

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Sunday, May 17, 2009
From: Art Smith and David Dorian

Subject: Scrubber and Air Monitoring in Place
American Cold Storage Ammonia Spill
Louisville, KY
Latitude: 38.2208000
Longitude: -85.7747000

POLREP No.:	2	Site #:	A4ZL
Reporting Period:	5/15-16/2009	D.O. #:	
Start Date:	5/14/2009	Response Authority:	CERCLA
Mob Date:	5/14/2009	Response Type:	Emergency
Demob Date:		NPL Status:	Non NPL
Completion Date:		Incident Category:	Removal Action
CERCLIS ID #:		Contract #	
RCRIS ID #:			

Site Description

On May 13, 2009, the American Cold Storage Facility experience a failure of their refrigeration system that used anhydrous ammonia as the refrigerant. Two personnel conducting maintenance work perished due to the exposure to the ammonia gas. The Louisville Fire Department, KY Health Department, and KYDEP responded and performed rescue and recovery operations and air monitoring. The facility reported the incident to the NRC on May 14, 2009 (0928). The area is mixed use light industry and residential.

Current Activities

On Friday, May 15th USES, the environmental response contractor to American Cold Storage, constructed a trailer scrubber system, which draws ammonia vapors from the plant through a loading dock. USES operated the trailer-scrubber system through the night, and they continue to operate it. The pH of the solution ranges from pH 9 to 10, which roughly equates a one percent NH3 solution. Approximately 6,000 gallons per hour of scrubber water is produced. The Louisville Fire Department dilutes the stream prior to discharge (with permission) to the Louisville Metropolitan Sewer District (MSD).

American Cold Storage also pumped off the refrigerant system which contains the ammonia. The refrigerant system had a capacity of 6000 lbs to 8000 lbs of ammonia. 2025 lbs were reclaimed. The remaining was either released or remains in the system. American Cold Storage continues to pull a vacuum (0 to -1 PSI) on the system in an effort to capture residual ammonia in the line.

USES and EPA checked values at the western and northern fence line with a MultiRae and Gastec tubes. NH3 values ranged from 1 to 6 ppm with the MultiRae and 0 ppm with the Gastec system. Humidity may be interfering with the MultiRae sensor, causing the discrepancy in values between the two measuring systems. Winds are from the southwest and west at roughly 9 mph.

0935 USES team entered in Level B PPE to assess current conditions at Freezers 1, 2, and 3. The building is currently under negative pressure as ammonia laden air is drawn into the trailer-scrubber system. To improve flow, USES team opened slightly the back door to the Freezer 2.

Measurements taken inside the building on May 15th measured in excess of 600 ppm (Gastec Tubes). NH3 values were appreciably lower the following day (Saturday May 16). At Freezer #1 (the point of the leak), NH3 was measured at 310 ppm in the breathing zone and 160 ppm at 20 feet elevation. NH3 was measured at 111 ppm and 93 ppm in Freezers #2 and #3, respectively.

CTEH arrived on scene at 1500 hours on May 16th to conduct air monitoring under contract from American Cold Storage. Air monitoring commenced in the evening using 7 stationary AreaRaes and 1 mobile AreaRae. Values at the fence line were generally non-detect, with some NH3 detection in the 2-4 ppm range—well within limits for public safety. CTEH performed mobile monitoring in the nearest

neighborhood, approximately one half mile north of the plant. All values were non-detect for NH₃ off-site. Please see the Documents section for an air monitoring map and data summary.

Next Steps

USES will continue to operate the scrubber trailer and vent the building. CTEH will monitor the air for ammonia with increased monitoring inside the building in anticipation of partial reoccupation on Monday.

response.epa.gov/americancoldstorageammoniaspill