

NPDES Inspection Report – Water Treatment Plant

National Database Information	
Inspection Date: September 1, 2021	Inspection Type: CEI – Traditional Minor
Entry/Exit Time: 08:00 / 17:45	NPDES ID Number: NDDW0003I
NAICS Code: 22131	Inspection ID: 202109 NDDW0003I
Lead inspector and affiliation: Lisa-kay Prideaux, EPA	
Inspector and affiliation: Emilio Llamozas, EPA	

Facility Location Information (Name/Location/ Mailing Address)	
Site/Facility Name & Location: Twin Buttes Water Treatment Plant 891 Highway 8 North Twin Buttes, ND 58636	Mail Report to: Fort Berthold Rural Water Attention: Pem Hall phall@mhanation.com

Contact Information								
Facility Contacts: <i>(indicate primary lead and present during inspection)</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">Name(s)/Title</th></tr> <tr> <td>Pem Hall, Fort Berthold Rural Water - Director (present)</td></tr> <tr> <td>Joseph Silveria, Fort Berthold Rural Water - Operations Manager (present and primary lead)</td></tr> <tr> <td>Dallas Fox-Osborne, Fort Berthold Rural Water - Executive Assistant (present)</td></tr> <tr> <td>Maynard Demaray, Twin Buttes Water Treatment Plant Operator (present at site visit)</td></tr> <tr> <td>Bryce DeGuise, Indian Health Services, Sr. Field Engineer (present)</td></tr> <tr> <td>Jack Fletcher, Bartlett & West, Employee-Owner (present)</td></tr> </table>	Name(s)/Title	Pem Hall, Fort Berthold Rural Water - Director (present)	Joseph Silveria, Fort Berthold Rural Water - Operations Manager (present and primary lead)	Dallas Fox-Osborne, Fort Berthold Rural Water - Executive Assistant (present)	Maynard Demaray, Twin Buttes Water Treatment Plant Operator (present at site visit)	Bryce DeGuise, Indian Health Services, Sr. Field Engineer (present)	Jack Fletcher, Bartlett & West, Employee-Owner (present)
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Jack Fletcher, Bartlett & West, Employee-Owner (present)								
Person/Company meeting definition of “Operator” per the permit type and relevant citation here	Pem Hall, Fort Berthold Rural Water - Director							
Authorized Official(s) (Per NOI or SWPPP?)	Pem Hall, Fort Berthold Rural Water - Director							

Permit Information	
Is the permit on site and available? Yes	Date NOI Submitted: October 8, 2019
Effective Date: October 17, 2019	Expiration Date: June 30, 2024
Latitude: 47.54221°N	Longitude: -102.21633°W
Receiving Water(s): Unnamed tributary discharging into Lake Sakakawea	
Regulatory Inspector’s source of information: Notice of intent, facility authorization letter, drinking water general permit, ICIS, NetDMR, facility representatives, and facility observations.	

Areas Evaluated During Inspection		
<u>Permit</u>	<u>Effluent/Receiving Waters</u>	<u>Compliance Schedule</u>
<u>Records/Reports</u>	<u>Flow Measurement</u>	<u>Pollution Prevention</u>
<u>Facility Site Review</u>	<u>Self-Monitoring Program</u>	<u>Laboratory</u>
Other(s):		

Report Review and Signature		
Drafter Name	Address/Phone Number	Date
Lisa-kay Prideaux	U.S. EPA Region 8 8MO 10 W 15 th Street Helena, MT 59626	10/07/2021
	406-457-5022	
Reviewer Name	Address/Phone Number	Date
Emilio Llamozas	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	10/12/2021
	303-312-6407	
Supervisor Signature/Name	Address/Phone Number	Date
MICHAEL BOEGLIN Digitally signed by MICHAEL BOEGLIN Date: 2021.10.28 14:36:28 -06'00'	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202	10/28/2021
	Michael Boeglin	

Inspection Narrative and Site Description

The inspection was conducted at the Twin Buttes Water Treatment Plant located on the Fort Berthold Reservation, in Twin Buttes, North Dakota to evaluate compliance with its National Pollutant Discharge Elimination System (NPDES) permit. The EPA issued a NPDES permit to the facility, effective on October 17, 2019. FBRW submitted a modification on September 17, 2021, to adjust from an intermittent discharger to a continuous/frequent discharger. A modified authorization was issued on October 15, 2021. With this modification, the monitoring parameters remained the same; however, the frequency of monitoring for some parameters changed.

