

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Pilgrim's Pride Ammonia Release - Removal Polrep
Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #6**
Final
Pilgrim's Pride Ammonia Release
Marshville, NC
Latitude: 34.9865120 Longitude: -80.3638720

To:
From: Kenneth Rhame, OSC
Date: 10/27/2011
Reporting Period: 8/23/2011 to Present

1. Introduction

1.1 Background

Site Number:	Contract Number:
D.O. Number:	Action Memo Date:
Response Authority: CERCLA	Response Type: Emergency
Response Lead: PRP	Incident Category: Removal Action
NPL Status: Non NPL	Operable Unit:
Mobilization Date: 8/17/2011	Start Date: 8/17/2011
Demob Date: 8/23/2011	Completion Date: 8/23/2011
CERCLIS ID:	RCRIS ID:
ERNS No.:	State Notification:
FPN#:	Reimbursable Account #:

1.1.1 Incident Category

Emergency Response

1.1.2 Site Description

At 0436 hours on August 16, 2011, an ammonia release occurred at the Pilgrim's Pride chicken processing facility in Marshville, NC. An unknown amount of ammonia was released. Approximately 35 homes in the surrounding area were initially evacuated by the local fire department, due to the release to the air. The CSX main rail line, located 100 yards behind the facility was shutdown. CSX's contractor, HEPACO, is assisting the facility with the response. A 10-inch pipeline carrying ammonia may have been breached as well as a water line. The discharge may impact the Pee Dee River nearby. The facility remains shutdown due to elevated levels of ammonia in the facility. OSC Kenneth Rhame and START contractor, OTIE have been dispatched to assist with the response. EPA is performing continuous air monitoring and has performed two sampling events of the nearby unnamed tributary.

1.1.2.1 Location

5901 HWY 74 WEST
MARSHVILLE, NC 28103

Latitude: 34.9865120
Longitude: -80.3638720

1.1.2.2 Description of Threat

An unknown quantity of anhydrous ammonia released from the plant. Release to air and nearby creek has been documented; air quality is being monitored and water samples have been collected.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

A release of approximately 100 pounds of anhydrous ammonia was reported to the NRC by employees of the Pilgrim's Pride poultry processing plant at approximately 0436 on 8/16/2011. An explosion was reported to the NRC at approximately 0500 by Pilgrim's Pride employees, no evacuation was reported at the time and no assistance was requested. At 0645 a call was received by 911 requesting fire department assistance to dissipate an ammonia cloud in the vicinity of the plant. The Fire department responded and

evacuated approximately 1.5 miles downwind of the facility, including 35 homes. Employees of Pilgrim's Pride and refrigeration contractors attempted to isolate damaged tanks and lines in the refrigeration system. CSX was notified of the incident, who hired HEPACO to perform air monitoring at the railroad which borders the facility to the north.

EPA did not receive any notification aside from the initial NRC Report, which reported a release of 100 lbs of ammonia until approximately 1700. EPA received a call at approximately 1700 from the local fire department reporting a potential release of greater than 20,000 lbs of anhydrous ammonia; EPA was also notified of the evacuation at this time. NC Outpost OSC Rhame notified phone duty, who placed follow up calls to local agencies and notified NCDENR. Phone duty collected information from local responding agencies. Fire department reported that no assistance was required at the time and that the incident was winding down based on information received from Pilgrim's Pride employees and contractors. The Fire Department reported that it continued air monitoring at the evacuated residences and consistently observed 0 ppm of ammonia. Evacuated residences were allowed to return to their homes at approximately 1700. On 8/17/2011, OSC Rhame received a call at approximately 1030 from Mike Cooke with NC Emergency Management. Cooke indicated that the release was still not secured and that ammonia concentrations in the plant were rising, it was not known at the time when the release would be secured. Cooke also mentioned that a water line had ruptured and that a potential release had occurred to an unnamed tributary located to the east of the facility. OSC Rhame contacted local fire department who then requested EPA assistance. EPA mobilized START and EPA Mobil Command Post (MCP) with Area Raes and an YSI water quality meter.

EPA arrived at the local fire department at approximately 1400 to meet with local responders. START arrived onsite at approximately 1600 and collected water samples for ammonia analysis. Pilgrim's Pride environmental contractor CCI plugged water drainage lines and refrigeration contractors continued to offload ammonia tanks and lines. EPA MCP arrived onsite and set up Area Raes at the ventilation exhaust point, southeastern property line on highway 74, northern property line on railroad tracks, western parking lot and northwestern property line. Levels on property lines have not exceeded approximately 1 ppm. Several dead crayfish were observed approximately .5 miles downstream of the facility in one location; NC DENR DWQ was notified, no other fish kills have been observed. At approximately 2350 the Fire Department began positive air ventilation of the facility with large fans. EPA continuously monitored all Area Raes during ventilation. Approximately 5,000,000 lbs of chicken has been contaminated and will be disposed of in a landfill pending approval.

