



P.O. Box 2787 • 100 Water St • Lewisburg, Tennessee 37091

December 2, 2022

Jessica Murphy, Manager  
Compliance and Enforcement Unit  
Department of Environment and Conservation  
Division of Water Resources  
312 Rosa L. Parks Avenue, 11<sup>th</sup> Floor  
Nashville, TN 27243-1102

Subject: NOTICE OF VIOLATION  
Written Explanation for violations  
LEWISBURG WATER & SEWER DEPT – CORNERSVILLE STP  
NPDES PERMIT TN0061841  
MARSHALL COUNTY, TENNESSEE

Dear Ms. Murphy,

**Treatment Overview:**

Cornersville Wastewater Treatment facility is a challenging treatment process to operate. This plant is an SBR (Sequential Batch Reactor), the influent water is mostly overflow from septic tanks (STEP) and this influent is high in ammonia, approximately 40 mg/l and low in BOD, approximately 80 mg/l. This 2:1 (BOD: NH<sub>3</sub>) ratio is far lower than the normal domestic sewage ration which is often 10:1 (BOD: NH<sub>3</sub>) ratio. The OIC is a Grade IV operator with two Grade IV backup operators. A combined operating experience of over 85 years!

The operation of the Cornersville treatment plant has been very effective in the reduction of violations. Since Lewisburg Water and Wastewater acquired this facility numerous improvements have been made.

**Precise cause of the violations:**

On Monday July 4<sup>th</sup> the treatment process in tank two (2) of the SBR was lost. Solids in the tank were not settling. This created solids violations. Tank one (1) continued to operate in compliance with the permit. There is no precise cause for tank two treatment not operating within the permit. There are some theories, excessively hot temperatures, very low influent flow, low solids content, schools preparing for startup. Tank two (2) remained in operation as operators tried to regain treatment.

**Corrective actions taken:**

Biosolids from tank one was added to tank two (2) to reseed the treatment process. Dog food was added to help feed the microorganisms. These were unsuccessful and tank two (2) was completely drained and cleaned. This tank was refilled and seeded with influent from the Lewisburg wastewater

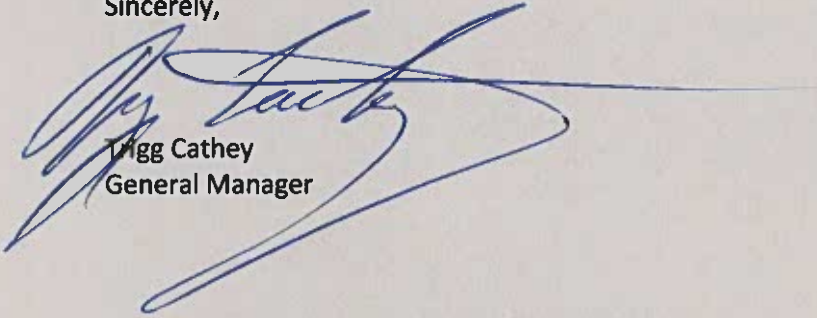
treatment plant and mixed liquor from tank one (1) in Cornersville. Tank two (2) was allowed to operate for about four (4) weeks without discharge. When the tank was put back online the solids in the tank were not settling and created the one August violation. The treatment train began operating correctly and was put back into service in early September. We did reach out to operators of other SBR facilities, and they reported similar operating symptoms. MTAS was contacted for technical assistance as well.

October Ammonia violation: In April of 2021 the department purchased a Hach software program (WIMS) for data collection. The violation referenced in this NOTICE OF VIOLATION is the only ammonia violation since the inception of this software. (See graph) On Tuesday October 18 there was foam developing on tank one (1). (See photo) This foam was grainy and did not have a feel oil or grease. There is no known reason for this foam, it was only in tank one and was out of the tank by the next week. The foam substance was the culprit of this ammonia violation. We are asking the state to please remove the Ammonia violation from this notice of violation as it is the only Ammonia violation in many months.

**Avoid future violations:**

During times of low flow and excessive heat MCRT, FM Ratio, Sludge Age testing, and microorganism identification are increased. Operators try to maintain the solids blanket in the SBR tanks of 3.5 feet.

Sincerely,



Trigg Cathey  
General Manager

1710-Cornersville/Effluent Ammonia N  
4/1/2021 - 11/23/2022

