Massachusetts
Massachusetts Military Reservation

Facility and Location

The Massachusetts Military Reservation (MMR) is a multi-use facility with tenants including Otis Air National Guard Base, Camp Edwards, Coast Guard Air Station Cape Cod, and a Veteran Affairs National Cemetery. The site was designated as a National Priorities List site in 1989 and has a Federal Facility Agreement. The Installation Restoration Program (IRP) at MMR is conducting limited perchlorate groundwater sampling at two plumes: Landfill-1 (LF-1) and Chemical Spill-19 (CS-19). The LF-1 plume emanates from the base's former main landfill where munitions items were reportedly disposed. The CS-19 plume comes from a munitions disposal area. The perchlorate submission from the Air Force Center for Engineering and the Environment Major Command only applies to those activities being conducted under the Defense Environmental Restoration Program for MMR.

Media Sampled and Findings

Groundwater — In 2010, two of four samples detected perchlorate from 0.05 to 0.07 ppb. In 2009, 11 of 14 samples detected perchlorate from 0.04 to 0.77 ppb. In 2008, 9 of 14 samples detected perchlorate from 0.04 to 0.59 ppb. In 2007, 18 of 38 samples detected perchlorate from 0.07 to 2.5 ppb. Prior to 2007, over 11,585 samples were taken and reported a high detection of 730 ppb. The IRP sampled for perchlorate in groundwater associated with the CS-18, CS-19, and LF-1 sites. CS-19 groundwater perchlorate detections never exceeded 3 ppb and are commingled with a cyclotrimethylenetrinitramine (RDX) plume that is being monitored. CS-18 groundwater sampling has indicated sporadic perchlorate detections in the 1-3 ppb range with no defined plume.

Soil — In 2009, 66 of 176 samples detected perchlorate from 0.09 to 5,560 ppb. In 2008, ten samples reported no detection. In 2007, 25 of 237 samples detected perchlorate from 0.27 to 1,270 ppb. Prior to 2007, over 3,615 samples were sampled for perchlorate and reported a high detection of 134,000 ppb. Perchlorate was detected within installation boundaries with the highest concentration at 17.7 ppb (LF-1). Concentrations at LF-1 have attenuated below the Massachusetts Maximum Contaminant Level (2 ppb). The perchlorate detections at LF-1 were within the volatile organic compound plume for which a remedial system is operating.

Appropriate Actions

Groundwater samples taken prior to 2007 were found above the EPA and DoD Preliminary Remediation Goal of 15 ppb. Soil samples were above the 50 ppb Upper Contamination Limit screening level suggested by Massachusetts Department of Environmental Protection (MDEP). This description (and data entered) pertains only to the remediation at MMR. There is a separate investigation/cleanup program, called the Impact Area Groundwater Study Program, being conducted by the Army at MMR (specifically Camp Edwards) where much more extensive perchlorate sampling and perchlorate-driven remedial actions have occurred and are reported separately by the Army. Limited future sampling is scheduled under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Groundwater contaminated with RDX and perchlorate is being remediated through a groundwater treatment

system under the Impact Area Groundwater Study Program. Removal actions have been completed for contaminated soils. All investigations and actions are fully coordinated with EPA Region 1 and the MDEP.

Previous samples taken at the CS-19 Source Area exceeding the DoD standard are soil samples taken after unexploded ordnance items were ‘blown-in-place’ (BIP). Soil from the BIP area is drummed for off-site disposal.