The inspection was announced a few weeks prior to the inspection, to coordinate logistics for the inspection. On September 1, 2021, at approximately 8:00 am, U.S. Environmental Protection Agency (EPA) inspectors Lisa-kay Prideaux and Emilio Llamozas met with Pem Hall, Director of Fort Berthold Rural Water, Joseph Silveria, Operations Manager for Fort Berthold Rural Water, Dallas Fox-Osborne, Executive Assistant for Fort Berthold Rural Water, Bryce DeGuise, Senior Field Engineer for Indian Health Services and Jack Fletcher, Employee-Owner for Bartlett & West. The EPA inspectors presented their credentials and had an opening conference to explain the purpose of the inspection. The inspectors proceeded to ask a series of questions to the facility representatives to help them evaluate compliance with the facility's permit. A review of records was conducted as well as an on-site walk-through of the water treatment plant. Throughout the inspection, the inspectors noted their observations in a checklist. Photographs taken during the inspection are included in the attached photo log (photos 50-61).

The Twin Buttes Water Treatment Plant (facility) provides drinking water for the residences and businesses of Twin Buttes and the surrounding rural area through approximately 190 connections. The facility is permitted to produce up to 0.864 million gallons per day (MGD) of potable drinking water and distributes approximately 49 million gallons per year.

The facility has one raw water intake from Lake Sakakawea; a reservoir on the Missouri River. The intake draws water from Lake Sakakawea at an average rate of 300 gallons per minute (gpm) and after going through some intake screens, sends it directly to the treatment plant for processing. As the raw water enters the facility, aluminium chlorohydrate (Aqua Hawks 607) is added. It is mixed with an in-line rapid mixer and then flows into a two-stage clarifier basin; where coagulation and flocculation occur, and larger particles settle out prior to entering an equalization tank. The equalization tank allows for a consistent feed into the filtration system. From the equalization tank, water is split into one of two identical treatment trains. Water flows through a prefilter and a micro-filtration screen. Sodium hypochlorite is then added as water is combined into a contact basin and then into a clear well. The clear well has an overflow pipe; facility staff indicated the drain in which the clear well overflow discharges to is the same drain as the backwash filter drain, and therefore, discharges to the ponds.

In the course of daily operation, the filters are cleaned with a filter backwash operation approximately every 50 minutes. Once every 1-2 months, a more thorough 'clean in place' washing (using citric acid) occurs. Wastewater includes sludge from the coagulation/flocculation tanks, sludge from the filter backwash and sludge from the clean in place washings. Wastewater is pumped to the sludge lagoon ponds located southeast of the facility. The facility has three sludge lagoon ponds that can run in series or in parallel; typical operation is with the ponds in series where the north pond receives wastewater first, moving to the south pond, and then finally to the east pond. There is a junction box in which valved piping and overflow from all ponds enters to adjust the operational flow of the ponds. Wastewater being

discharged enters a different junction box prior to entering the discharge pipe. Sample collection could occur at the junction box or at the outfall pipe; however, there is not an effluent flow measuring device. Discharge out of the lagoon ponds is through Outfall 001 into an unnamed tributary to Lake Sakakawea through Medicine Stone Bay. The facility is permitted as a continuous or frequent discharger with an average discharge of 0.096 MGD.

