

Health Consultation

ROCK HILL CHEMICAL COMPANY
(a/k/a RUTLEDGE PROPERTY SUPERFUND SITE)

ROCK HILL, YORK COUNTY, SOUTH CAROLINA

EPA FACILITY ID: SCD980844005

NOVEMBER 5, 2008

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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Prepared By:

Site and Radiological Assessment Branch
Division of Health Assessment and Consultation
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry

Statement of Issues

In 1995, the U.S. Environmental Protection Agency (EPA) issued a unilateral administrative order requiring implementation of remedial action to address groundwater impacted by operations at the Rutledge Property Superfund Site, Rock Hill, South Carolina. By the end of the year, a groundwater extraction system went online and began removing trichloroethylene (TCE), 1,2-dichloroethylene (1,2-DCE), vinyl chloride (VC) and manganese. During annual monitoring, the gasoline constituent methyl-tertiary-butyl ether (MTBE) was discovered, with the source determined to be a leaking underground storage tank at a nearby auto service station.

Implementation of pulse-pumping in 2004 resulted in an increase in TCE concentration in monitoring well MW-03SH. The area of the groundwater plume between the MW-2 cluster and the pumping well remain above drinking water standards. However, since 1995, the system has been operating as designed, with contaminant trend analysis showing the contaminant concentrations have appeared to reach stable conditions. Some monitoring wells have reached steady-state conditions above drinking water standards.

EPA is considering ceasing operation of the extraction system and monitoring the groundwater contamination for rebound, with potential for amending the remedy to monitored natural attenuation.

EPA asked the Agency for Toxic Substances and Disease Registry (ATSDR) to comment on whether stopping the current pump and treat system would result in a health hazard to the population in the vicinity of the site.

Discussion

Results from the latest annual sampling round in June 2007 detected TCE, cis1,2-DCE, vinyl chloride and MTBE in the MW-2 cluster and pumping well (RW-01) at a maximum of 270 micrograms per liter (ug/L), 360 ug/L, 9 ug/L and 16 ug/L, respectively [ATSDR 2008].

These concentrations exceed federal drinking water standards. Levels of DCE, VC, and MTBE do not exceed ATSDR comparison values, except in the case of vinyl chloride exceeding a 1E-06 theoretical cancer risk equivalent concentration of 0.03 ug/L. The maximum concentration of VC (9 ug/L) was below 30 ug/L, equivalent to the higher end of the “acceptable risk” range (1E-4 cancer risk) as defined in the National Contingency Plan. No ATSDR comparison value or EPA oral reference dose currently exists for TCE, however EPA has a provisional oral cancer slope factor and has derived a 1E-06 theoretical cancer risk equivalent concentration of 1.7 ug/L in drinking water, corresponding to a 1E-04 cancer risk equivalent concentration of 170 ug/L.

The latest 2007 annual monitoring report for the Rutledge Property Superfund Site indicates that “there are no receptors for the contaminants in the groundwater at the site” implying that no one is using the groundwater as a drinking water source [ATSDR 2008]. This would imply that there is no current groundwater exposure, which eliminates the potential for adverse health effects and need for further analysis of the health implications of exposure to contaminated groundwater at the Rutledge site.

Buildings overlying plumes of volatile organic compounds can experience vapor intrusion into building indoor air, resulting in exposure to building occupants. Many factors affect the likelihood of vapor intrusion from groundwater, including subsurface conditions, contaminant concentrations, building characteristics and depth to groundwater. Addressing potential vapor intrusion issues is beyond the scope of this Strike Team response. However, according to verbal communications with EPA, an analysis of vapor intrusion issues was conducted and found not to be of concern.

Conclusions and Recommendations

ATSDR supports restoration of groundwater to beneficial use; however, the decision to stop groundwater extraction and shift to long-term monitoring is a regulatory decision and beyond the scope of ATSDR's mission.

It would appear that the remedy is in a phase where pump and treat is not effectively reducing groundwater contaminants, with concentrations remaining relatively stable and in some cases slightly increasing. It is apparent that the contamination will remain in the groundwater for some time until the compounds naturally attenuate or meet performance standards due to active remediation.

There appears to be no consumption of contaminated groundwater. Therefore, **there is no exposure pathway and no potential for a public health hazard. It would appear that the decision to stop operating the groundwater extraction system would not create a hazard for the surrounding population.**

This conclusion is conditional on the accuracy of the information provided, including:

- 1) No private wells are in use in the area of the groundwater plume.
- 2) Existing private wells are capped or physically modified so they cannot be used.
- 3) Installation of new private drinking water wells in the area of the plume is prevented by institutional controls such as a deed restriction.

Contaminant trends show only minor fluctuations from year-to-year [ATSDR 2008]. Although statistical analysis has shown that steady-state has been reached in several wells, pulse-pumping has demonstrated an increase in concentration. Future monitoring is recommended because there is the potential for concentrations to increase and the plume boundary to expand if active remediation is halted.

ATSDR recommends that the appropriate regulatory agency collect necessary information to confirm that current consumption of contaminated groundwater at the Rutledge site is not ongoing (i.e. public water supply and private wells) and future consumption (i.e. installation of new wells or redevelopment of existing wells) is prevented, in order to minimize the potential for exposure.

Should exposure situations change or relevant new information becomes available, ATSDR will revisit its conclusions and recommendations.

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References

[ATSDR] Agency for Toxic Substances and Disease Registry. 2008. September 25th fax from Carl Blair, Division of Regional Operations/ATSDR, to Danielle Langmann, Division of Health Assessment and Consultation/ATSDR, containing SynTerra Corporation's Annual Monitoring Report for 2007 along with data tables for the Rutledge Property Superfund Site. Atlanta: US Department of Health and Human Services.