

Burke County Clarke Road MSWL September 21, 1999

Introduction

The Environmental Protection Division (EPD) asked the Georgia Division of Public Health (GDPH) to conduct a public health investigation at the Clarke Road Municipal Solid Waste Landfill (MSWL) in Waynesboro, Georgia. EPD is concerned about possible adverse health effects caused by past, present and future exposures to environmental contamination from the landfill. The cooperation between EPD and GDPH was initiated through a memorandum of agreement for GDPH to address public health hazards at any Georgia sites when EPD is concerned about environmental contamination releases from a site it regulates.

Site Description and History

The landfill opened in 1975 and is still in operation. This landfill has two areas which accept waste, one cell for municipal and the other for construction and demolition waste. The homes along the southern border of the site were reportedly built around 1978.

Several residences are in the area near the landfill, including seven homes which border the site along the southern border. The nearest residence is a home where contamination was detected in the private well. This home is about 1,500 feet from the border of the landfill. At least seven private wells are within a mile of the landfill. The number of individuals who reside in the area around the landfill has also been investigated.

Environmental Sampling

EPD and the consultant for Burke County, Tribble and Richardson, Inc. (T&R) collected drinking-water well samples on May 12, 1997, at seven residences near the landfill. A sample was also taken from the one potable well on the landfill property.

One private well test indicated the presence of contamination in both the split samples. The county valved off the contaminated well and connected the residence to an alternative supply of water on May 30, 1997.

After further efforts by T&R to characterize the direction of flow and the extent of off-site contamination, GDPH and EPD asked that all residences be retested for

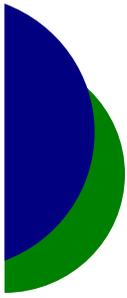
private well-water contamination. These samples were taken on January 2, 1999, and only the private well which was previously affected showed measurable levels of contamination.

Results

All four contaminants detected in the private well sample were volatile organic compounds (VOCs), including methylene chloride, 1,1-dichloroethane, tetrachloroethene, and cis-1,2-dichloroethene. Two compounds were detected at levels above the appropriate maximum contaminant levels (MCL): methylene chloride recorded at 7.5 parts per billion (ppb) and tetrachloroethene at 7 ppb. The second round of samples on this well indicated that both these contaminants were still present but at slightly lower levels. Whether the contamination is directly associated with the landfill or with another source has not been clearly determined.

Discussing the potential for adverse health effects due to exposure to environmental chemicals is best done by evaluating human exposure pathways. Pathways are generally evaluated as on site and off site and by the media which are contaminated. Because on-site exposures are not a concern at this site, only off-site exposure pathways were discussed. The only environmental medium shown to be contaminated off site is groundwater. A completed exposure pathway was found at one residence, and potential exposure pathways may exist in the future.

The two contaminants detected in this residence's well were above the MCL. Levels of exposure above these values do not indicate that adverse health effects can be expected. Because past exposures may have occurred, the contaminants require discussion. Even though some of these compounds exist at levels above comparison values, including MCLs, the contaminants can only affect someone who is actually exposed and if the exposure results in high enough doses for adverse effects to occur. For that reason, focus is placed on contamination for which exposure may have occurred off site and discussion involves only chemicals that may pose a



CHEMICAL HAZARDS PROGRAM
Environmental Health Branch
Georgia Department of Community Health
Atlanta, GA



Threat to public health if exposure was high enough to possibly cause adverse health effects.

Methylene Chloride: The highest recorded level of methylene chloride in private well water was 7.5 ppb. The MCL for this contaminant is 5 ppb, and the ATSDR comparison value is 5 ppb. This comparison value has been set for carcinogenic substances. The Department of Health and Human Services (DHHS) has determined that methylene chloride may reasonably be anticipated to be a carcinogen. The cancer risk due to exposure to this contaminant was estimated for 19 years and was not found to pose a significant increase in cancer risk.

Tetrachloroethene: The highest recorded level of tetrachloroethene in private well water was 7 ppb. The MCL for this contaminant is 5 ppb, and the ATSDR comparison value is 0.7 ppb. This comparison value has been set for carcinogenic substances. DHHS has determined that tetrachloroethene may reasonably be anticipated to be a carcinogen. The cancer risk due to exposure to this contaminant was estimated for 19 years and was not found to pose a significant increase in cancer risk.

A potential exposure pathway exists in the future through ingestion of groundwater if contamination present near the currently contaminated well migrates to other wells in the area. Further characterization by T&R of the nature and extent of groundwater contamination in the vicinity

of the landfill will provide better insight into the possibility that other private wells in the area could be impacted.

Conclusions

This site poses ***no apparent public health hazard*** because of the following reasons: past human exposure to contaminated media was evaluated and the estimated exposure dose did not exceed an ATSDR chronic MRL; data are available for all environmental media to which humans may have been exposed, and only groundwater is contaminated off site where exposure may occur; and no community-specific health complaints indicate that the site has had an adverse impact on human health.

Recommendations

- To insure that residents are not exposed to contaminants present in the single impacted private well, EPD should continue to recommend that this water source not be used for consumption or any other use where humans may come into contact with the water.
- Because other private wells could be impacted by groundwater contamination, EPD should continue to require monitoring of private wells in the area at least yearly until the area is remediated.
- Because the source of contamination is unclear and private wells could be contaminated in the future, EPD should continue to require that the extent of off-site groundwater contamination is sufficiently delineated, and the risk posed to the private wells by contaminants present in on-site groundwater should be determined.