EPA United States Environmental Protection Agency

Region 6 Compliance Assurance and Enforcement Division

INSPECTION REPORT

Inspection Date(s):	02/28/2018		
Media:	Drinking Water		
Regulatory Program(s)	SDWA		
Company Name:	**Mescalero Apache Tribe (MAT)**		
Facility Name:	**Mescalero Fence Canyon Public Water System**		
Facility Physical Location:	Fence Canyon, New Mexico 88340 (Mescalero)		
(city, state, zip code)	**Mescalero Apache Reservation**		
Mailing address:	PO Box 250, Mescalero, NM-88340		
(city, state, zip code)	**Mescalero, NM 88340**		
County/Parish:	Otero County		
Facility Contact:	Sterlen Kane, Jr.	Compliance Officer, Division of Resource Management & Protection (DRMP)	
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FRS ID	110022323289		
SDWIS Facility PWS ID	063506233		
ICIS Programmatic ID	7378707		
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	Carol Peters		Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

David Esparza and Damon McElroy arrived on February 27, 2018 at 9:00m, for an announced Sanitary Survey of the MAT Fence Canyon and Whitetail PWSs. We presented our credentials and informed the group that this was an EPA Sanitary Survey to determine compliance with the facility's ability to provide safe drinking water under the regulatory authority and conditions of the Safe Drinking Water Act (SDWA). A Sanitary Survey consists of an inspection of the following eight elements:

1. Sources
2. Pumps and pumping facilities
3. Water treatment
4. Distribution
5. Monitoring
6. Management & Operations
7. Operator certification
8. Water storage facilities

Following this Fence Canyon PWS Sanitary Survey, MAT will be responsible for correcting any significant deficiencies observed and documented in this report (Ref. Section IV). According to the Ground Water Rule (GWR), the water system has 30 days from receipt of the sanitary survey report to consult with EPA regarding any appropriate corrective actions to address the significant deficiencies, and 120 days to complete the corrective actions or develop a schedule to complete them.

FENCE CANYON FACILITY DESCRIPTION

The Fence Canyon PWS is a community ground water system that serves approximately 110 residents through 30 service connections. Operations and maintenance (O&M) is generally conducted five days per week (Monday through Friday). The total MAT O&M encompasses thirteen Mescalero PWSs. Two (2) of these PWSs are operated seasonally. Currently there are no plans for new capital improvements. The average daily water demand is not quantified. The peak daily demand is unknown and unmeasured.

The Fence Canyon PWS has the following primary infrastructure:

1. Fence Canyon (2006) well, well house and chlorination system.
2. Fence Canyon back-up well (currently not plumbed into system, however electrical power is in place).
3. One (1) 172,000 Ground Storage Tanks (GST), installed circa 1999 (per IHS).
4. Three (3) booster pumps.
5. One (1) pressure reducing valve (PRV) and one (1) air relief valve (ARV).
6. The distribution system, inclusive of the existing water well (advanced/completed circa 2006) range in age from approximately 12-years to in excess of 19-years old. The distribution system consists of various diameter sizes of polyvinyl chloride (PVC) pipe.

Section II – OPENING DISCUSSION:

The February 26, 2018, opening discussion observations points are documented bellow:

- I observed that the MAT Utility officials recognize the importance of providing safe drinking water, and struggles to achieve a PWS that is sustainable.
- SDWA sampling and disinfection is handled by the DRMP compliance official(s).
- The PWS Utility O&M is the responsibility of the MAT Utility officials.
- MAT needs new staff and new equipment for such tasks as to:
    - Provide adequate PWS O&M.
    - Analyze and add infrastructure including new piping (as appropriate or necessary), control valves and associated appurtenances or ancillary equipment.
    - Implement supervisory control and data acquisition (SCADA) monitoring and mapping, inclusive of memorializing leakage hot spots and initiation of SCADA operational capability.
    - Analyze and install a capital improvement program (CIP).
- MAT needs to addresses significant deficiencies in a timely manner, generally respond to EPA administrative orders (AO), and modify the culture of apathetic public health protection.
- MAT does not implement a work order management system.
- When a water line is replaced, Indian Health Service (IHS) standards, inclusive of disinfection or an equivalent standard operating procedure (SOP) is not followed subjecting costumers to a potential contamination risk.
- The current six (6) PWS operators spend about 80% of their time fixing drinking water leaks or breaks; and about 20% on road and right-of-way (ROW) work. This equates to an approximate 32-hours out of a normal work week to system maintenance.
- I observed that MAT should add additional five (5) or six (6) FTEs (full time employees) capable of operating the MAT PWSs. Such skills needed may include SCADA operations, GIS mapping, electrical, asset maintenance, mechanical, etc.