Inspectors requested to review records which included a copy of the permit, facility operating records (operations and maintenance manuals, standard operating procedures, equipment maintenance records, Material Safety Data Sheets (MSDS) (for on-site chemicals) and permit required compliance schedules reports (24-hour noncompliance records, weekly inspections, and operations and maintenance program required records). The facility stated they have not discharged at this facility; therefore, monitoring records were not reviewed other than a discussion of late DMR submittals.

After the facility representative interviews, the inspectors inspected the facility where Maynard Demaray, facility operator joined the inspectors. The inspectors commenced the facility review at the Water Treatment Plant, where they observed the water intake pipes, injection of aluminium chlorohydrate and the in-line rapid mixers, coagulation and flocculation tanks (photo 50), filtration units (photo 52), and clear well. Inspectors also observed the piping and troughs for the transfer of wastewater from the flocculation basins (photo 51), the filter backwash (photo 53), clean in place washes, and clear well overflow pipe (photo 54). Facility staff indicated the drain in which the clear well overflow discharges to is the same drain as the backwash filter drain, and therefore, discharges to the ponds. The inspectors also observed the sludge lagoon ponds (photos 55, 56 & 58), operational flow junction box (photo 57), discharge junction box, to include a potential effluent sampling location, (photo 61), and Outfall 001 discharge pipe (photos 59 & 60). The inspectors followed the discharge flow path to property limits. At the time of the inspection, inspectors noted the sludge lagoon ponds had weeds on the inside of the dike walls, cattails were beginning to grow within the ponds, and tumble weeds were in the bottom of the ponds. During the inspection, the operational flow junction box was full of water. The operational junction box is a junction for flow from the North and/or South ponds to move to either the East pond or to the discharge junction box; all pipes have valves to open/close. Facility personnel opened the valve to release the water to the discharge junction box long enough to drop the water level in the operational junction box; the valve was then closed again to push water to the East pond. While the water level was low, inspectors were able to note water from the overflow pipes of the North and South ponds were flowing (photo 57). The discharge junction box includes a pipe from the operational junction box, and from the East pond, as well as a pipe leading out to Outfall 001. It was also noted the valve in the discharge junction box to the outfall was open; and therefore, the facility was discharging. Facility personnel were not aware of the discharge until the inspection was performed and closed the valve in the discharge junction box to stop discharging. Due to the quantity of algae at the discharge location (photos 59 & 60), it appeared the discharge had been occurring for quite some time. Facility personnel stated they would hold water as long as possible until proper sampling equipment was in place to complete a sampling event during a discharge from the facility.

Since three facilities under Fort Berthold Rural Water (FBRW) were being inspected within two days, all agreed to hold the closing conference until all facilities had been inspected. The inspection of the Twin Buttes Water Treatment Plant concluded on September 1, 2021, at approximately 5:45 pm. On September 2, 2021, a closing conference with Joseph Silveria and Dallas Fox-Osborne was held and preliminary findings were discussed. On September 14, 2021, the EPA sent an email to Mr. Hall, Mr. Silveria, Ms. Fox-Osborne, Edmund Baker, Environmental Director of MHA Nation Environmental Department, Lisa

Lone Fight, Science Advisor of MHA Nation Science Department, and Morgan Berquist, Science Tech 2 for MHA Nation Science Department, with the preliminary findings from the inspection.

Findings, Corrective Actions and Recommendations

Finding #1:

FBRW did not have an operations and maintenance program in place, or an operations and maintenance manual for the Twin Buttes Water Treatment Plant. Specifically, FBRW did not have an operations and maintenance manual, a schedule for equipment and facility operations and maintenance, a routine for conducting operations and maintenance activities, or records to document any operations and maintenance schedules or activities. FBRW provided the EPA with a draft operation and maintenance manual it was planning to use in the future for this facility. The EPA performed a cursory review of the document and indicated the inspection frequency of the ponds should be changed from monthly to weekly pursuant to the weekly inspection permit requirements. FBRW was planning to update the draft operation and maintenance manual and then submit it to the EPA.

