

**United States Environmental Protection Agency**  
**Region IV**  
**POLLUTION REPORT**

**Date:** Tuesday, September 29, 2009  
**From:** Alyssa Hughes, On Scene Coordinator

**Subject:** Final POLREP  
Severn Peanut Company  
1333 Severn Rd, Severn, NC  
Latitude: 36.5177180  
Longitude: -77.1952880

<b>POLREP No.:</b>	4	<b>Site #:</b>	
<b>Reporting Period:</b>		<b>D.O. #:</b>	
<b>Start Date:</b>	8/12/2009	<b>Response Authority:</b>	CERCLA
<b>Mob Date:</b>	8/12/2009	<b>Response Type:</b>	Emergency
<b>Demob Date:</b>	8/17/2009	<b>NPL Status:</b>	Non NPL
<b>Completion Date:</b>	9/4/2009	<b>Incident Category:</b>	Removal Action
<b>CERCLIS ID #:</b>		<b>Contract #</b>	
<b>RCRIS ID #:</b>			

#### Site Description

Severn Peanut Company houses the largest dome silo of its kind in the country. The dome is 192' in diameter with a height of 100', for an interior volume of 1,791,000 cubic feet. The walls of the dome are constructed with 22" concrete thickness at the bottom, which tapers to a 10" thickness at the top. Inside of the concrete there is 3" thick R19 insulation, and a membrane roof on the exterior. The silo holds 21 million pounds of peanuts, which occupy an estimated 1,345,000 cubic feet of space. The total volume of space within the dome is 1,791,000 cubic feet, leaving approximately 500,000 cubic feet of head space.

Aluminum phosphide tablets, used as a fumigant throughout the grain industry, were applied to the peanut silo on August 4. IFC applied 28.4 grams/1000 cubic feet, for a total of 49,000 grams applied in flasks containing 500 grams each (98 flasks). Standard procedure is to drop the flasks into the dome at the location of a 1' x 3' plate at the top of the dome. Once complete, the plate is replaced and bolts are tightened. Aluminum phosphide reacts with water to produce phosphine gas, which disperses throughout the pile and serves as a rodenticide for the peanuts. Under normal conditions, this reaction takes place within 7 to 10 days, after which the phosphine gas reaches a level suitable for release into the atmosphere (< 0.3 ppm). IFC, the company responsible for application of the fumigant, has taken phosphine readings from a tube which descends 15' into the top of the dome, since application of the fumigant.

Phosphine is a flammable, reactive gas which dissipates quickly in the open environment. Please see the links section for additional information.

The dome, manufactured by DOMETECH International, can reportedly withstand temperatures up to 1000 degrees F. There are 20 thermal cables descending into the dome, which constantly measure the temperature.

Please see previous POLREPS for additional information.

#### Current Activities

On August 24 the dome was opened to confirm that the fire was successfully extinguished. It appeared at the time that the situation was under control, and over the next several days parties were discussing plans on how to proceed. On August 29 a fire that may have begun earlier in the week caused an explosion in the dome, which lead to a bigger fire and the ultimate destruction of the dome. It is unknown how the fire began at this time. Fire investigators continue to look into possible causes of the fire. No one was harmed during the fire or subsequent response actions.

#### Planned Removal Actions

Outposted OSC Ken Rhame coordinated with NC RRT in regards to any assistance requests from the State. No EPA support was requested. Information updates were provided by NC RRT and County EM Director.

**Next Steps**

None.

[response.epa.gov/SevernPeanutCompany](https://response.epa.gov/SevernPeanutCompany)