United States Environmental Protection Agency
Region V
POLLUTION REPORT

Date: Monday, December 7, 2009
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Subject: POLREP #2 OU4
Behr Dayton Thermal Products VOC Plume Site
1600 Webster Street, Dayton, OH
Latitude: 39.7828173
Longitude: -84.1823135

POLREP No.:	2	**Site #:**	B5FH
Reporting Period:	September 4 through November 20, 2009	**D.O. #:**	
Start Date:	8/5/2009	**Response Authority:**	CERCLA
Mob Date:	8/5/2009	**Response Type:**	PRP Oversight
Demob Date:		**NPL Status:**	NPL
Completion Date:		**Incident Category:**	Removal Action
CERCLIS ID #:		**Contract #**	
RCRIS ID #:			

Site Description

The Behr Dayton Thermal Products Facility (Behr-Dayton facility) is located at 1600 Webster Street, Dayton, Montgomery County, Ohio. The Behr-Dayton facility manufactures vehicle air conditioning and engine cooling systems at the facility. Old Carco LLC (f/k/a Chrysler LLC) owned and operated the Behr-Dayton facility from at least 1937 until April of 2002.

In April 2002, Behr Dayton Thermal Systems, LLC purchased and began operation at the facility.

During the years that Old Carco operated at the facility, the chemical trichloroethylene (TCE) was stored in underground storage tanks (USTs) and used for various processes. Over the years, TCE was released from the USTs and contaminated the shallow groundwater beneath the facility.

Due to the contamination, Old Carco contracted Earth Tech to design, install, and operate two systems for the remediation of soil and groundwater contamination under the Behr-Dayton facility, with TCE as the main contaminant of concern. Earth Tech installed a Soil Vapor Extraction (SVE) system on the Behr-Dayton facility property for soil remediation and began operation in October 2003. The system was operated through December 2005. Earth Tech installed a groundwater remediation system on the Behr-Dayton facility property and began operation in June 2004.

The TCE-contaminated ground water is migrating to the south/southwest through residential and commercial areas. The Site extends in a south-southwesterly direction towards State Route 4 and Interstate 75.

Earth Tech has conducted groundwater monitoring on a network of 75 on-site and off-site groundwater

monitoring wells since 2001. In 2003, the following monitoring wells were sampled and contained elevated levels of TCE: MW010s (17,000 ppb), MW028s (9,600 ppb), and MW029s (16,000 ppb). These monitoring wells are located along the southern perimeter of the Behr-Dayton facility (MW010s) or in the adjacent neighborhood (MW028s and MW029s).

On September 28, 2006, Earth Tech submitted quarterly groundwater sampling results to Ohio EPA. In the report, Earth Tech stated that one shallow groundwater monitoring well, MW038s, which is located at the intersection of Daniel Street and Lamar Street (residential area south of Behr Dayton facility), contained a TCE concentration of 3,900 ppb. Groundwater in the area of the Behr-Dayton facility is located approximately 20 feet below ground surface.

On October 16, 2006, Ohio EPA installed a total of seven soil gas probes along Daniel Street, Lamar Street and Milburn Avenue to evaluate potential risk posed by vapor intrusion from the TCE groundwater plume. Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings (Note - A fact sheet for Vapor Intrusion can be viewed in the Documents Section of the Site Website). The depth of the soil gas probes were approximately one to two feet above the depth of groundwater (20 feet bgs).

Ohio EPA soil gas analytical results detected TCE concentrations at the following levels:

SG-1 = 120,000 parts per billion by volume (ppbv)
SG-2 = 70,000 ppbv
SG-3 = 160,000 ppbv
SG-4 = 140,000 ppbv
SG-5 = 13,000 ppbv
SG-6 = 16,000 ppbv
SG-7 = 12,000 ppbv

Ohio EPA observed TCE concentrations in the shallow soil gas as high as 160,000 and 140,000 ppbv, in samples SG-3 and SG-4, respectively.

