CITY OF Siloam Springs
It's a natural

September 14, 2016

Water Division Enforcement Analysis Branch
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Attn: Alan Anderson, Enforcement Analyst

RE: Siloam Springs Wastewater Treatment Facility
AFIN: 04-00106 Permit No.: AR0020273

Dear Mr. Anderson:

Please allow this letter to serve as a response to the centrifugal blower failure at the above referenced facility from April 18 through June 15, 2016.

SUMMARY OF EVENTS ASSOCIATED TO EXCURSIONS AT PLANT

On April 19, 2016 problems started to develop with all four centrifugal blowers. These blowers supply needed oxygen to the Biological Nutrient Removal (BNR) process. A phone call was made to you regarding the concerns and letting ADEQ know we are conducting maintenance on the blowers since they are key to the biological process. An email was sent as a follow-up to our conversation.

The manufacturer was contacted to assist in troubleshooting and ensuring the operation of one or more units. A manufacturer's service crew arrived at the plant on April 25, 2016 to conduct testing and repair work. The blowers were designed to draw foul air from the preliminary and primary treatment processes (i.e. – headworks and primary clarifiers). It was determined by the service crew that the coating on internal components were flaking-off and causing problems with the operation of the blower. This coating material was added to protect the internal components from hydrogen sulfide gas. The blowers continued to fail causing oxygen depletion in the BNR process.

City staff immediately sent a blower off to have it rebuilt. For oxygen supplement, positive displacement (PD) blowers used for the aerobic digestion process where used to supply some oxygen to the BNR. The output of the PD blowers is adequate for the aerobic digestion process but could not meet the demands of the BNR process.

City staff worked with the design engineers to determine steps needed to expedite blower repair work. Two 6 X 6 inch portable pumps were placed on top of the BNR to help with surface aeration. Contacted Blue in Green to rent a portable air system but there was not a unit available.

A conference call was made with ADEQ and City of Siloam Springs staff to talk about the problem and possible solutions to provide more air to the BNR. The City purchased several totes of hydrogen peroxide to feed as an oxidizer to help with the oxygen depletion until the system could be re-established.

Responded to questions asked by ADEQ officials. Sent responses to Richard Healey, Jason Bolenbaugh, Bob Blanz, Caleb Osborne, Miles Johnson and Alan Anderson on June 6, 2016 via email.

Took daily photos of the chlorine contact chamber and the plant discharge along with upstream and downstream photos of Sager Creek as requested by ADEQ. Sent photos to Alan Anderson and Jason Bolenbaugh as directed.

Monitored the stream for dissolved oxygen ¼-mile west in Oklahoma throughout the oxygen depletion ordeal. Notified Oklahoma ODEQ and their representative Mr. Von Hinmer.

Continually stayed in contact with ADEQ and ODEQ regarding the problem.

Whole Effluent Toxicity testing was conducted in early June and passed both lethal and sub-lethal for both methods during the low dissolved oxygen period.

The repaired centrifugal blower was installed on June 15, 2016 and the plant immediately began to recover. The plant is currently operating on one BNR train as a result of the loading. Consequently, only one blower is currently needed. A new blower was approved by the City Board of Directors. This will provide redundancy for the single BNR train in service. The blower has been ordered and is tentatively scheduled for delivery in December, 2016.

Since the installation of the repaired blower, staff has changed the supply air to the blower from the preliminary and primary treatment process air

to ambient air. This should eliminate the potential for corrosive air to be introduced to the blower.

The City Maintenance Division staff have dismantled two non-functioning blowers and will be able to create one good blower from it. The second blower that had parts taken from it will receive new impellers and will be rebuilt. This will allow for all four blowers to be installed and ready for service.

Excursions occurred on the following dates:

4/30/16 - Ammonia Nitrogen Monthly average, Monthly pounds, and 7-day max.
5/31/16 - Ammonia Nitrogen Monthly average, Monthly pounds, and 7-day max.
5/31/16 - Carbonaceous 5day BOD (20°C) Monthly average, Monthly pounds, and 7-day max.
5/31/16 - Solids, total suspended Monthly average, Monthly pounds, and 7-day max.
6/30/16 - Ammonia Nitrogen Monthly average, Monthly pounds, and 7-day max.
6/30/16 - Carbonaceous 5day BOD (20°C) Monthly average, Monthly pounds, and 7-day max.

The City of Siloam Springs takes our compliance with ADEQ and our NPDES permit seriously. We have taken the necessary steps to provide repairs to the process equipment and its future operation.

Sincerely,

Thomas A. Myers, Wastewater Superintendent
(479) 524-5623
tmyers@siloamsprings.com

Cc: Steve Gorszczyk, Public Works Director
Renea Ellis, City Clerk
Alan Anderson (via email)