Permit requirement:

- Part 5.1 of the Drinking Water General Permit (DWGP) requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0003L.
- Part 5.6.1 of the DWGP states the facility must have an operations and maintenance program as soon as practicable, but no later than 6 months after the effective date of the permit. FBRW received authorization under the DWGP on October 17, 2019.
 - Part 5.6.1.1 of the DWGP states the facility must have a current operations and maintenance manual that describes the proper operational procedures and maintenance requirements of the wastewater treatment system.
 - Part 5.6.1.3 of the DWGP states the facility must have a schedule for routine operations and maintenance activities at the facility. Part 5.6.1.4 of the DWGP states the facility operator(s) must perform the routine operation and maintenance requirements in accordance with the schedule.
- Part 5.6.2 of the DWGP states facility operator(s) must maintain a log (paper or electronic) containing a summary record of all operations and maintenance activities at the facility. The log

must contain the following information (stated in Parts 5.6.2.1-5.6.2.5): date, time, name and title of person making the log entry, name of person performing the activity, brief description of the activity, and any other appropriate information pertaining to the activity. Part 5.6.2.3 states the log must be maintained in accordance with proper record-keeping procedures.

Corrective Action:

Develop an operation and maintenance program including a manual that describes the proper operational procedures and maintenance requirements of the treatment facility. Provide a copy of the operation and maintenance manual. In the response to this report, provide the EPA, the MHA Nation Environmental Department (MHA Nation) and the Indian Health Service (IHS) with a description of the corrective actions taken to address this finding.

Finding #2:

FBRW has not conducted weekly inspections of the sludge lagoon ponds. Specifically, FBRW did not conduct weekly inspections from October 17, 2019 (date of the permit coverage) to September 1, 2021 (date of the EPA inspection). As consequence of not conducting the weekly inspections, FBRW's operators were unaware the facility had been discharging for quite some time (photos 59 & 60, see Finding #5).

Permit requirement:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0003L.
- Part 5.5.1 of the DWGP states the facility must inspect the treatment systems on at least a weekly basis to include, at a minimum, the following (Parts 5.5.1.1-5.5.1.7): state of discharge, leakage through dikes, animal burrows within the dike, excessive erosion of dike walls, removal of rooted plants (including weeds) in water, vegetation growth on dikes needing mowing, and if proper operations and maintenance procedures are being completed as required by the facility program.
- Part 5.5.2 of the DWGP states facility operator(s) must maintain a log (paper or electronic) containing the information obtained during the inspection. The log must contain the following information (stated in Parts 5.5.2.1-5.5.2.8): date and time, name of the inspector, facility discharge status, flow rate of the discharge if occurring, identification of operational problems and/or maintenance problems, recommendation to remedy identified problems, description of actions taken with identified problem, and any other appropriate information pertaining to the identified problem. Part 5.5.2.9 states the inspections must be maintained in accordance with proper record-keeping procedures.

Corrective Action:

Conduct weekly inspections of the facility and maintain the inspection reports. In the response to this report, provide the EPA, MHA Nation and IHS with a description of the corrective actions taken to address this finding as well as a copy of inspection report(s) for at least one week prior to your response.

Finding #3:

FBRW was late submitting 17 Discharge Monitoring Reports (DMR) for the Twin Buttes Water Treatment Plant since October 17, 2019. Specifically, for the following monitoring periods, FBRW submitted the DMRs past the required submittal deadline.

