

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Thursday, February 5, 2009

From: Lynnette Sholar

Subject: Removal Site Evaluation
Southern Meadows Stokesdale
Stokesdale, NC

POLREP No.:	1	Site #:	A4XE
Reporting Period:		D.O. #:	
Start Date:		Response Authority:	CERCLA
Mob Date:		Response Type:	Time-Critical
Demob Date:		NPL Status:	Non NPL
Completion Date:		Incident Category:	Removal Assessment
CERCLIS ID #:	NCN000410316	Contract #	
RCRIS ID #:			

Site Description

Southern Meadows (the "Site") is a subdivision in Stokesdale, NC, Guilford County. In the mid 90's wells were found to be contaminated with 1,2-dibromoethane (EDB), also referred to as ethylene dibromide. Concentrations of EDB were detected in residential wells as high as 33.0 ug/L. NC Division of Water Quality (NCDWQ) conducted a groundwater investigation and determined the source to be within the subdivision. This area was formerly a tobacco farm. There have been no potentially responsible parties (PRPs) identified. Upon discovery (mid 90's) of the contamination, the Guilford County Health Department installed point of entry (POE) carbon filtration units at each residence. Carbon filtration units are temporary solutions and require thorough and constant maintenance. Previously a grant had been given to the county to extend Winston Salem's water line to Pond Ridge Court.

Current Activities

Previously, NC DENR conducted residential water well sampling and found elevated levels of ethylene dibromide above the removal action levels (RALs). NC DENR requested EPA assistance for four residents in the Southern Meadows Subdivision.

7701 Pond Ridge Court - 33.0 ppb
7708 Pond Ridge Court - 12.1 ppb
7800 Pond Ridge Drive - 11.2 ppb
8100 Southern Meadows Drive - 6.8 ppb

Upon request from NCDENR, OSC Rhame met with the Guilford County Dept of Environmental Health and found that three of the four residents were connected to city water:

7701 Pond Ridge Court (CONNECTED)
7708 Pond Ridge Court - 12.1 ppb
7800 Pond Ridge Drive (CONNECTED)
8100 Southern Meadows Drive (CONNECTED)

OSC Rhame then conducted a site visit at 7708 Pond Ridge Court and spoke with the one resident that there was no information available as to whether they were connected to city water. OSC found that the residents had recently purchased the home (within the last year) and they were not aware of the contaminated well water issue. The resident advised the OSC that they did have a filter, but did not know if the filter was installed because of the contamination. The resident was also unaware if the filter was effective in treating the contaminant of concern. The only maintenance performed on this filter had been changing out the suspended solids "filtration sock". OSC Rhame provided temporary bottled water to the residents until additional water sampling was performed.

North Carolina Department of Environmental Natural Resources (NCDENR) requested that the Emergency Response and Removal Branch (ERRB) of Environmental Protection Agency (EPA) sample residential wells in the area to determine if a removal action can be conducted. EPA has sampled in and

around the neighborhood. Nine homes have been sampled, three of which are on filtration units. These 3 filtration units returned EDB concentrations above the Removal Action Level (RAL) of 0.6 ug/L pre filtration and above the Maximum Contaminant Level (MCL) of 0.05 ug/L at post filtration. Current sampling indicates contamination to be within the neighborhood.

Sampling conducted by EPA and START detected concentrations of EDB in groundwater pre-filtration up to 18.0 ug/L; exceeding both the RAL(0.6 ug/L) and the MCL (0.05 ug/L). Breakthrough at post filtration concentrations of EDB were detected at one filtration unit at 0.057 ug/L.

Planned Removal Actions

Ethylene dibromide (EDB) is a hazardous substance, listed in the Title 40 of the Code of Federal Regulations (CFR) Section 302.4, as referred to in Section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended. EDB contaminated wells at the Site pose a significant threat to public health. The threat comes primarily from potential human exposure to this hazardous substance. Direct contact and ingestion of this hazardous substance is the primary pathway of exposure. Continued release of this hazardous substance may cause potential chronic health effects to persons living nearby.

EDB present in groundwater onsite poses the following threats to public health or welfare as listed in Section 300.415 (b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

--Section 300.415 (b)(2)(i) "Actual or potential exposure to nearby human populations, or the food chain from hazardous substances pollutants or contaminants."

Guilford County's initial investigation revealed that there was significant EDB contamination in resident's wells during the mid 90's. The county installed carbon filtration systems in those affected homes as a temporary solution. Further well sampling investigations conducted by EPA and START confirmed existing elevated EDB levels. EPA Region 4 Technical Services Section (TSS) recommends a Removal Action Level (RAL) of 0.6 ug/L (assuming households with children) for residential exposure scenarios. Concentrations exceeding this level at the Site were confirmed through laboratory analysis. The maximum EDB concentration detected in groundwater at pre-filtration was 18.0 ug/L.

--Section 300.415 (b)(2)(ii) "Actual or potential contamination of drinking water supplies or sensitive ecosystems."

The drinking water supply for residents on filtration systems exceed the RAL/MCL for EDB.

--Section 300.415(b)(2)(vii) "The availability of other appropriate federal or state response mechanisms to respond to the release."

As stated earlier, Guilford County referred the Site to EPA for consideration for a time-critical removal action. North Carolina asked to be kept informed of Site activities.

Due to the threat and/or future threat to human health from the hazardous substance, the Site achieves removal eligibility base on the removal criteria listed above.

Next Steps

Possible future sampling at other homes in and around the Southern Meadows neighborhood to assess extent of contamination. In efforts better protect human health and eliminate any filtration maintenance, EPA recommends that each residence operating a filtration system be connected to the existing main water line at Pond Ridge Court.

EPA will install plumbing to connect each resident, operating a filtration unit, to the existing water line at Pond Ridge Court. Negotiations are ongoing with Guilford County and Water Technology Control (the water supply company) to install water meters (\$2,000) and charge resident's a dry tap monthly fee (~\$30/month) indefinitely.

Writing Action Memo (AM) to discuss planned removal actions.

Key Issues

There are vacant lots in the Southern Meadows neighborhood that have not been developed. EPA wants to insure that a land restriction mechanism (from either the State or Locals) is in place that guarantees the prevention of future well installations for homes constructed on the property. This would require any new development to be connected to the existing water line at Pond Ridge Court.

