

CORRECTIVE ACTION PLAN

AFIN: 22-00037 NPDES Permit No. AR0021822

Monticello WWTP- West

Monticello AR 71655

August 30, 2019

McClelland Consulting Engineers (MCE) conducted a walk-through of the city of Monticello Wastewater Treatment Plant (WWTP)- West alongside personnel of the city of Monticello on July 24, 2019. The Monticello WWTP- West is a lagoon system comprising four cells with a design capacity of 1.0 MGD, and operates as a stabilization lagoon. However, the fourth cell is a hydrograph control release (HCR) pond and primarily serves as a holding pond. The HCR system components include an HCR, effluent discharge component, and the receiving stream flow monitoring.

The lagoon system has a preliminary treatment unit where the wastewater enters first by gravity. The preliminary unit is followed by a Parshall flume that measures the volumetric flow rate of the wastewater through the treatment cells. After the Parshall flume, the wastewater enters the first cell and then flows by gravity through the rest of the cells. Cell number 3 used to be an HCR pond but still apparently serves as HCR. The gate valve of cell number 3 was tightly closed and was not transmitting any wastewater to the rectangular weir at the time of the site visit.

The HCR pond, the fourth cell, has a gate valve that is controlled by an electric actuator and it connects to the effluent rectangular weir through a 36-inch diameter ductile iron pipe (DIP). The HCR pond discharges to the effluent rectangular weir prior final discharge to Ten-mile creek. In the rectangular weir, there seems to be a six-inch pipe with a valve underneath the weir. This underneath valve was open at the time of the visit and treated effluent was being discharged to an Unnamed Tributary (UT) through this pipe. There is a reference measurement ruler at a corner of the rectangular weir.

An ultrasonic sensor is located at the confluence of the UT and Ten-mile stream. The ultrasonic sensor reads the gauge at the confluence and is supposedly tied to the discharge gate of the HCR

pond. The ultrasonic sensor dictates the opening size of the gate based on the water level in the receiving stream.

A review of the discharge monitoring reports (DMRs) from January 2016 to June 2019 was performed against the consent administrative order, CAO LIS Numbers 16-0064 and 16-0064-001. It seems most of the parameters cited in these Orders have considerably been met. Of recent (2018 to present), only discharge flow as percent of stream flow, five-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) were the parameters of excursions. There were five (5) excursions for discharge flow as percent of stream flow, one violation for monthly average BOD₅ and a violation for TSS. The reported monthly average BOD₅ was 30.85 mg/L and the permit limit was 30.0 mg/L. The difference is within the limits of laboratory analytical errors suggesting that excursion might not have actually occurred. Data seem to indicate that the reporting of percent HCR discharge flow based on instream flow is inconsistent with the way the monitoring equipment was setup.

At present, the City is in the process of purchasing portable generators along with the installation of necessary electrical switch gears at the lift stations to connect to the generators during electrical power failures.

Based on the preceding, the following milestones that will assist in ushering the facility into compliance was developed.

Milestone	Date
1. Reconciliation of HCR discharge and streamflow measuring equipment, and ADEQ modeling <ul style="list-style-type: none">• Possible coordination with ADEQ	Sep 9, 2019 to Mar 30, 2020
2. Smoke testing	Oct 1 to Dec 20, 2019
3. Manhole inspections	Jan 6 to February 2020
4. Other elements of Sanitary Sewer Survey and Evaluation Study (SSSES), i.e., CCTV, flooding test, etc.	Apr 1 to October 2020
5. Development of sanitary sewer rehabilitation plan	Nov 2 to December 2020
6. Emergency power supply to lift stations <ul style="list-style-type: none">• 18 "quick connects"	Oct 1, 2020 to Oct 2021

- 3 Portable Generators

Sep 3, 2019 to Oct 2021

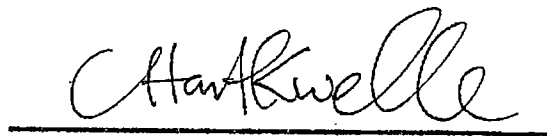
Final Compliance Deadline and Final Report

December 22, 2021

Quarterly report will be provided and would commence beginning the fourth quarter of 2019.

A handwritten signature in cursive script that reads "Paige Chase". The signature is written in black ink and is positioned above a solid horizontal line.

Paige Chase
Mayor, City of Monticello

A handwritten signature in cursive script that reads "Hank Kelle". The signature is written in black ink and is positioned above a solid horizontal line.

McClelland Consulting Engineers, Inc.

