

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

P062940655

FACILITY: HENNEY FARMS		SRN / ID: P0629
LOCATION: 12711 ROUND LAKE RD, SUNFIELD		DISTRICT: Lansing
CITY: SUNFIELD		COUNTY: EATON
CONTACT: Brian Henney, Co-owner		ACTIVITY DATE: 07/11/2017
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Announced, scheduled inspection to determine Henney Farms' compliance with PTI 125-15		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow
Personnel Present: Brian Henney, owner (dhenney2009@hotmail.com)
Jake, Records Keeper

Purpose: Conduct an announced, scheduled compliance inspection by determining Henney Farms' compliance with Permit to Install (PTI) No. 125-15 for Anhydrous Ammonia Storage and Handling. This facility was last inspected (for the first time) November 20, 2015. Follow-up items from the previous inspection were the focus for this inspection.

Facility Background/Regulatory Overview: Henney Farms is a private company who applies anhydrous ammonia to their own farmland. The PTI special conditions are created based on consideration of Best Available Control Technology for toxics (T-BACT), the American National Standard (ANSI) for Safety Requirements for the Storage and Handling of Anhydrous Ammonia, and MIOSHA requirements summarized in the Department of Labor and Economic Growth General Industry Safety Standards, Part 78 for Storage and Handling of Anhydrous Ammonia (1910.111). The Air Quality Division (AQD) was made aware of this tank installation after I received a confidential complaint on 6/3/15 that the tank had been installed without a permit. Concern was raised that the tank was too close to neighboring residences and may not be filled in a proper or safe manner. PTI 125-15 was issued in response to this complaint. A General Permit to Install was not issued because the actual setback distance of the tank was less than 300' away from the nearest residence. Actual distance from the nearest residence is 250'.

Brian Henney, owner of Henney Farms, per request of AQD, submitted a PTI application within two weeks of being notified that a PTI was necessary for the installation of an anhydrous ammonia tank; this included submittal of an emergency response plan, reviewed and signed by the local fire department to ensure that safety concerns from an emergency standpoint had been addressed prior to issuance of the permit.

B. Henney had said he bought the tank through Citizen's Vermontville, who had told him that an air permit was not required prior to installation.

Inspection: This was an unannounced compliance inspection. At 8:15 a.m. on 6/6/17 I had attempted to conduct an inspection, by reaching B. Henney at his residence on Round Lake Rd, to find that his son lived there. I worked with B. Henney over the phone to schedule an inspection date where both he and I were available to meet at the anhydrous ammonia tank. At approximately 7:45 a.m. on July 11, 2017 I met with B. Henney at the anhydrous ammonia tank location and followed him to the located where his nurse tanks are stored before driving back to the anhydrous ammonia tank and his work shop to conduct the remaining portion of the inspection.

B. Henney said that they only use anhydrous ammonia approximately 3-5 days out of the year and that their application season is only in the summer, fertilizing the ground in June. Both the nurse tanks and anhydrous ammonia permanent storage tank were empty during the inspection. B. Henney said they did not use anhydrous ammonia this year, but used urea instead. He said that the price of urea for the season will determine if they use anhydrous ammonia or urea for that particular year.

He explained that they take their nurse tanks out of storage 2 days before they plan on filling them. The permanent storage tank is filled multiple times, as the delivery truck has a holding capacity much less than the permanent storage tank. He said that after 3-5 days they have used all the NH₃ that was shipped to them (the NH₃ tank is empty) and will purchase additional NH₃ from their local co-op if needed. The purchased NH₃ tank is sent back to the company when they have used what they needed.

EU-AMMONIA – Special Conditions (SC)

PTI No. 125-15 is for a single anhydrous ammonia tank with no more than a 30,000 gallon capacity and any associated nurse tanks. The tank, according to the PTI application, is 17,950 gallons. B. Henney said he owns 9 nurse tanks that are stored approximately 10 miles away at another private farm, located at 6602 Hager Rd, Vermontville.

There are no Emission or Material Limits for this facility.

Process/Operational Restrictions

SC III.1

Henney Farms is required to comply with the Michigan Department of Labor regulations as defined in the American National Standards Institute (ANSI) manual K61.1-1972 (second edition). The most recent updated version of this ANSI standard is K61.1-1999 (fifth edition).