In November, 2006, U.S. EPA requested the assistance of the Ohio Department of Health (ODH) and the Agency for Toxic Substances and Disease Registry (ATSDR) to recommend residential and commercial vapor intrusion sub-slab and indoor air screening levels for TCE. The following TCE screening levels were established for the site:

Residential Sub-Slab = 4 ppbv
Residential Indoor Air = 0.4 ppbv

Commercial Sub-Slab = 17 ppbv
Commercial Indoor Air = 1.7 ppbv

On November 6, 2006, Ohio EPA requested assistance from U.S. EPA to conduct a vapor intrusion investigation south of the Behr-Dayton facility. In October and November 2006, the U.S. EPA collected sub-slab air samples from eight residences located along Milburn Avenue, Daniel Street and Leo Street. TCE concentrations were detected at the following concentrations:

EPA-01 = 14,000 ppbv
EPA-01 (dup) = 980 ppbv
EPA-02 = 18,000 ppbv
EPA-03 = 16,000 ppbv
EPA-04 = 260 ppbv
EPA-05 = 62,000 ppbv
EPA-06 = 3,700 ppbv
EPA-07 = 49 ppbv
EPA-08 = 62,000 ppbv

The results of the sub-slab testing indicated that eight samples exceeded the ODH and ATSDR residential TCE sub-slab screening level of 4 ppbv, with a maximum TCE concentration of 62,000 ppbv in samples EPA-03 and EPA-08.

Based on ODH and ATSDR recommendations, the U.S. EPA followed sub-slab air sampling with indoor air sampling at the eight residential locations in November 2006. TCE concentrations were detected at the following concentrations:

EPA-01 = 1.2 ppbv
EPA-02 = 180 ppbv
EPA-03 = 130 ppbv
EPA-04 = 13 ppbv
EPA-05 = 260 ppbv
EPA-06 = 7.5 ppbv
EPA-07 = 0.4 ppbv
EPA-08 = 49 ppbv

The results of the indoor air sampling indicated that seven samples exceeded the ODH and ATSDR residential TCE indoor air screening level of 0.4 ppbv, with a maximum TCE indoor air concentration of 260 ppbv in sample EPA-05.

On December 19, 2006, an Administrative Order by Consent (AOC) was signed between U.S. EPA and Chrysler (aka Old Carco). Under the AOC, Chrysler conducted the following activities under two U.S. EPA-approved work plans from December 2006 through July 2009:
1) Developed and implemented a Site Health and Safety Plan, including an Emergency Contingency Plan;
2) Conducted vapor intrusion sampling at a combination of 118 residential, commercial and industrial properties;
3) Installed interior TCE vapor abatement systems in 56 structures impacted by TCE where the applicable Indoor Air Screening Level for TCE was exceeded. Abatement systems include installation of a sub-slab vapor removal system, sealing cracks in walls and floor of the basement, and/or sealing or fixing drains that could be a pathway;
4) Developed and implemented a vapor abatement system proficiency sampling plan to confirm that the applicable Indoor Air Screening Level was achieved for TCE following installation of the vapor abatement systems; and
5) Installed a residential SVE system that supplements the vapor abatement systems that were installed in properties bounded by Leo Street, Daniel Street, Lamar Street and Milburn Avenue.

From November 2007 through September 2008, U.S. EPA conducted a U.S. EPA-funded removal action in areas south, southwest and west of the Behr-Dayton facility following a formal dispute with Old Carco as to the exact location of the TCE plume. During the removal action, U.S. EPA completed the following activities:
1) Collected vapor intrusion samples from 277 residential properties; and
2) Installed 149 vapor abatement mitigation systems in residential properties that showed sub-slab TCE concentrations greater than the residential screening level established by ODH and ATSDR.

On July 2, 2009, Old Carco notified its environmental consultant, AECOM (f/k/a Earth Tech) that all work would be terminated at the site due to company bankruptcy.

On July 17, 2009, a Unilateral Administrative Order (UAO) was issued by U.S. EPA to Behr Dayton Thermal Products LLC (Behr Dayton). The UAO effective date was July 31, 2009.

Under the July 2009 UAO, Behr Dayton agreed to perform the following activities under a Phase III Work Plan:
1) Develop and implement a Site Health and Safety Plan, including an Emergency Contingency Plan;
2) Operate and maintain the residential neighborhood SVE system located in the Amvets' parking lot;
3) Conduct annual inspections of the existing 205 vapor abatement mitigation systems located at the Site;
4) Upgrade the existing vapor abatement mitigation systems, as necessary, to be protective to the residents and/or occupants;
5) If additional locations are identified by the U.S. EPA (including but not limited to retesting of locations and newly identified locations), conduct vapor intrusion sampling. If vapor intrusion sampling indicates levels above ODH and ATSDR sub-slab screening levels, install a vapor abatement mitigation system at that location and conduct performance sampling; and
6) Conduct indoor air sampling at the newly constructed Salvation Army complex located at 1000 Keowee

On August 5, 2009, Behr Dayton issued a letter to U.S. EPA stating that it intends to comply, to the extent of its ability, with the terms of the UAO.

