

Bucks Harbor FUDS Groundwater Monitoring

Project Characteristics:

- *Long-term groundwater monitoring program for Volatile Organic Compounds (VOCs)*
- *Groundwater sampling from monitoring wells, residential drinking wells, and public supply wells*
- *Sub-slab soil vapor and indoor air sampling from residential and commercial properties*



Woods Hole Group was contracted by the US Army Corps of Engineers (USACE) to support the long-term monitoring program at the Bucks Harbor Former AFRTS and GATR Site located in Machiasport, Maine. This site falls under the Defense Environmental Restoration Program (DERP) Formerly Used Defense Sites (FUDS) program, property no. D01ME0048602. The U.S. Air Force (USAF) operated a radar tracking station (RTS) on the site from 1954 to 1984. During this time period, waste solvents were reportedly disposed to the ground. Since 1998, USACE monitored the nature and extent of volatile organic compounds (VOCs) in the groundwater with the primary contaminant of concern being trichloroethylene (TCE). USACE has been working with the Restoration Advisory Board (RAB), the town of Machiasport, and the Maine Department of Environmental Protection (MEDEP) to manage the site.

Woods Hole Group monitored the site along with subcontract partner AMEC since April 2010. The existing monitoring program involved collecting groundwater samples from select monitoring wells, residential drinking wells, a public water supply well, and a groundwater seep on a tri-annual basis (spring, summer, and fall). Several residences have VOC concentrations exceeding the State of Maine Maximum Exposure Guidelines (MEGs) .

In 2011, a trend analysis for VOCs using current and historical groundwater data for the site determined that VOC concentrations were relatively stable or slightly decreasing across the site. Based on these results, recommendations were made to reduce the sampling frequency from tri-annual to annual sampling, and remove a number of locations where VOC concentrations were consistently low or non-detect. In 2012, the USACE modified the long-term monitoring program based on these recommendations, which significantly reduced the monitoring program costs.

In 2012, the team performed sub-slab soil vapor and indoor air sampling to determine whether a pathway for VOCs from groundwater to soil vapor to indoor air existed for residential and commercial buildings at the site. Analysis of the groundwater, soil vapor, and indoor air analytical results showed that completed exposure pathways may exist.

In 2013, several wells will be redeveloped and retrofitted with FLUTE Liners to isolate fractures in each well and allow sampling from specified intervals. Woods Hole Group and AMEC continue to work with the USACE and stakeholders to determine next steps for the site.