ANSI K61.1-1999 Section 3.4

The following items are required to be on-hand for emergency and rescue purposes:

- (3.4.1.1) Two full-faced gas masks jointly approved by NIOSH and MSHA, each with one spare canister in a readily accessible location, OR two high visibility full head hoods each with a minimum of 5 minute pressurized air supply (this includes full face respirators or self-contained breathing apparatuses as alternatives)
- (3.4.1.2) One pair of protective gloves impervious to ammonia
- (3.4.1.3) One pair of protective boots impervious to ammonia
- (3.4.1.5) Easily accessible emergency shower and a plumbed eyewash unit or at least 100 gal of clean water in an open top container
- (3.4.1.6) Chemical splash goggles

B. Henney has a respirator, face shield, rubber boots, goggles and safety glasses, which he keeps on-hand in a large metal enclosure/box near the anhydrous ammonia tank. During the application season he said he also has a tub used for safety water that he keeps near the barn wall. He explained that the NH₃ delivery person said it is safer to keep the tub near a location that you can get to that is at a distance from the NH₃ vapors where one would be able to focus on getting to the general location if there was eye contact with the NH₃. Henney Farms is in compliance with this standard.

ANSI K61.1-1999 Section 5.12 – Painting of containers

This standard requires the tank to have a reflective surface maintained in good condition. White or other colors with similar reflecting characteristics are acceptable. Henney Farms has painted the entire tank white and is therefore in compliance with this standard.

ANSI K61.1-1999 Section 6.4 – Installation of storage containers

According to 6.4.1 the aboveground containers should be reinforced with concrete footings and foundations or structural steel supports mounted on reinforced concrete, and the lowest point of the tank should not be less than 18 inches above ground. Henney Farms permanent storage tank has structural steel supports that are mounted on concrete footings and although I did not measure the distance between the ground and lowest point of the tank, it appeared to be greater than 18 inches. Henney Farms is in compliance with this ANSI standard.

ANSI K61.1-1999 Section 6.6 – Marking containers

NH₃ storage tanks are required to be marked on at least 2 sides, which are visible with the words “ANHYDROUS AMMONIA” in sharply contrasting colors with letters not less than 3.9 inches high. Each container should also be marked on each end and on each side with the words “INHALATION HAZARD” in sharply contrasting colors with letters not less than 2 inches high. Henney Farms’ tank is immediately adjacent to the barn, which only allows 3 sides to be used. All 3 sides have the appropriate labeling according to this requirement. Henney Farms is in compliance with this requirement.

SC III.2

According to this condition, the permittee must implement and maintain the inspection and maintenance program specified in Appendix A of the permit for the nurse and permanent storage tanks. Permanent storage tanks must be inspected at least twice per year, prior to spring and fall application seasons (as stated above, Henney Farms’ season starts in June, and only has the spring application season). Nurse tanks are required to be inspected daily and documented at the permittee’s discretion. They are also required to document all maintenance and repairs for the nurse tanks.

Jake pulled 2016 – 2017 files to show me that they reformatted Appendix A to their preference, but it contains the same information as Appendix A in the permit. The permanent storage tank was inspected and checked satisfactory for all checklist items on 6/10/16, 9/19/16 and 6/2/17. I explained to them that it is not mandatory that they inspect their permanent storage tank before the fall application season, as they do not have a fall application season. I left it up to them whether they wanted to continue to inspect the tank in the fall or to continue only inspecting prior to their summer application season. In addition to keeping Appendix A inspection records, they also record on a separate sheet of paper, replacements of the permanent storage tank components. On 6/2/16 they replaced the safety relief valves and on 6/9/16 they replaced the pressure gauge.

Additionally, Jake showed me the inspection records of the nurse tanks, which are recorded on the days that the nurse tanks were being filled and utilized. Their nurse tanks are labeled B1-B9, and for 2016 these set of tanks were inspected on 6/13/16, 6/15/16, 6/21/16 and 6/22/16. On their checklist, they check off satisfactory, and if it is not, they state that they repaired the item on the checklist and include the date it was repaired. On a separate sheet of paper they log the repairs that were conducted on the nurse tanks. For 2016, repairs included the replacement of safety relief valves (6/2/16) and replacement fill station hoses (6/9/16).