DMR Monitoring period & location	DMR due date	DMR Submitted	Days late
October 31, 2019 (DWID-M)	January 28, 2020	June 9, 2020	133 days
November 30, 2019 (DWID-M)	January 28, 2020	June 9, 2020	133 days
December 31, 2019 (DWID-M)	January 28, 2020	June 9, 2020	133 days
January 31, 2020 (DWID-M)	April 28, 2020	June 9, 2020	42 days
February 29, 2020 (DWID-M)	April 28, 2020	June 9, 2020	42 days
March 31, 2020 (DWID-M)	April 28, 2020	June 9, 2020	42 days
April 30, 2020 (DWID-M)	July 28, 2020	August 31, 2020	34 days
May 31, 2020 (DWID-M)	July 28, 2020	August 31, 2020	34 days
June 30, 2020 (DWID-M)	July 28, 2020	August 31, 2020	34 days
June 30, 2020 (DWID-A)	July 28, 2020	August 31, 2020	34 days
July 31, 2020 (DWID-M)	October 28, 2020	April 15, 2021	169 days
August 31, 2020 (DWID-M)	October 28, 2020	December 9, 2020	42 days
September 30, 2020 (DWID-M)	October 28, 2020	December 9, 2020	42 days
December 31, 2020 (DWID-M)	January 28, 2021	April 15, 2021	77 days
May 31, 2021 (DWID-M)	July 28, 2021	September 1, 2021	35 days
June 30, 2021 (DWID-M)	July 28, 2021	September 1, 2021	35 days
June 30, 2021 (DWID-A)	July 28, 2021	September 1, 2021	35 days

Permit requirements:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0003I.
- Part 4.4 of the DWGP requires the electronic submittal of DMRs quarterly using NetDMR, and the submissions must be made no later than the 28th of the month following the completed reporting period.
- 40 C.F.R. §123.45(a)(2)(i) states, a violation must be classified as “Category I Noncompliance” if certain criteria are met. Applicable criteria include reporting violations; these include failure to submit a complete, required report (e.g., discharge monitoring report) within 30 days after the date required.

Corrective Action:

Submit DMRs by the date required within the permit. In the response to this report, provide the EPA, MHA Nation and IHS with a description of the corrective actions taken to address this finding.

Finding #4:

The Twin Buttes Water Treatment Ponds are not being operated and maintained as required. Specifically, the treatment ponds had weeds on the inside of the dike walls, cattails were beginning to grow within the treatment ponds, and tumble weeds were in the bottom of the treatment ponds, all eliminating capacity for treatment (photos 55, 56 & 58).

Permit requirements:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0003I.
- Part 5.6 states the facility must properly operate and maintain all facilities and systems of treatment and control at all times.

Corrective Action:

Properly operate and conduct maintenance on all system facilities to ensure proper operating performance. In the response to this report, provide the EPA, MHA Nation and IHS with photos and a description of the corrective actions taken to address this finding.

Finding #5:

FBRW is not collecting samples during wastewater discharges at the Twin Buttes Water Treatment Plant. Specifically, the facility was discharging at the time of the facility inspection (photos 59 & 60). FBRW was unaware of the discharge and therefore was not collecting samples daily. Due to the quantity of algae at the discharge location (photos 59 & 60), it appeared the discharge had been occurring for quite some time. During the inspection, the facility closed the discharge valve to stop the discharge. Since FBRW was unaware of the discharge and was not collecting samples, they therefore had been reporting 'no discharge' on monthly DMRs during the timeframe the facility was discharging.

Permit requirements:

- Part 5.1 of the DWGP requires FBRW to comply with all conditions of the DWGP and Authorization NDDW0003I.
- Part 3 of the DWGP requires FBRW to monitor at the frequency and with the type of measurement indicated in the DWGP and Authorization NDDW0003I. Part 3 also requires all samples to be representative of the volume and nature of the monitored discharge.
- Part 4 of the DWGP states samples taken must be collected from the effluent stream prior to discharge into the receiving waters.
- Part 4.4 of the DWGP requires FBRW to submit results on DMRs.

Corrective Action:

Collect a representative sample during a facility discharge at the frequency provided in the DWGP and Authorization NDDW0003I. Ensure the discharge status reported on the DMRs is accurate. In the response to this report, provide the EPA, MHA Nation and IHS with a description of the corrective actions taken to address this finding.