

US EPA ARCHIVE DOCUMENT

Missouri Department of Natural Resources
Missouri Metals Timeline of Superfund Activities as of Sept. 11, 2012

- 1981: The Missouri Department of Natural Resources conducted a site visit of Missouri Metal Shaping Company after receiving notification of hazardous waste handling at the facility and allegations of historic dumping. The DNR determined the runoff from the site did not appear contaminated and most of the areas would be paved over in the near future. Therefore, no additional corrective action was required.
- 1983: The U.S. Environmental Protection Agency, or EPA, conducted a Superfund Preliminary Assessment and recommended low priority site inspection.
- 1987: The DNR initiated a second Superfund Preliminary Assessment that recommended sampling to determine if on-site contamination had occurred. The report also referenced reported dumping at the site as mentioned in a 1981 memo from DNR's regional office to central office. The findings indicated there was no documentation or field observations to support that chemicals or waste were improperly disposed of.
- 1988: EG&G Missouri Metals purchased Missouri Metals Fabrication Facility at 9970 Page Avenue in Overland from Alco Aerospace. The facility had begun operation in 1956. Volatile organic compounds, also known as VOCs, were first detected in the groundwater at the site during a property transfer audit at that time. The Department of Natural Resources also identified contamination at the site through a Superfund Preliminary Assessment and Site Inspection. At this point in time, metals and trace amounts of VOCs were found in soil and groundwater. The Department of Health and Senior Services, or DHSS, completed a health assessment for the site at the request of the DNR in December 1988. DHSS's health assessment concluded the site should not present a health hazard either to the employees working there or to permanent residents who live nearby.
- 1991: Additional groundwater sampling was conducted by EG&G in January. High levels of VOCs, Tetrachloroethylene, also known as PCE, and Trichloroethylene, also known as TCE, were found. In May, DHSS completed a second health assessment at the request of the DNR. The second health assessment concluded there appeared to be no immediate health threat to the general public at that time, since the site is fenced and groundwater in the area was not used for drinking. In September, the DNR notified EG&G that the state planned to place their site on the Missouri Registry of Hazardous Waste Sites.
- 1993: EG&G completed its additional investigation and submitted a report to DNR. Based on this report, DNR began negotiating a consent agreement.

April 5, 1994: DNR requested the DHSS to update its 1991 health assessment for the EG&G Missouri Metals site prior to finalizing the consent agreement between DNR and EG&G. DHSS concluded its health assessment conclusions were still applicable since there was no use of groundwater in the area.

August 14, 1994: The EG&G signed a consent agreement with DNR negating the need to place the site on the Registry.

1994 to 1998: EG&G conducted environmental studies on their property to determine the source and magnitude of the contamination.

1998: PerkinElmer purchased the facility and assumed responsibility for the environmental obligations set forth in the Consent Agreement.

1998: The DNR required PerkinElmer to investigate the Chicago Heights area regarding concerns that contamination could be moving in groundwater from the PerkinElmer site toward the Chicago Heights neighborhood. PerkinElmer sampled soil in the Chicago Heights neighborhood in August 1998 and found VOCs in both soil and groundwater at the northern edge of the Chicago Heights neighborhood.

November 20, 1998: PerkinElmer collected indoor air samples from basements of four residences in the Chicago Heights neighborhood. No VOCs were detected in any of these air samples. However, TCE was detected in one groundwater sample collected from a basement sump in one of the residences. This groundwater sample confirmed contaminants had migrated in to the Chicago Heights neighborhood.

1999: In the summer of 1999, the DNR moved forward on a plan to conduct a Superfund investigation in the residential neighborhood. The investigation area was named the Chicago Heights Blvd VOC Plume site. The purpose of DNR investigations was to further evaluate other potential sources of the contamination and if residents in the path of the plume were being exposed to pollutant vapors entering their basements through foundation cracks or sumps.

November 8, 1999 - The DNR and DHSS attended the Concerned Citizens of Elmwood Park neighborhood meeting at St. Luke's AME Church to explain upcoming sampling in the neighborhood. Temporary monitoring wells were installed at 26 locations as part of a combined preliminary assessment/site inspection, or PA/SI, investigation.