Section III – FENCE CANYON SANITARY SURVEY

I observed the following sanitary survey characteristics regarding the Fence Canyon PWS:

A. <u>Sources</u>

1. The existing well is cased with 12-inch steel casing and the casing does appear to extend at least 18-inches above land surface (Appendix 1 Photograph #1).
2. The total depth (TD) of the well, static water level (SWL), likewise the screened interval is unknown. However, the reported well yield ranges between 305-350 gallons per minute (GPM) and the well was advanced to completion in 2006. Additionally, the existing 3-phase pump is rated at 40 horsepower. Conversations with IHS personnel assert the existing water well is the current production well and replaced the back-up well (discussed in Item 6 below).

3. The well has no auxiliary power.
4. Fence Canyon PWS has enough ground storage capacity to provide drinking water of sufficient pressure for four (4) days.
5. The well has:
    - Operational records that did not appear to be maintained.
    - No pump failure alarm.
    - A Neptune brass flow meter is installed in the well house (Appendix 1 Photograph #2).
    - No known flow records are maintained or analyzed.
    - Lightning protection.
    - Need to provide routine or preventive maintenance, with respect to all well, disinfection, storage and distribution equipment, inclusive of all associated ancillary appurtenances. This is true and/or consistent for all MAT wells and infrastructure.
6. The back-up well is currently not plumbed into system however electrical power is in place (Appendix 1 Photograph #3 and #4). MAT and IHS personnel are currently evaluating this well as a possible supplemental or back-up source to the existing 2006 water well. Specific characteristics (i.e. TD, screened interval, SWL, yield and completion date) of this well are unknown at this juncture.

B. Pumps and pumping facilities

The pumping facilities consist of:

1. The 2006 drinking water well, well house, booster pumps and chlorination system.

C. Water Treatment (Disinfection)

Fence Canyon PWS treatment observations:

1. Chlorine feed to maintain a ≈ 0.5 ppm residual.
2. Chlorine is applied on the discharge pipe after the meter and pressure gauge.
3. Residual is calibrated on weekdays.

D. Distribution

1. MAT has commenced the creation of geographical information system (GIS) maps of its PWSs assets, inclusive of distribution system pipeline alignments and system infrastructure. These maps are updated as repairs or alignment changes occur (Appendix 2).
2. There are reportedly various PVC pipe sizes within the existing system. These assets are being updated and coincide with the GIS mapping.
3. Installing new water lines and pipeline repair SOPs are not established as mentioned above.
4. Repaired or replaced water mains are not disinfected.
5. O&M does not include a formal flushing program.
6. Water pressure has not been measured or assessed.
7. It is a boosted flow system comprised of one (1) pressure zone, one (1) dead end line, one (1) flush hydrant on the travel side and one (1) flush hydrant on the utility department side. Furthermore, there are six (6) additional flush hydrants along the 2-inch distribution lines.

E. Monitoring

1. Pump Station, GST, and disinfection monitoring occurs by MAT officials on weekdays.
2. Chlorine dose calibration and final dose records (based on pump flow) are not maintained.

F. Management & Operations

1. MAT has a total annual budget of approximately $1.1 million, inclusive of emergency funding.
2. Most of the budget is used for PWS water and wastewater operator wages and distribution system repairs.
3. Staff mainly receives adequate training to obtain a Level 1 operator licenses.
4. Infrastructure improvements are funded and often designed through IHS (via the Sanitation Deficiency System (SDS) process) with EPA grant supplementation.
5. There is no observed source water protection plan.
6. PWS records are kept in accordance with corresponding SDWA federal law.
7. MAT does not implement a preventive maintenance program.
8. MAT has a TCR monitoring plan.
9. MAT has a LCR monitoring plan.
10. MAT does not implement SOPs as a general process.