On 8/18/2011 Fire Department continued to ventilate the south side of the plant. An entry was made at approximately 1130 to the south side of the processing plant; the entry team observed 0 ppm NH₃ in the entire south portion of facilities first floor, the second floor was also cleared at 0 ppm during a later entry. The Area Rae that was placed on the loading dock on the southeast of the facility and the Area Rae on the northeast on the property line were found to be reading high due to saturation the night of 8/17. New Area Raes equipped with VIPER supplied by ERT were placed on the northeast property line, southeast property line, northwest rail road crossing and southeast property line. Air monitoring continued throughout the day with minimal hits on all units with the exception of the unit on the northeast property line which averaged approximately 40 ppm. There are no residences or businesses to the northeast of the facility. No complaints have been received from residents or businesses as of 2200. A robot was delivered to the site to assess the northern section of the building. Elevated concentrations were observed that exceeded the monitoring capability of the instrument, vapor clouds were also observed via video feed. A ventilation plan was devised to conduct ventilation operations of the northern section of the facility while EPA continued to monitor ammonia levels. OSC Rhame consulted with EPA toxicologist who recommended an action level of 5 ppm at the nearest residence to shut down ventilation operations. The local incident commander insisted on a 1 ppm action level for ceasing ventilation operations. EPA ERT established two additional VIPER equipped Area Raes to monitor the nearest residences to the east of the facility and will continue to monitor ammonia concentrations continuously. Fire Department continued venting through the night and did not observe any ammonia readings on the residential Area Raes.

START and NCDENR DWQ walked approximately 1 mile of the nearby unnamed tributary to assess any damage to the area downstream of the facility. 3-4 areas with small numbers of small dead fish and crayfish were observed within .3 miles of the facility. No dead fish or any other organism was observed beyond .3 miles downstream of the facility. Samples were taken at the same points as the previous sampling event with the addition of two sampling points approximately .5-.75 miles downstream of the facility. Sampling results will be available of 8/19/2011. Numerous live minnows and small fish were observed in the tributary at the nearest road crossing Austin Grove Church Road.

On 8/19/2011 ventilation of the building continued. EPA continued air monitoring of the property line. The northern portion of the facility was vented from the western side to the eastern side. Visible ammonia was observed issuing from the exhaust point on the eastern side of the northern building; a fan was placed at the exhaust point to dissipate the ammonia into atmosphere. Ammonia concentrations were observed in the exhaust exceeding the Area Rae's monitoring capability of 200 ppm. Area Raes at the property lines did not detect ammonia levels exceeding 6 ppm during the day. Entry into the northern building is not possible due to damage to be building caused by the explosion on 8/16, so it has not yet been determined where the source of continued ammonia release is located. EPA is working with local response agencies to determine a plan to gain access to the building and address the ammonia source.

On 8/20/2011 ventilation of the building continued. 150,000 lbs of chicken have been removed from the south building; 4000 lbs of storm water have been collected. At 0826 exhaust from the north building was 102 ppm NH₃, at 0956 the exhaust read 130 ppm, at 1522 exhaust read 111 ppm. HEPACO is on site to discuss possibility of partially demolishing the building to gain access to the ammonia source. According to Pilgrim's Pride 1,308 lbs of ammonia was in refrigeration equipment at the time of the release. START observed numerous live fish downstream at the crossing of Austin Grove Church Road and the unnamed tributary located at the facility, no dead fish or other aquatic life was observed. At 1315 Fire Department made an entry to the North Building with a robot equipped with an Area Rae with ammonia and H₂S sensors. Ammonia concentrations were observed at 128, 165 and over 200 ppm as the robot moved further into the building. At 1415 all interested parties met to discuss further actions including local Fire

Dept/Incident Command, OSHA, Pilgrim's Pride, EPA, local Police, HEPACO, CCI, Emergency Management and a local structural engineer. All parties agreed that ventilation alone is not providing results quickly enough because as temperatures rise in the building frozen chicken will thaw and begin to rot; also two schools are located near the site and will begin for students on August 25th. All parties agreed to apply a fine mist to the building to reduce the NH3 concentration, no floor drains are located in the building so water will enter the storm drain system which is plugged and is being collected by CCI. All parties also agreed to begin controlled demolition of portions of the building to gain access to the building. An ice house located on the west side of the building will be removed beginning tomorrow morning in order to open one of the areas damaged by the explosion, Pilgrim's Pride reported that no ammonia is located in the ice house. After applying 1000 gallons of mist to the building Fire Dept. made another robotic entry and observed 145 ppm inside the building. Ventilation continued overnight. CCI continued to remove chicken from the south building and collecting storm water.

