pm-2:30pm

[illegible]

Meeting: EPA Inspection Outbrief/Closing Conference Date: 11 December 2024

Name	Organization/Company	Telephone
Jeff Kindschuh	72 ABW/CENPE, Tinker AFB	405-734-1114
Leigh Ann Kibmiller	OCWUT	405 982 9649
Racheal Pierce	"	405 297 3843
DAUREN CREUTZ	OCWUT / GUERNSEY	4179 806 2978
Paul Ryckbost	OCWUT / GUERNSEY	405 535 9393
TREY PERDUE	OCWUT	405-205-7607
Jeromy Brush	In Framark	580 275 8017
Stephen Clark	ERG (EPA Contractor)	720-789-8046
Andrew Shaw	DEQ	703-966-7316
Kevin Sarmient	ERG (EPA Contractor)	703-633-1642
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Jason Ma	OK OEO	(405) 702-8126
SHARROW A. CRAYTON	EPA / Region 6	(214) 983-5415
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FRANKIE KROTHUCH	72 ABW/CEXM	405 734 3513
Mike Taber	72 ABW/SAU	405 739-8025
Brandt Fleharty	72 ABW/CEI	405 736-2941
Carol Johnson	EPA / RB	(214) 404-8276
ARENA ABHAYAGOOA WARDHANA	72 ABW/CEO	(405) 820-8404
CAMERON TAYLOR	72 ABW/CEN	405 734-5319
WILLIAM WARD	72 ABW/CE	405 734 3451
Stephanne Wilson	72 ABW/CE	
Col Dismukes	72 ABW/CD	