2000: The PA/SI report was finished in March. Sample results were shared with affected residents and an information repository was established in the Indians Trails Branch of the St. Louis County Library. The PA/SI report recommended further investigation. A copy of the PA/SI report was sent to Ida Scott, president of the Concerned Citizens of Elmwood Park and to the Housing Authority of St. Louis County.

- 2001: DNR initiated a site reassessment investigation. In March 2001, the DNR, working with the Concerned Citizens of Elmwood Park, sent questionnaires to residents regarding the environmental investigation.
- April 23, 2001: The DNR and DHSS held a public meeting at St. Luke's AME Church to provide an update of activities prior to the site reassessment sampling event.
- April 24, 2001: Indoor basement air and sump water was sampled at five residences. Results were provided to each resident and to DHSS. Sampling indicated that two homes had air levels of TCE at 67 micrograms/cubic meter. DHSS determined this was well below the screening level in use at the time, which was 537 micrograms/cubic meter. The other three homes were non-detect.
- Aug. 27, 2001: The DNR received the health consultation report from DHSS. The report concluded that the contaminants found in the sump water and in the basement air that are attributable to the contaminant plume were not at levels expected to cause adverse health effects. A copy of the health consultation was sent to each residence sampled.
- 2001: PerkinElmer focused on plume source control and initiated activities to remediate their property. They conducted successful tests on a new remediation technology to clean up the underground pollution on their property. During this effort, the DNR requested PerkinElmer to resample the basements of the closest houses to ensure residents were still protected.
- Dec. 2001: DNR's Superfund Site Reassessment report was completed.
- 2002: A copy of the site reassessment report and health consultation report were sent to Ida Scott, president of the Concerned Citizens of Elmwood Park in January 2002. Copies of these reports were also sent to the Information Repository at the Indian Trails Branch of the St. Louis County Library. Copies of this report were also sent to the Housing Authority of St. Louis County because most of the homes sampled are properties of the Housing Authority.
- 2002: The site reassessment report was sent to PerkinElmer with the recommendations to continue efforts to halt the migration of contaminants into the residential area and conduct periodic indoor air monitoring at several residences. However, DNR did not have a regulatory mechanism to require this action due to sampling data being below current screening levels at that time.
- March 17, 2003: The DNR, DHSS, the St. Louis County Health Department, Housing Authority of St. Louis County and PerkinElmer's consultant attended a meeting of the Concerned Citizens of Elmwood Park to explain upcoming remedial actions at the Missouri Metal Shaping site.

2003-2004: PerkinElmer remediated on-site soil using chemical oxidation.

2005-2006: PerkinElmer's consultant, Burns & McDonnell requested the site be evaluated under the Missouri Risk Based Corrective Action process. PerkinElmer believed the remediation was completed according to the Registry agreement and the site could be closed under a risk based corrective action process.

March 2005 to June 2006: PerkinElmer submits Remedial Action Summary Report. Off-site and on-site groundwater sampling was completed and results indicated contaminants were still present although some levels on site decreased while some levels off-site increased.

PerkinElmer concludes in this report that other sources of contamination were contributing to the off-site detection of contaminated groundwater at some locations based on geologic migration factors and other testing. DNR's staff reviewed and provided comments on the report.

January 2006: PerkinElmer's consultant, Burns & McDonnell submitted a Human Health Baseline Risk Assessment. Off-site vapor migration was not evaluated in this risk assessment.

2006-2009: Technical comments were ongoing in regards to the Remedial Action Summary Report to Burns & McDonnell. Comments on the human health risk assessment prepared by DHSS were also provided. Burns & McDonnell submitted responses to DNR and DHSS comments in November 2009.

December 2009: DNR held a meeting with representatives of Burns & McDonnell, PerkinElmer, and DHSS to discuss path forward. DNR and DHSS reiterated requests that PerkinElmer prepare a comprehensive off-site residential vapor intrusion and groundwater plan to re-assess off-site contamination and verify that concentrations had not increased over time.

January 2010: PerkinElmer submitted the first draft of the Supplemental Investigation Work Plan to conduct additional off-site shallow groundwater and vapor intrusion work. The purpose was to reassess the vapor intrusion pathway in the off-site areas using a comprehensive approach according to current EPA vapor intrusion guidance. Sampling events that were to be completed included:

- Shallow groundwater and monitoring well sampling
- Exterior soil gas sampling
- Residential In-home sampling – basement air, sub-slab soil gas, basement sump water sampling, sump air sampling and ambient air sampling conducted in spring (wet period), summer and winter.