On August 6, 2009, Behr Dayton issued a letter to U.S. EPA formally identifying its Project Coordinator (Billy Huston) and formally designating its Contractor (AECOM).

On August 13, 2009, U.S. EPA and Behr Dayton began weekly meetings to discuss project updates. U.S. EPA also conducted a meeting with representatives from Behr VOC Area Leaders

(BVOCAL) to update the local community group on the project status.

During the week of August 17, 2009, U.S. EPA distributed over 700 fact sheets in the McCook Field Neighborhood announcing the September 1st EPA public meeting. The fact sheets explained the importance of the meeting and the need to have property owners and tenants (if applicable) sign new access agreements to give U.S. EPA and Behr Dayton personnel permission to enter the property for inspection and/or sampling activities. A copy of the U.S. EPA mailer is included in the Documents Section of the Site Website.

On August 24, 2009, Behr Dayton submitted a DRAFT Phase III work plan.

On August 27, 2009, a project command post was establisted at 919 North Keowee. In addition, Behr Dayton submitted a revised DRAFT Phase III work plan.

On September 1, 2009, U.S. EPA conducted a public meeting at Kiser Elementary School. Approximately 100 people attended the meeting. EPA RPM Stacey Coburn updated the status of the site remedial investigation and EPA OSC Steve Renninger updated the status of the on-going removal action with Behr Dayton.

On September 3, 2009, U.S. EPA issued a letter to Behr Dayton formally approving the final version of the Phase III work plan. A complete copy of the Phase III work plan can be found in the documents section of the Site Website.

The EPA-approved work plan requires Behr Dayton to conduct the following work:

1) If access is granted, inspect properties where a vapor abatement system was installed either by EPA or by Chrysler. Inspection activities include the following, but not limited to:
• System vacuum/pressure readings (header and sub-slab probe)
• Confirm operation of the blower fan
• Confirm padlock is attached to the on/off switch
• Visual inspection of system piping and components
• Inspection of floor and wall seals
• Confirm operation with residents
• Confirm a copy of the Operation and Maintenance manual is in the residence and updated as necessary

2) If access is granted, Behr Dayton will collect a sub-slab sample in properties that have been sampled once by EPA or Chrysler and initially determined not to require a vapor abatement system. If the sub-slab sample shows a TCE concentration greater than the screening level provided by the ODH, a vapor abatement system will be offered to be installed to the property owner. If a vapor abatement system is installed, proficiency indoor air samples will be collected 30 days, 180 days and 365 days following installation of the system. In addition, the property will be placed into the annual vapor abatement sytem inspection program. If the sub-slab sample shows a TCE concentration less than the ODH sub-slab screening level, the property is eligible to be re-sampled one more time in 2011.

3) If access is granted, Behr Dayton will collect a sub-slab sample in properties that have never been sampled by EPA or Chrysler. If the sub-slab sample shows a TCE concentration greater than the screening level provided by the ODH, a vapor abatement system will be offered to be installed to the property owner. If a vapor abatement system is installed, proficiency indoor air samples will be collected 30 days, 180 days and 365 days following installation of the system. In addition, the property will be placed into the annual vapor abatement sytem inspection program. If the sub-slab sample shows a TCE concentration less than the ODH sub-slab screening level, the property is eligible to be re-sampled two more times in 2011 and 2013.

4) If access is granted, Behr Dayton will collect indoor air samples from the newly constructed buildings within the Salvation Army complex.

5) Perform weekly inspections and periodic effluent air sampling of the neighborhood SVE system.

Current Activities

On September 3, 2009, AECOM collected an effluent air sample from the neighborhood SVE system. The laboratory results showed a TCE level of 3,290 ppbv, which is less than the RAPCA action level of 19,000 ppbv. AECOM is conducting weekly inspections of the SVE system.

On September 8, 2009, EPA mailed out approximately 200 letters and access agreements to properties that have an installed vapor abatement system requesting access for inspection.

On September 15, 2009, EPA mailed out letters and access agreements to 242 properties that are eligible for 'retesting' and 'new testing'.

September 24, 2009 ACCESS AGREEMENT UPDATE:
85 of 205 properties have signed an access agreement allowing the inspection of its vapor abatement system
20 of 134 properties have signed an access agreement allowing the "re-sampling" of their properties
17 of 136 properties that have never been sampled in the past, have signed an access agreement requesting sampling

On October 7, 2009, AECOM collected an effluent air sample from the neighborhood SVE system. The laboratory results showed a TCE level of 2,460 ppbv, which is less than the RAPCA action level of 19,000 ppbv. AECOM continued to conduct weekly inspections of the SVE system.

