

Nebraska Department of Environment and Energy (NDEE)

MEMORANDUM

To: File

From: Hillary Stoll

Date: May 5, 2021

RE: AltEn, LLC

NDEE ID: 84069

Program ID: WWF, PCS NE0137634

Subject: Site Visit Report (Wastewater Treatment System Only)

Summary of Site Visit and Information Acquired During Visit:

Jason Windhorst, Tom Buell, and Hillary Stoll (myself) arrived at the AltEn, LLC facility in Mead, Nebraska at about 8:00 AM on May 5, 2021. The weather was about 45 degrees Fahrenheit. The observations included in this memorandum are only those that are related to the portable wastewater treatment system that has been set up and operated by Clean Harbors and its relation to AltEn's wastewater treatment system. Observations related to other aspects of the facility are included in a separate memorandum. Moreover, AltEn's wastewater treatment system was described in a separate memorandum for a site visit on April 14, 2021.

While at AltEn, I spoke with Mr. Bill Dixie with Clean Harbors, who is the project manager for Clean Harbors' portable wastewater treatment system that is on site at the facility. Mr. Dixie stated that they are providing further treatment of wastewater effluent from AltEn's wastewater treatment system. The Clean Harbors portable wastewater treatment system includes ferric chloride addition which is followed by clarification. Following clarification, the wastewater flows through two baghouses, which are operated in parallel. Following this, the wastewater flows through three sand filters, which are operated in parallel. The wastewater then flows through a clay filter, and then five carbon filters, which are operated in series. Mr. Dixie said that they are adjusting their treatment system and have tried different resins and combinations of filter media. I asked him how often the sand filters are backwashed, and he said that they are backwashed about three to four times per day. He said that backwashing frequencies for the carbon filters are more variable. Moreover, I asked how often they change the carbon media and he said that it is changed about once per week. Once this media is spent/removed, it is landfilled. All filter backwash water is sent back to the emergency lagoon. I asked what the average flow rate through their treatment system is, and Mr. Dixie said it varies from 100-230 gallons per minute (gpm). I asked what analytical tests are being completed on the wastewater. Mr. Dixie stated that they do jar testing daily and measure the pH every hour. Moreover, they do full testing twice per week. The full testing includes influent and effluent sampling for pesticides and traditional parameters including, but not limited to, biochemical oxygen demand (BOD), total



suspended solids (TSS), ammonia, and total organic carbon (TOC). According to Mr. Dixie, they have been able to produce effluent from their treatment system with ammonia concentrations of 1-2 mg/L.

After speaking with Mr. Dixie, I spoke with Mr. Matt O'Brien, who was previously an engineer with AltEn and is now an employee with Clean Harbors. I asked Mr. O'Brien if he received the TOC results for the sampling that he completed to evaluate AltEn's wastewater treatment system (not Clean Harbors' portable treatment system). He said that the TOC of the influent entering AltEn's carbon filters, following the treatment prior to the carbon filters, was about 675 mg/L. The TOC for the effluent exiting AltEn's two carbon filters was about 625 mg/L. Thus, he concluded that the carbon in AltEn's carbon filters needs to be replaced.