- August 2010 – April 2011: DNR continued to engage with PerkinElmer throughout this timeframe and provided multiple comments on the Supplemental Investigation Work Plan to PerkinElmer.
- April 2011: After several revisions, DNR approved the Supplemental Investigation Work Plan to conduct shallow groundwater sampling. Burns & McDonnell sent revisions to vapor intrusion work plans.
- June/July 2011: Burns & McDonnell obtained an access agreement with the Housing Authority of St. Louis County and St. Louis County to install 28 temporary groundwater wells in the residential neighborhood. These monitoring wells were installed July 2011.
- June 20, 2011: Burns & McDonnell submitted plan revisions in response to February, 2011 DNR comments on the vapor intrusion work plans.
- Aug-Sept, 2011: Shallow groundwater was sampled from 28 temporary groundwater wells throughout the residential neighborhood.
- September 28, 2011: The EPA developed final health-based benchmarks for TCE, which is posted in the Integrated Risk Information System database. The residential air risk screening level is now 0.43 micrograms/cubic meter and the residential air action level is now 2.1 micrograms/cubic meter.
- November, 2011: Groundwater sampling results were reviewed and evaluated to develop in-home vapor intrusion sampling locations based upon location of the contaminant plume.
- January-March 2012: Vapor intrusion sampling plan was finalized after some revisions and clarifications.
- February 10, 2012: The EPA developed final health-based benchmarks for PCE, which is posted in the Integrated Risk Information System database. The residential air risk screening level is now 9.4 micrograms/cubic meter and the residential air action level is now 42.0 micrograms/cubic meter.
- April 30, 2012: PerkinElmer notified the Housing Authority of St. Louis County about vapor intrusion sampling to be conducted the week of May 1, 2012. DNR and DHSS requested Burns & McDonnell include information sheets, prepared by DNR and DHSS, to be sent to each resident location selected for in-home sampling. DNR sent separate information sheet to two private residences selected for in-home sampling.
- May 8-11, 2012: Burns & McDonnell conducted the first of three rounds in-home vapor intrusion sampling at 10 residences, which included seven homes and three apartments were sampled; five different volatile organic compounds evaluated during sampling. Samples collected from the following:

May 8-11, 2012: (continued)

- Basement Air
- Sub-slab soil gas - two locations (except slab-on-grade buildings)
- Sump water; and
- Sump air (headspace air above sump water air/water interface)

June 29, 2012: DNR received data from May 2012 sampling event and began data evaluation.

July 13, 2012: DNR sends May 2012 data to DHSS for evaluation and scheduled a meeting with DHSS and EPA to discuss the results further.

July 27, 2012: DHSS notified DNR via letter that exposure is likely occurring inside two homes that were sampled in May 2012. DHSS recommended that action be taken as soon as possible to mitigate the risk to residents. DNR communicated this information to EPA immediately upon receipt of the letter and discussed referring the site to EPA for time critical removal.

July 31, 2012: DNR officially referred the off-site Chicago Heights Boulevard VOC Plume Site to EPA for a time-critical removal action to mitigate potential exposure threat to residents.

August 2, 2012: DNR sent sample result letters to Housing Authority of St. Louis County, Primm Place Properties LLC (apartment owner), and the 10 residents whose homes were sampled.

August 9, 2012: The Housing Authority of St Louis County held a meeting at the 1st Baptist Church of Elmwood in Overland. Representatives from the DNR, the DHSS, the U.S. EPA Region 7, and the Agency for Toxic Substances and Disease Registry attended the meeting to provide information and answer questions.

August 21-24, 2012: Burns & McDonnell conducted second round of in-home sampling in residential neighborhood. For the second round, additional sampling was recommended to require main living area indoor air samples to be collected and four ambient (outdoor air) locations to be sampled.

September 7, 2012: Burns & McDonnell submitted second round sampling results which showed airborne concentrations similar to the first round data and confirmed the presence of contaminants.

September 11, 2012: The DNR referred the on-site Missouri Metals Shaping Company facility to EPA due to EPA's expanded regulatory ability to take expeditious remedial action.