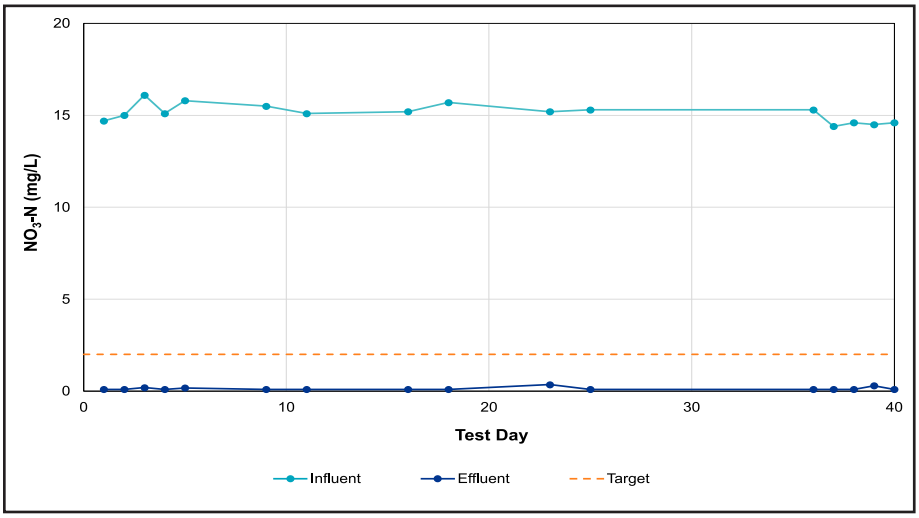
GROUNDWATER NITRATE REMOVAL FOR MUNICIPAL DRINKING WATER APPLICATION

Overview

A Rural Water District (RWD), located in central Oklahoma, experiences nitrate-N levels exceeding the EPA limit of 10 mg/L. In 2010, the RWD completed an ion-exchange pilot for nitrate removal. To accommodate the generated brine waste, it was estimated that up to one and a half acres would be required to construct a two-cell synthetic lined lagoon, rendering the project impractical.

To provide a viable treatment solution, WesTech piloted a novel electro-biological process in 2021, which avoided problematic brine generation. The system destroyed nitrate instead of concentrating it, releasing harmless nitrogen gas in the process.

RESULTS



Project Summary

Groundwater Denitrification Pilot Demonstration

Location:
Oklahoma, USA

Application:
Groundwater Denitrification

Process:
Electro-Biochemical Reactor

Highlights

- **Advanced electro-biological treatment**
- **Shorter retention times and smaller bioreactors**
- **Significantly lowered chemical dosage**
- **No concentrated brine waste production**
- **97% water recovery**
- **Minimal biosolids generation**
- **<0.3 mg/L average effluent nitrate-N**

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