G. Operator certification

The PWS Utility staff has adequate (Level 1 NMED) certification.

H. Water storage facilities

1. Ground Storage Tanks (GST):

- One (1) Aqua Store bolted glass lined 172,000-gallon steel storage tank was constructed circa 1999 (this was confirmed via telephone conversation with IHS personnel) (Appendix 1 Photograph #5).
- Tank lid has a gasket and is locked (Appendix 1 Photograph #6).
- Internal glass coating condition is good (Appendix 1 Photograph #7).
- External condition of the GST is good.
- It is unknown when the tanks were last cleaned.
- The tank is vented and 24-mesh screen has been installed (Appendix 1 Photograph #8).
- The overflow or drain pipe has an installed flapper valve, however the splash pad has been washed down the arroyo due to excessive erosion and suspected overflow; thus resulting in significant undermining of the embankment leading to a potential drain pipe stabilization issue (Appendix 1 Photograph #9 and #10).
- Manual level indicator in working order.

Section IV – SIGNIFICANT DEFICIENCIES (Reference photos in Appendix 1)

1. The overflow or drain pipe has an installed flapper valve, however the splash pad has been washed down the arroyo due to excessive erosion and suspected overflow; thus resulting in significant

undermining of the embankment leading to a potential drain pipe stabilization issue (Appendix 1 Photograph #9 and #10).

2. The back-up well is currently not plumbed into system however electrical power is in place (Appendix 1 Photograph #3). The 2015 Survey indicates this well should be properly plugged and capped. It was stated during this survey, MAT and IHS are evaluating rehabilitation of this well; thus rendering it as a stand-by well. A well cap was secured and in-place (Appendix 1 Photograph #4).
3. MAT needs additional appropriately trained staff and updated calibrated equipment for adequate O&M.
4. There is insufficient maintenance at the MAT water systems as evidenced by the repeated/unaddressed significant deficiencies from previous sanitary surveys.
5. Significant deficiencies from past sanitary surveys, as shown below in Table B below, need to be fixed, and relevant photos provided to EPA:

TABLE B: Past Survey Significant Deficiencies

ID	Survey Year	Significant Deficiency or Fixed Deficiency Description
1	2015	Insufficient Maintenance. O Well and booster pump pit-less adaptors. _ Gaskets are missing decayed, or not seated.
2	2015	Storage tanks _ Tanks not inspected in last 5 years. _ Missing inspection plates for sight gauge.
3	2015	The abandoned well needs to be properly plugged and abandoned or placed into service.

Section IV – Recommendations

1. Adopt and implement a distribution pipeline repair and/or replacement standard operations procedure (SOP), inclusive of GIS mapping of all related appurtenances in accordance with IHS standards or equivalent.
2. Develop and implement an SOP to issue a boil water notice and a disinfection SOP when the distribution system pressure drops below 20 psi.
3. The DW Utility needs to be capable of providing operations and maintenance (O&M).
4. Combine the DRMP with the utility group under one Water and Wastewater department.
5. Achieve an adequate operating budget to create a sufficient utility department.
6. Create a user fee for drinking water.
7. Conduct public education or announcements regarding the cost of providing safe drinking water, as politically feasible.
8. MAT needs to addresses significant deficiencies in a timely manner; generally, respond to EPA administrative orders (AO), and to modify the culture of apathetic public health protection.
9. MAT needs a work order management system with an asset management component to operate efficiently and at the lowest cost.
10. MAT needs to create a capital improvement program (CIP) to implement PWSs that are sustainable. This would complement items 3, 4, 5, 6, 7, and 8 above.

Section IV – FOLLOW UP

No information was received by EPA after exiting the Facility on 2/27/2018.

Section VI – LIST OF APPENDICES

Appendix 1 – Photo Log – 24 photos taken 2/27/2018
Appendix 2 – Fence Canyon Distribution System GIS Example Map