

## Johnson, Miles

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**From:** Miller, Mayo/Fay <Mayo.Miller@ch2m.com>  
**Sent:** Tuesday, January 16, 2018 2:38 PM  
**To:** Johnson, Miles  
**Cc:** Luther, Tim/FAY; Vinson, Thom/FAY; Jay Lee (jaylee@berryville.com)  
**Subject:** Process Update - Berryville WWTP - Permit Number AR0021792 - AFIN 08-00034

Mr. Miles Johnson,

Per our phone conversation on Monday, January 8, 2018, the following is an update on the nitrification process at the City of Berryville Wastewater Treatment Plant, permit number AR0021792, AFIN 08-00034.

The permit compliance sampling and analysis for the week of January 7<sup>th</sup> – January 13<sup>th</sup> is complete. The ammonia nitrogen sample result was 15.0 mg/l, and the permit limit for 7-day average is a 6.0 mg/l. Although not yet certain, it is probable that this week's ammonia test results will also be greater than 6.0 mg/l. If the result is high this week, then the monthly average permit limit of 4.0 mg/l will probably be exceeded as well.

It appears that the consistent subfreezing temperatures have negatively impacted the biological system's ability to properly nitrify. At times, the water temperature in the biological treatment units has been below 5 degrees Celsius.

Many steps have been taken to help improve the nitrification process to increase water temperatures, increase treatment detention time, and increase the biological nitrifying population. The open influent channel and splitter box have both been covered to reduce temperature loss in the water. The 1.9-million-gallon backup biological treatment unit was placed online effectively doubling the amount of time allowed for the process to treat ammonia nitrogen. As mentioned in our phone conversation, seed sludge has also been transported from other facilities. In fact, 25 loads totaling approximately 81,000 gallons of seed sludge has been transported to expedite the recovery of the nitrification process. Furthermore, seed sludge will continue to be transported throughout this week.

At this time, no adverse environmental impact has been observed. When water temperatures increase, the biological nitrification process should recover and resume proper ammonia nitrogen treatment.

Please let me know if you have any questions or instructions and we will continue to keep the department apprised of any changes at the facility.

Thank you for your time,

**Mayo Miller**  
*Project Manager*  
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