Although not required by Appendix A, Henney Farms also logs the dates of NH₃ delivery.

SC III.3

Henney Farms is required under this condition to have an emergency response plan, to be followed in the event of an emergency, which has been approved by the local fire department or county emergency response agency and has been implemented and maintained. I required that the approved emergency response plan be included in the PTI application for the application to be determined complete (attached). Sunfield Fire Department's Michael Haskin reviewed and approved of the emergency response plan on June 17, 2015. The plan addresses notifying nearby residences of any releases. During the November 2015 inspection, I reminded B. Henney that this plan should be updated on an annual basis, if needed, and should be reviewed by the fire department prior to the start of every summer application season. During this inspection it was determined that the emergency response plan had not been reviewed since June 2015 by the fire department. Because Henney Farms did not use NH₃ from their tank this year, only 2016 needed to be accounted for with respect to emergency response plan review. I let Jake and B. Henney know that this can simply be a phone call to the Sunfield Fire Department, requesting that they review the plan and provide verbal approval for the plan. I told them that they only must document the date they called, the date the fire department gave verbal approval and who from the fire department gave the approval. At this time I will not be sending a violation notice for this deficiency.

SC III.4

This condition addresses setback distances from the permanent storage tank to the property line, nearby residents, hospitals, schools, apartments and nursing homes. Because the tank had already been installed, the general permit to install condition of 300' setback from residences did not apply. The permit was written, therefore, at the actual setback distance of the tank from the nearest neighboring resident: 250'. During the November 2015 inspection, Nathan Hude and I borrowed Water Resource Division's measuring wheel to verify that the distance from the tank to the resident was at least 250'. The measured distance was 249.7' and is considered to meet the 250' setback requirement established in the permit. Based on Google maps, the anhydrous tank is also greater than the 50' setback distance from the property line, as required in the permit. There are no schools, apartments, hospitals or nursing homes within a 2 mile square radius. Henney Farms is in compliance with the setback distances at this time.

SC III.5

Henney Farms is required to conduct all transfer operations using a person that is properly trained and made responsible for proper compliance with all applicable procedures. B. Henney said that WJ Stafford of S&F Propane, located in Richland, MI (Kalamazoo County) transports and transfers anhydrous ammonia into his storage tank. After the November 2015 inspection, I contacted S&F Propane and spoke with Jodi Stafford, who verified that they were the transporter/transferees of anhydrous ammonia for Henney Farms and that their staff are trained for anhydrous ammonia transport/transfer via the Certified Education Training Program (CETP), of the Michigan Propane and Gas Association and National Propane Association. Henney Farms is in compliance with this condition at this time.

SC III.6

As mentioned, the 9 nurse tanks are currently stored empty at another farmer's property located at 6602 Hager Rd, Vermontville. I followed B. Henney from Round Lake Rd to this location to inspect the nurse tanks. Attached is an aerial photo of the property with a circle around the building housing the nurse tanks. Using Google Earth, the distance from the barn where the nurse tanks are stored and the resident's home is ~220 ft, meeting the 150' setback distance from residential properties requirement. There are no nursing homes, hospitals, apartments, schools, or other locations of private or public assembly within a mile (5,280 ft) radius of the property, thus storage of the tanks is located within the permitted setback distances at this time. Henney Farms is currently in compliance with this condition.

SC III.7

All nurse tank filling is required to be done only from the permanent storage tank. Although transfer operations were not currently taking place during the inspection, B. Henney showed me where the bulkhead of the permanent storage tank was and that the nurse tanks are filled from that point. Henney Farms is currently in compliance with this condition.

SC III.8

Nurse tanks are only allowed to be filled up to 85% and permanent, uninsulated storage tanks up to 87.5% (per Rule 7801(b) (11)). The permanent storage tank was empty, and according to B. Henney, the nurse tanks were also empty during the time of inspection. B. Henney says that they usually fill the nurse tanks between 80-82 vol%. Henney Farms is currently in compliance with this condition.

SC III.9

Vapor return lines are required to be employed when necessary to ensure an accidental release will not occur from the pressure relief valves during ammonia transfer operations. Vapor return lines (yellow pipes) are utilized when the nurse tanks are being filled, as well as when the transport truck is filling the permanent storage tank. Henney Farms is in compliance this condition.

