

McCook Field Neighborhood Vapor Intrusion, Dayton, Ohio

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As the U.S.-owned auto industry downsizes, auto plants, parts suppliers, and dealerships are shutting down across the country. Since these businesses have used and released toxic substances for decades, auto restructuring is creating a new wave of brownfields. A former Chrysler Airtemp factory in Dayton, Ohio is somewhat unusual, because its contamination was discovered years ago, and because it is already in reuse as a plant operated by Behr Dayton Thermal Systems. But it represents the tip of the auto industry contamination iceberg. The producer of auto heating and cooling systems, run by Chrysler from at least 1937, was taken over by Behr in 2002. In fact, that's the name under which U.S. EPA placed the property on the "Superfund" National Priorities List (NPL) in 2009.

Site cleanup is clouded by the auto company's bankruptcy. Even before restructuring, Chrysler disputed responsibility for a portion of its off-site plume of trichloroethylene. U.S. EPA used its own funds to conduct the majority of a large vapor intrusion investigation. After bankruptcy, the environmental liability for the site rests with Old Carco, the entity left holding Chrysler's unproductive assets. On July 10, 2009 Chrysler halted work at the site. It stopped operating the off-site soil vapor extraction system it installed in 2008, so EPA has been operating the system since that date.



EPA negotiated with both Behr and Chrysler in 2007, but in December of that year it reached a consent agreement only with Chrysler—to conduct emergency vapor intrusion response. On July 17, 2009, with Chrysler essentially out of the picture, EPA issued a Unilateral Administrative Order requiring Behr to take over the entire emergency response, including operation, maintenance, and monitoring of the SVE and vapor abatement systems. Presumably, EPA is prepared as well to require Behr to conduct or fund remedial activities associated with the site's NPL listing.

Behr is reportedly negotiating a workplan with EPA, but it is a reluctant participant. Without any inside knowledge, I wouldn't be surprised if Behr went to court to resist EPA's requirements or to recover funding from one of the Chrysler companies.

If indeed Behr-Chrysler is a sign of the auto industry's future environmental problems, then EPA's Superfund will not have the resources to address these sites in a timely fashion. In the nation's Midwest, where auto companies are concentrated, it's unlikely that other sources—such as state governments and developers—will be able to fund cleanup either.

Concentrations of TCE

This is a seriously contaminated area. Trichloroethylene (TCE) has been measured as high as 17,000 parts per billion (ppb) in groundwater. In the 500-home McCook Field residential area south of the plant, TCE reached 3,900 ppb in shallow groundwater, about 20 feet below the surface. Ohio EPA found soil gas readings as high as 160,000 parts per billion by volume (ppbv), the equivalent of 860,000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). (Normally soil gas concentrations are anywhere from 50 to 10,000 times indoor air levels, the basis of exposure.)



April 2009 Vapor Intrusion Workshop

The first eight homes tested showed TCE in indoor air above the local residential action level of .4 ppbv ($2.2 \mu\text{g}/\text{m}^3$), and three of those exceeded 100 ppbv ($537 \mu\text{g}/\text{m}^3$), the emergency action level. One reached an astounding 260 ppbv ($1397 \mu\text{g}/\text{m}^3$)!

Residents of the McCook Field neighborhood only learned about the contamination in 2002. Neighbors were told that Chrysler knew of the TCE release as early as 1989, and that it had entered Ohio's voluntary cleanup program in 1998—without notifying the neighbors.

Chrysler created a network of 75 monitoring wells on and off site. It operated a SVE system on site for a little more than two years, beginning October 2003. It started up an on-site groundwater treatment system in June 2004. In 2008 it installed a second SVE system, on the edge of the McCook Field neighborhood, but there is no off-site water treatment.

In 2006, U.S. EPA initiated a vapor intrusion investigation. Under its December, 2007 agreement, Chrysler sampled indoor air in at least 118 structures, installing mitigation systems—subslab depressurization—in at least 56. Since Chrysler contested its responsibility for the southern and western portions of the plume, U.S. EPA conducted a “Fund Lead” action in those areas, testing 277 homes and mitigating 149. That project ended in late 2008, but the latest news is that EPA has re-started the emergency response even as it begins the studies designed to lead to site remediation.

In the summer of 2007, after high levels of TCE (as high as 25 ppbv or $134 \mu\text{g}/\text{m}^3$) were found at the Van Cleve at McGuffey school, about a half-mile downgradient from the plant, Dayton Public Schools moved the entire school to a vacant school building about a mile away.



Vocal Neighbors

Led by the McCook Field Neighborhood Association, residents of the area formed BVOCAL (Behr VOC Area Leaders). Supported by the city-wide Environmental Advisory Board and others, they backed Ohio EPA's request that U.S. EPA place the site on the National Priorities List. They are demanding that the plume be cleaned up, and they are asking for a more complete vapor intrusion response.

U.S. EPA proposed the site for the NPL in September 2008 and finalized the listing in April 2009. A remedial investigation is underway, and now that it's on the NPL, a more comprehensive response is anticipated. EPA is funding current activity, and it is not clear how much money EPA will be able to recover from the four potentially responsible parties: Behr Dayton Thermal Systems; Chrysler, LLC (now known as Old Carco); Aramark Uniform Services; and Gem City Chemicals, Inc.

