

INTERIM REPORT
Alma, Arkansas Wastewater Treatment Facility
Corrective Action Plan

NPDES Permit No. AR0021466
AFIN 17-00059

November 2019

Prepared for:

City of Alma, Arkansas

Prepared by:

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Introduction

The Alma, Arkansas wastewater treatment facility located at 2500 Orrick Road southeast of the City of Alma is permitted under the NPDES permit system as Permit Number AR0021466, AFIN 17-00059. The system treats municipal wastewater from the City of Alma, Arkansas and from the Town of Dyer, Arkansas.

The treatment system consists of a mechanical screen (comminutor) and Parshall flume in the headworks. Lagoon one is 1 (one) completely mixed cell followed by two partially mixed cells. Lagoon two is 2 (two) facultative cells, used as partial-mix cells with supplemental aeration as needed. Lagoon three is a facultative lagoon. Lagoon 4 is used as a holding lagoon for equalization as needed.

The facility is permitted for the following parameters and limits:

Effluent Characteristics	Discharge Limitations		
	Mass, lb./day	Concentration, mg/L or as noted	
		Monthly Avg.	7-Day Avg.
Flow	N/A	Report, MGD	Report, MGD
Overflows	Monthly Total SSOs (occurrences/month)		
Overflow Volume	Monthly Total Volume of SSOs (gallons/month)		
Biochemical Oxygen Demand (BOD ₅)	437.9	30.0	45.0
Total Suspended Solids (TSS)	437.9	30.0	45.0
Dissolved Oxygen (D.O.)	N/A	2.0 (Inst. Min.)	
Fecal Coliform Bacteria (FCB)	Colonies/100 mL		
May - September	N/A	200	400
October - April	N/A	1000	2000
Total Residual Chlorine (TRC)	N/A	0.4 (Inst. Max.)	
Total Recoverable Arsenic	N/A	Report	Report
Total Phosphorus (TP)	N/A	Report	Report
Nitrate + Nitrite Nitrogen (NO ₃ + NO ₂ - N)	N/A	Report	Report
pH	N/A	<u>Minimum</u> 6.0 s.u.	<u>Maximum</u> 9.0 s.u.
Acute WET Testing			
Pimephales promelas (Acute) Pass/Fail Lethality (48-Hr NOEC) TEM6C Survival (48-Hr NOEC) Coeff. Of Variation Pass/Fail Retest 1 Pass/Fail Retest 2		Report (Pass/Fail) Report % Report % Report Pass/Fail	

Pass/Fail Retest 3		Report Pass/Fail Report Pass/Fail		
Daphnia pulex (Acute) Pass/Fail Lethality (48-Hr NOEC) TEM3D Survival (48-Hr NOEC) Coeff. Of Variation Pass/Fail Retest 1 Pass/Fail Retest 2 Pass/Fail Retest 3		Report (Pass/Fail) Report % Report % Report Pass/Fail Report Pass/Fail Report Pass/Fail		

The City entered a Consent Administrative Order in January 2018 as a result of BOD₅ and TSS permit exceedances. The CAO was amended in January of 2019.

The Corrective Action Plan (CAP) for the City of Alma was developed in 2017. The corrective actions have been implemented within the schedule proposed and amended in March 2018 and November 2018.

This interim report is an update since the August 2019 interim report.

The treatment system continues to meet permit limits for BOD₅ and TSS since the first corrective actions were implemented by increasing aeration in 2017 and 2018.

Corrective Actions Implemented May Through August 2019

1. Delivery and deployment of Hexprotect floating cover tiles is complete over Lagoon 2.
2. The baffle curtains and floating baffles were delivered and installed during the period from October 10 through October 15, 2019. When the curtains were released, a slight short-term increase in Total Suspended Solids was observed, however the treatment system effluent remains within permit limits. The increase was expected as flow patterns through the lagoon changed. Since the increase over approximately one week, the TSS has declined, and continues to be below 10 mg/L in the effluent. The baffles and booms are shown in Photo 1.
3. The Hexprotect tiles are deployed over lagoon 3 as they are manufactured and delivered. As of November 25, 2019, approximately thirteen additional semi-truck loads are scheduled for delivery to complete the cover installation.

Effect of Corrective Actions

The treatment system has met permit limits following aeration equipment repairs and implementation, and without the addition of alum and Earthtec®. The Discharge Monitoring Reports (DMRs) indicate that the treatment facility has met the NPDES permit limits during the period from August through October 2019.

Schedule

Currently, the project completion date is expected to be as soon after December 31, 2019 as possible. Delivery of the Hexprotect tiles is the delay. As the tiles are delivered, they are installed, and the installation will continue depending upon the delivery and end-of-the year holidays.



Photo 1
Hexprotect Floating Cover Tiles



Photo 2
Tiles Contained in Lagoon 2



Photo 3
Installing the Assembled Baffles and Booms



Photo 4
Baffles and Booms in Place



Photo 5 Installing Hexprotect Tiles in Lagoon 3



Photo 6
Installing Hexprotect Tiles



Photo 7 Installing Hexprotect Tiles