On 8/21/2011 Fire Department made an entry to the north building to determine NH3 levels and to gain more information for the structural engineer to make a determination if the building is safe. The highest concentration that the entry team observed is 96 ppm in an area of the building that has not been ventilated. A hole will be cut on the north wall of the north building in order to open another ventilation area, the building will be exhausted to the north using positive pressure where no residents are located and work is not occurring. EPA is establishing another VIPER equipped Area Rae at the ventilation point on the property line. D.H Griffon will begin demolishing the ice house as soon as possible. It is unknown if asbestos is present in the icehouse so the area will be misted while demolition is occurring. D.H. Griffon will take air samples during the demolition to ensure that asbestos exposure does not occur. CCI will sample storm water collected during the demo for asbestos. 250,000 lbs of chicken has been removed from the south building. At 1521 24 ppm was observed at the exhaust point. As of 1904 no NH3 has been detected at Area Rae located at the nearest residence.

On 8/22/2011 START observed 18 ppm at the exhaust point on the NE corner of the building. No significant NH3 concentrations were observed over night or throughout the day on the fence line. 0 ppm NH3 was observed at the nearest residence throughout the night and the day. As of 1830, 100000 gallons of storm water has been collected. Pilgrims initially estimated that 47,000 lbs of ammonia was in the system at the time of the release, approximately 30,000 lbs has been recovered leaving 17,000 lbs unaccounted for. It is not known if this ammonia has been released or is still in damaged pipes in the system. A structural engineer made an entry into the north building and determined that it is safe for entry, though respiratory protection is still required due to elevated ammonia levels and biological hazard of decomposing chicken. The demolition of the ice house was completed; the western wall of the freezer was also demolished in order to increase ventilation. Bulk asbestos sample results indicated that pipe jacketing extending from the freezer building into the ice house contains 5% chrysotile asbestos, only 10 linear feet of the material was removed during the demolition and it has been properly isolated and removed, wetting occurred during the demo and air samples were taken as well to ensure no exposure occurred. HEPACO completed cutting the hole in the north portion of the building to increase ventilation, concentrations rose to approximately 4.5 ppm at the fence line at the hole. At 1458, Fire Dept. made an entry and observed 93 ppm in freezer 7, 44 ppm in freezers 1 and 2, 30 ppm in freezer 5 and over 200 ppm in freezer 6. The Union County Fire Marshal determined that the explosion occurred in freezer 5; the cause is still unknown. EPA continued air monitoring over night at the fence line and did not observe any significantly elevated concentrations.

On 8/23/2011 a hole was punched in the roof of the building over Blast Freezer 6 where ammonia concentrations were observed at >200 ppm on 8/22/2011. NH3 concentrations on the property line did not increase after the hole was punched. At 1323, the Fire Dept. made an entry and observed concentrations of 75 ppm in Blast Freezer 6 and 77 ppm in Blast Freezer 5. All areas of the north building have now been entered; 77 ppm is the maximum NH3 concentration in the building. Due to the reduced levels of NH3 EPA has determined that the threat of NH3 migrating off site has been eliminated and demobilized at 1700.

No additional action is anticipated on this site by EPA. The PRP will continue air monitoring for ammonia around the perimeter of the facility to confirm that ammonia does not migrate off site. The PRP will also continue air monitoring inside the facility during ongoing efforts to recover any residual ammonia in tanks or lines and to remove and dispose of spoiled chicken.

Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

Pilgrims Pride, EPCRA notified, NC DENR Air Quality and Water Quality notified.

2.1.4 Progress Metrics

Waste Stream	Medium	Quantity	Manifest #	Treatment	Disposal
Anhydrous Ammonia	Air	Unknown			
Contaminated Chicken	Chicken	5 Million Lbs.			

2.2 Planning Section

2.2.1 Anticipated Activities

No further activities are anticipated at this site.

2.2.1.1 Planned Response Activities

No further action is anticipated by EPA

2.2.1.2 Next Steps

No further action is anticipated by EPA

2.2.2 Issues

Small Fish Kill observed in unnamed tributary to Salem Creek which is a tributary to Pee Dee River.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer

2.6 Liaison Officer

2.7 Information Officer

2.7.1 Public Information Officer

2.7.2 Community Involvement Coordinator

3. Participating Entities

No information available at this time.

4. Personnel On Site

No information available at this time.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.