Brooks County Quitman SR33 MSWL
May 10, 2006

Introduction
Regulated contaminants were detected in groundwater at the boundary of the Quitman SR 33 Municipal Solid Waste Landfill (Quitman Landfill) site. The landfill is located within 100 feet of residential property with individual water wells. In addition, methane has been detected beneath the ground surface on residential property. In response, the Georgia Environmental Protection Division (GEPD) requested that the Georgia Division of Public Health (GDPH) conduct an investigation to assess whether residents using wells near the landfill may be exposed to contaminants in groundwater, and to methane gas at levels of health concern.

Site Description and History
The Quitman Landfill is a closed municipal landfill. The site is located at the corner of state Highway 33 and Johnson Short Road south of Quitman, in Brooks County, Georgia, approximately eight miles north of the Florida border. The site has limited access; a fence surrounding the landfill encloses approximately four acres including the mound and a sedimentation pond at the south end.

The Quitman Landfill began operations in 1969 for permitted disposal of municipal solid waste including household garbage, animal carcasses, wood, stumps, lumber, and metal. Liquid wastes from a packing company were also disposed of at the landfill. The landfill was sectioned for the various types of wastes it was to receive. Waste was disposed of at various depths, including at land surface. Initial deposits were made at the northwestern corner of the landfill.

Since closing in 1994, GEPD has conducted regular site inspections and is requiring Brooks County to continue groundwater and methane monitoring, and soil gas sampling. Beginning in 1995, volatile organic compounds, including vinyl chloride, were detected in groundwater beneath the landfill. Residents using individual water wells live southwest of the landfill in the direction of groundwater flow. Additionally, soil gases including methane have migrated off-site onto adjacent residential property. GEPD is concerned about adverse health effects from exposure to contaminated well water, and vapor intrusion into homes.

Environmental Sampling
Approximately 500 samples were taken from 20 on-site monitoring wells, two off-site monitoring wells, and six residential water wells during 1994-2005. Samples were obtained using U.S. Environmental Protection Agency (EPA) approved methods, and analyzed at state certified laboratories.

Results
Soil Gases
Landfill gases have been detected on site, and current remediation activities are attempting to minimize landfill gases migrating off site.

Methane has been detected 100 feet off-site on private property to the east. A methane vent was installed on private property in1999, and is regularly monitored. Three additional methane vents were installed off site to the west in 2005.

On-site Groundwater
Vinyl chloride, benzene, and cadmium have been detected above comparison values (CVs) on site. Comparison values are concentrations of chemicals that can reasonably (and conservatively) be regarded as harmless, assuming the most likely conditions of exposure Vinyl chloride has been detected consistently since 1995 in several wells at the western boundary of the site. The highest concentration of vinyl chloride detected was 17.0 parts vinyl chloride per billion parts water (ppb) in 1998 from groundwater monitoring well 14A. Benzene has been detected intermittently in a few wells on the western and southern perimeters. The highest level of benzene detected was 5.3 ppb in a well on the southern boundary of the landfill. Cadmium was detected above a CV (6.6 ppb) once in 2004 in monitoring well 14B on the western boundary. All sampling results show a general trend of decreasing concentrations since 2001.

Off-site Groundwater
Although off-site groundwater sampling data are available from 2002, contaminants were not detected off-

site until 2004. Vinyl chloride was detected in one sample from an off-site monitoring well southwest of the landfill in November 2004. Subsequent sampling did not detect any contaminants in any off-site wells.

Cadmium and lead were detected in residential wells below CVs. Lead was detected in all residential wells in June 2005 at levels below the U.S. Environmental Protection Agency's Maximum Contaminant Level (MCL) of 15 ppb. No other CV currently exists for lead in drinking water; therefore, the MCL is used. Exposure to lead at this level is not considered to result in adverse health effects.

The highest level of cadmium found in one residential well in June 2005 was 5 ppb. This is at the MCL and above the CV for children of 2 ppb for intermediate exposure (more than two weeks but less than one year).

Conclusions

GDPH has determined that this site poses ***no apparent public health hazard*** because human exposure to contaminated groundwater is occurring, but the exposure is below a level of health concern. The potential for exposure in the future is unlikely because current remediation activities are sufficient to protect public health from future exposure.

Recommendations

- Continue current residential well sampling, groundwater monitoring and remediation activities to ensure that future exposures do not occur from contaminated groundwater or vapors and methane gas from the Quitman Landfill.
- GDPH will review additional data if it becomes available and provide documents, including a follow-up health consultation, if appropriate.