BVOCAL and its supporters throughout Dayton have raised concerns similar to those voiced by impacted vapor intrusion stakeholders elsewhere:

1. They are upset that they weren't notified about the contamination when Chrysler and the government found out.
2. They consider vapor intrusion mitigation a "temporary solution." Jerry Bowling III, President of the McCook Field Neighborhood Association, wrote EPA:

The TCE problem needs to be fixed permanently. Remediation of the groundwater and soil is needed. Until that clean-up has been done, our health will remain at risk, the value of our homes will continue to suffer, and much needed development and investment may stop or not even be considered.

Now that the site is on the NPL, EPA has initiated a remedial investigation that is supposed to develop a plan for cleaning up the contamination, not just keeping it out of buildings.

3. Residents don't understand why some homes have mitigation systems and others don't. Resident Wayne Washington says, "It's all spaced out ... a pump here, a pump there ... but we're all in the same environment." They recognize that sampling results vary over time, and they would feel much more comfortable with a "blanket" response—mitigation for the entire area above the plume. Furthermore, if officials were to adopt the indoor air action level for TCE used by other EPA regions—1.0 to 1.2 $\mu\text{g}/\text{m}^3$ or .2 ppbv—more homes might qualify now.

EPA has countered by promising systems for those homes where the sublab TCE soil gas level exceeds 4 ppbv (22 $\mu\text{g}/\text{m}^3$). Commercial structures will have to meet a standard adjusted for duration of occupancy. Since that is likely to lead to more homes receiving vapor abatement systems, activists seem willing to go along, at least to see how many structures actually receive help.

Perhaps a larger problem is that nearly 100 property owners have thus far denied access to the environmental testing teams. Compared to cooperation rates at vapor intrusion sites elsewhere, that's not a bad number. But BVOCAL has agreed to work with EPA to encourage more participation in the investigation.

4. They have repeatedly asked for periodic indoor air sampling. Even for homes with systems installed, they are concerned that the subslab depressurization systems will not do the job. Indeed, some of the homes with systems installed needed a second system to achieve indoor air objectives. Bowling says, "We want to ... encourage the USEPA to retest all of our homes on an ongoing basis until the problem is resolved."

EPA's Order to Behr calls for annual "performance sampling" of homes with operating vapor abatement systems, but it has more recently clarified that it promises two years of annual inspection followed by representative indoor air sampling the next year. BVOCAL wants more frequent and universal sampling, but it seems willing to see how well EPA's proposed approach works.

At structures without systems—now including non-residential buildings in the former EPA (non-Chrysler) area—EPA promises at least three sub-slab sampling events, including one in the heating season, before structures are cleared for "no further action." Those that exceed the 4 ppbv sub-slab threshold will get systems.



House with Two Subslab Depressurization Systems

5. They believe that their documented exposure has caused cancer in the neighborhood, including one instance of male breast cancer. Bowling wrote:

In August 2008, the Ohio Department of Health and the Agency for Toxic Substances & Disease Registry (ATSDR) shared data from a Cancer Assessment from 1996-2005 in and surrounding the affected area. The assessment did show occurrences of Cancer related to TCE in Census Tract 17 that were higher than expected. Because of the size of the sample area, they would not use the term “significantly higher,” which should have been used because of the SIR values of 3.85/1 to 4/1 (reported vs. expected) of some of those types of Cancers.

In my view, it’s important not to get bogged down in the details of health studies. Constant exposure to TCE in one’s home—without permission and without notice—increases the risk of disease and is unacceptable, even if health studies do not *prove* direct causality.

6. They believe that the contamination has depressed their property values. Bowling says, “We wonder. Is it worth investing in my home if the value is fifty percent of what it was.” No one has offered any compensation.
7. With Chrysler restructuring, they are concerned that money to conduct cleanup, additional mitigation, and long-term management will not be available in a timely fashion. U.S. EPA stepped in to ensure continuous operation of the SVE system, but those costs were marginal. BVOCAL wrote:

Now that Chrysler has filed bankruptcy, it appears that it may try to completely walk away from its responsibilities to this neighborhood. The BVOCAL group is working to make sure that doesn’t happen and that the U.S. EPA does everything it can to protect this community.

EPA has ordered Behr to assume responsibility, but residents fear that auto-parts-supplier Behr will succumb to the industry’s financial difficulties, too. Furthermore, it’s doubtful that anyone will replace the small stipends for electricity that Chrysler provided property owners with abatement systems in its zone. Still, with an alternate responsible party “on the hook,” McCook Field neighbors may be positioned better than the neighbors of other auto plants and dealerships across the country.

The Superfund listing, along with EPA’s willingness to revive and expand the emergency vapor intrusion response, gives residents cause for hope. Their promise to “be vocal” may be what it takes to ensure that they are protected, both in the short run and the long run.

To view “This Is Our Neighborhood!” a video prepared by residents of the McCook Field area, go to <http://www.youtube.com/watch?v=N8tXRg3-bEg>