SC III.10

Henney Farms is not allowed per this condition to add nitrogen stabilizers to the permanent storage tank. B. Henney verified that no nitrogen stabilizers are added to the anhydrous ammonia in the permanent storage tank. Henney Farms is in compliance with this condition.

Design/Equipment Parameters**SC IV.1**

A safety relief valve is required to be installed with a manufacture date stamp so as to establish the replacement date of the valve (permit requires replacement every 5 years). Henney Farms' permanent storage tank has a safety relief valve that is located on the top of the tank. B. Henney said that he purchased a brand new valve in 2015, but has removed the valve for the winter months. As referenced above, B. Henney had the safety relief valve on the permanent storage tanks, as well as the safety valves on the nurse tanks replaced 6/2/16. B. Henney said that in order to stay on track with the replacement schedule, he is replacing all hoses and safety relief valves at the same time. Year 2016 starts off the 5-year cycle. Henney Farms is in compliance with this condition.

SC IV.2

A remotely operated internal or external positive shut-off valve must be installed to allow for emergency shut-off of all flow from the permanent storage tank. B. Henney showed me the mechanism that has been installed at the bulkhead, where when hit, shuts off the flow in both the vapor and liquid lines in the event of an emergency. Henney Farms is in compliance with this condition.

SC IV.3

This condition requires that a bulkhead, anchorage, or equivalent system be used at the transfer area so that any break resulting from a pull will break at a predictable location. There is a bulkhead present through which the liquid and vapor lines run and through which the nurse tanks are filled and the permanent storage tank is filled. Henney Farms is in compliance with this condition.

SC IV.4

Excess flow valves are required to be installed on the main container side of the bulkhead for the vapor lines. Additionally, back pressure check valves are required to be installed in the liquid lines of the transport transfer area. These have been installed and are a part of the emergency shut-off valve shut down mechanism. Henney Farms is in compliance with this condition.

SC IV.5

Hoses are required to be replaced 5 years after the date of manufacture. There were no hoses present on the tank during the inspection. B. Henney said he removes the hoses for the winter and then reinstalls them when the summer application season starts. Verification that the hoses are manufacturer date stamped and are being used within that 5-year period will still have to be verified.

SC IV.6

All vapor or liquid lines required to be vented after anhydrous ammonia transfer are to be vented into 55 gallons minimum of water. B. Henney explained that none of the vapor and liquid lines need to be vented after transfer. There is a coupling which he says he release pressure from but that it is only a small spurt. Couplings are excluded from this requirement. Henney Farms is in compliance with this condition at this time.

SC IV.7

A sign is required to be conspicuously placed at the entrance of the facility with emergency contact information containing the owner, primary operator, local and state police, local fire department and ambulance service. This sign was not present during the 2015 inspection, but was considered acceptable, as the 2016 application season had not yet begun and there was no NH3 in the tank at the time. During this inspection I verified that a sign was present. It is a small sign located at the north entrance of the property along the drive leading back behind the barn where the tank is located. It contains B. Henney's name and phone number, with 911 as the number to call for police, fire department, and ambulance services. Henney Farms is in compliance with this condition.

Monitoring/Recordkeeping**SC VI.1**

Records of date, duration and description of any malfunction or spill from the permanent storage tank, including estimated amount released must be kept. To date B. Henney said there have been no malfunctions or spills from Henney Farms' anhydrous ammonia tank. Henney Farms is in compliance with this condition.

SC IV.2

Henney Farms is required to keeps records of the date of annual review and approval of the emergency response plan. Their first plan was approved on 6/17/15. As mentioned earlier in this report, I have discussed with B. Henney that review and approval of the plan by the Sunfield Fire Department must be documented. A violation notice will not be issued at this time, but I will call before the 2018 application season to verify whether the review and approval has occurred.

Compliance Statement: At this time, Henney Farms is found to be in compliance with PTI 125-15 at this time. Follow-up phone calls will be necessary to ensure that the emergency response plan is reviewed and approved prior to the 2018 summer application season.

NAME M. M. M. M. M. DATE 7/12/17 SUPERVISOR B. M.