CORRECTIVE ACTION PLAN

AFIN: 22-00379 NPDES Permit No. AR0021831

Monticello WWTP- East

Monticello AR 71655

August 30, 2019

McClelland Consulting Engineers (MCE) conducted a walk-through of the city of Monticello Wastewater Treatment Plant (WWTP)- East alongside personnel of the city of Monticello on July 24, 2019. The Monticello WWTP- East is a lagoon system comprising four cells, and operates as an aeration-stabilization system. However, the fourth cell is a hydrograph control release (HCR) pond and primarily serves as a holding pond. The HCR system components include an HCR cell, effluent discharge component, and the receiving stream flow monitoring.

The lagoon has a preliminary treatment unit where the wastewater enters first by gravity. The preliminary unit is followed by a Parshall flume that measures the volumetric flow rate of the wastewater through the treatment cells. After the Parshall flume, the wastewater enters the first cell and then flows by gravity to second cell or cell number 2. Both cells 1 and 2 are aerated by mechanical surface aeration, and can be operated in parallel when the need arises. At present, the lagoon cells are serially operated. Cell 2 is partitioned with a baffle that seemingly creates "cell 2B". There are two screw pumps that lift wastewater from "cell 2B" to cell 3 and flows by gravity to the HCR pond, where the treated wastewater is discharged to the receiving stream through a 48-inch diameter pipe. The screw pumps alternate wastewater transfers to cell 3.

The effluent discharge is based on a certain level of water in the receiving stream. There is a secondary measuring device (ultrasonic meter) that is located upstream of the discharge location. The ultrasonic meter measures the water level in the stream, and the measured water level is then converted to instantaneous stream flowrate.

A review of the discharge monitoring reports (DMRs) from January 2016 to June 2019 was performed against the consent administrative order (CAO), LIS Number 18-066. It seems most of the parameters cited in the order has somewhat been met. Of recent (2018 to present) only discharge flow as percent of stream flow and fecal coliform exceeded the permit limits. Violation

of discharge as percent of stream flow occurred three times, and consistently exceeded by 0.128 percent based on the permit limit of 78 percent. The difference is attributable to rounding errors. The discharge permit limit is given in two significant digits, and therefore, the reported value should have been reported in two digits rather than three digits. The precision of the reported values must not be greater than the prescribed permit limits. In other words, there seems to be no violations of discharge as percent of stream flow during the period cited herein. The fecal coliform violation was only once from 2018 to present and was approximately 9.7 percent exceedance of the permit limit.

A lagoon pond survey conducted by the City's prior consultant contained in a letter dated April 17, 2019 to ADEQ shows that several cells of the lagoon system seem to have sludge buildup. As a consequence, the lagoon cells have short detention times. Although the sludge accumulation might have contributed to the reduction in the detention times, the values given in the letter seem to be not entirely accurate. It appears the detention times given in the lagoon survey might had been grossly underestimated.

At present, the City is in the process of purchasing portable generators along with the installation of necessary electrical switch gears at the lift stations to connect to the generators during electrical power failures.

Based on the preceding, the following milestones that will assist in ushering the facility into compliance have been drawn.

Milestone	Date
1. Verification of adequacy of streamflow monitoring system with respect to HCR effluent discharge	Sep 9 to Dec 20, 2019
2. Desludging of wastewater treatment pond <ul style="list-style-type: none"> • Determination of sludge depths • Estimation of the quantity of sludge to be removed • Onsite sludge dewatering and landfill/ land application 	Jan 6 to Sep 2020
3. Minimization of short circuiting in the lagoon system <ul style="list-style-type: none"> • Inlet and outlet conditions • Enhancement of mixing/aeration • Baffling 	Mar 2 to Dec 2020
4. Emergency power supply to lift stations <ul style="list-style-type: none"> • Four "quick connects" 	Mar 2 to Dec 2020

- One portable generator

Mar 2 to Dec 2020

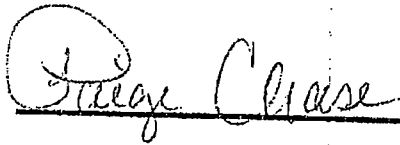
5. Performance assessments of the instituted changes

Jan 4, 2021 to Mar 31, 2021

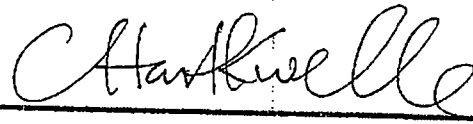
Final Compliance Deadline and Final Report

Sep 30, 2021

Quarterly report will be provided and would commence beginning the fourth quarter of 2019.



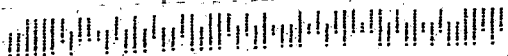
Paige Chase
Mayor, City of Monticello



McClelland Consulting Engineers, Inc.

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