



PRELIMINARY REPORT

Hazardous Materials

Anhydrous Ammonia Release from a Nurse Tank Trailer Beach Park, Illinois

April 25, 2019

HMD19FR002

The information in this report is preliminary and will be either supplemented or corrected during the course of the investigation.

On April 25, 2019, about 4:33 a.m. central daylight time, about 750 gallons of anhydrous ammonia liquefied compressed gas (UN1005, Division 2.2) were accidentally released from two 1,000-gallon nurse tanks mounted on a farm trailer that was being pulled by a John Deere tractor in Beach Park, Illinois. The driver was operating the tractor in combination with an applicator tool bar that applies the anhydrous ammonia as a fertilizer. While traveling between farm fields, the driver said that he heard a “puff” sound. When he turned his head around to see the nurse tanks, he saw a gas cloud.

This accident occurred while the tractor and nurse tank trailer were traveling south at the intersection of West Clarendon and North Green Bay Road in Beach Park. As a result of the hazardous materials release, 41 people, including 11 first responders, were injured and treated for various degrees of injury (from non-life threatening to critical) at local hospitals. The driver of the tractor was not injured.



Figure 1: Photo of John Deere tractor with the applicator tool and nurse tanks attached.

The initial 911 call reported an automobile fire with an injured person in the street. The Beach Park Fire Department had the first response personnel to arrive at the scene; several fire fighters were immediately exposed to anhydrous ammonia. Firefighters then donned self-contained breathing apparatus but were later transported to a hospital as a precaution. A regional hazardous material team from the Lake Forest Fire Department approached the vehicle and found: (1) the liquid withdrawal valves on top of the tanks and a shut-off valve on the manifold, where the two hoses from the nurse tanks joined, to be fully open, and (2) the liquid supply hose to be disconnected from the union coupler. The hazardous materials response team closed the shutoff valve on the manifold, which stopped the release. The team then proceeded to close the liquid withdrawal valves, which secured the scene.

A shelter-in-place was ordered for the nearby communities. After the release was stopped, the responders visited 829 homes to ensure there were no additional injuries.

National Transportation Safety Board (NTSB) investigators have completed the on-scene work. Investigators plan to examine the liquid withdrawal valves (equipped with excess flow valves), the manifold shutoff valve, and an applicator hose coupler, which were shipped to the NTSB materials laboratory in Washington, DC.

The preliminary findings from the investigation include the following:

- Trinity Containers, LLC, manufactured the two ASME-specification nurse tanks that were involved in this incident.
- The tanks were owned by Conserve FS, an agricultural cooperative, who leases nurse tanks to farmers.
- The driver picked up the loaded nurse tanks at the Conserve FS facility in Kansasville, Wisconsin, which is about 30 miles from the accident scene. He had planned to return the tanks to Conserve FS after he had finished applying the fertilizer.
- Continental NH3, an anhydrous ammonia product and equipment manufacturer, supplied the liquid withdrawal valves. The excess flow valves are rated to close at a flow rate of 42 gallons per minute.
- The State of Illinois requires that during transit, the transfer hose shall not be joined between a nurse tank and tool bar.
- A total of 165 emergency responders were deployed to the hazardous materials release, involving multiple fire and police departments from surrounding jurisdictions.

Parties to the investigation include the Pipeline and Hazardous Materials Safety Administration, the Federal Motor Carrier Safety Administration, the Lake County Sheriff's Office, and the Illinois Fertilizer and Chemical Association.