On October 15, 2009, EPA provided BVOCAL with a list of 285 properties that have yet to return a signed access agreement to allow vapor abatement system annual inspections, re-sampling or new sampling. BVOCAL will attempt to go door-to-door or make phone calls to attempt to obtain more signed access agreements.

October 28, 2009 ACCESS AGREEMENT UPDATE:
109 of 205 properties have signed an access agreement allowing the inspection of its vapor abatement system
51 of 135 properties have signed an access agreement allowing the "re-sampling" of their properties
35 of 126 properties that have never been sampled in the past, have signed an access agreement requesting sampling

On November 4, 2009, AECOM informed EPA that Behr security would be conducting daily inspections of the neighborhood SVE system to ensure that the system was operating. AECOM stated that they installed two lights on the system to assist the Behr security determine of the system was operating. If the GREEN light is illuminated, the system is operating. If the RED light is illuminated, the system is not operating.

On November 12, 2009, AECOM collected an effluent air sample of the SVE system. Results of the sampling will be reported on a future POLREP.

As of November 18, 2009, Behr Dayton has completed the following:

1) 82 properties that have an installed vapor abatement system (2007 or 2008 installation date) have been inspected. In 2007 and 2008, EPA and Chrysler installed vapor abatement systems in a total of 205 properties. EPA has obtained signed access agreements from 113 of the 205 properties.

2) 15 properties have been 're-sampled'. EPA has obtained signed access agreements from 53 of the 135 properties eligible to be 're-sampled'. Of the 15 properties re-sampled, 0 properties have shown sub-slab TCE concentrations greater than the ODH screening level.

3) 15 properties that have "never" been sampled have been sampled (aka baseline sampling) by Behr Dayton. EPA has obtained signed access agreements from 36 of the 126 properties eligible to be sampled. Of the 15 new properties that have been sampled, 9 properties require a vapor abatement system.

4) Behr Dayton has installed a total of 5 new vapor abatement systems at the Behr Site. A total of 9 new properties are waiting to be scheduled for installation of a vapor abatement system.

5) Behr Dayton has completed weekly inspections of the neighborhood SVE system and has collected effluent air samples which, to date, have not shown TCE levels exceeding the site action levels.

Planned Removal Actions

1) Operate and conduct weekly inspections of the residential SVE system located in the Amvets' parking lot.
2) Collect monthly SVE system effluent air samples through 2009 and then twice a year (June and December) starting in 2010.

3) Conduct annual inspections of the existing 205 vapor abatement mitigation systems located at the Site;
4) Upgrade the existing vapor abatement mitigation systems, as necessary, to be protective to the residents and/or occupants;
5) In properties that were previously sampled once by either U.S. EPA or Chrysler and determined not to require a system, collect up to two additional sub-slab samples every other year (2009 and 2011). If the sub-slab sample shows a TCE concentration greater than the TCE sub-slab screening level, a mitigation system will be installed.
6) If newly identified locations are identified by the U.S. EPA, conduct sub-slab vapor intrusion sampling. If vapor intrusion sampling indicates levels above ODH and ATSDR sub-slab screening levels, install a vapor abatement mitigation system at that location and conduct performance sampling; and
7) Conduct indoor air sampling at the newly constructed Salvation Army complex located at 1000 Keowee

Next Steps

1) AECOM to continue vapor abatement system inspections, resampling and new sampling.
2) U.S. EPA to continue weekly meetings with Behr Dayton and with BVOCAL representatives.
3) AECOM to continue scheduling and installing new vapor abatement systems, as necessary.
4) In December, U.S. EPA will send out one FINAL letter to properties that have yet to sign an access agreement for system inspection, resampling or 'new' sampling work.

Key Issues

A project command post has been set up at:

U.S. EPA Command Post
919 North Keowee Street
Dayton, OH 45404
(937) 222-2125

The command post hours of operation are Thursdays 9am to 6 pm.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
TAT/START	$46,500.00	$28,650.00	$17,850.00	38.39%
Intramural Costs				
USEPA - Direct	$25,000.00	$10,000.00	$15,000.00	60.00%
Total Site Costs	$71,500.00	$38,650.00	$32,850.00	45.94%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

response.epa.gov/behrdaytonthermalproductssite

POLREP #2 Last Updated 12/7/2009