

DAVIDSONVILLE FUEL OIL SPILL

SS-11

Joint Base Andrews, Davidsonville Transmitter Annex

January 2018

BACKGROUND

The Davidsonville Fuel Oil Spill Site (SS-11) at the Davidsonville Transmitter Annex is located approximately 15 miles northeast of Joint Base Andrews (JBA) in Davidsonville, MD. While Site SS-11 occupies approximately 900 acres, the actual study area covers approximately 18 acres. In 1984, a fuel oil leak originating from an underground storage tank (UST) and associated fuel lines (in operation from 1957 to 1984) was discovered. More significant impacts were noted from nearby above-ground storage tanks (ASTs) and fuel lines for the generator building.

Cleanup measures at the site included excavation of the original tank as well as the removal of the ASTs, fuel lines, and all visually contaminated soil under Maryland Department of the Environment (MDE) oversight in 2002. Some product saturated materials were under the east foundation of the generator building and could not be removed, so a recovery well (sump) was installed to obtain product from this area with assistance of surfactants and vacuum recovery. Continued petroleum product in the sump led to the installation and operation of a solar-powered petroleum product skimmer in 2004-2005. Groundwater monitoring and bi-weekly well gauging continue at the site.

Two separate sampling events in 2005 revealed chlorinated solvents such as trichloroethylene (TCE) in groundwater above regulatory limits. An expanded site investigation (ESI) was conducted in 2006-2007, but the plume was not delineated.

A series of investigations (2008 to 2011) determined that the plume of solvent contamination, TCE and TCE degradation products, extended west of the building compound and across at least 17 acres of Air Force property.

CHALLENGES

The Remedial Investigation (RI) performed by URS under the FY08 Performance Based Contract (PBC) found that the plume was much larger than previously thought. A series of field investigation efforts showed the contamination of groundwater covered over 17 acres and reached depths of over 80 feet below the ground surface. Although there is no impact on any drinking water wells, the large extent of contamination in multiple geological units may prove a difficult challenge to remediate. A follow on to the RI was performed by Weston Solutions in 2012 and 2013, who prepared the final RI using the URS field data. While Weston concluded that the extent of contamination at the site had been adequately defined in the RI phase to support a Feasibility Study (FS); they identified several minor data gaps that should be addressed during the FS. These data gaps included additional groundwater and soil sampling for VOCs at specific site locations, and sub-slab soil vapor sampling for VOCs at several locations within Building 1 Wing D, and were addressed in the July 2014 Data Gap Investigation Addendum to the FS.



Figure 1: SS-11 TCE Plume

PERFORMANCE BASED APPROACH

A performance-based contract was awarded in FY11 to address this site. The contract included the RI, FS, Proposed Plan, Record of Decision, Remedial Design, Remedial Action - Construction, and Remedy in Place (RIP). The Final RI for the site was completed in April 2013 after review by the MDE Federal Facilities Division (FFD); and the Final FS was completed in August 2014. A Remedial Action Work Plan (RAWP) was completed in May 2016 and baseline sampling and injection activities completed in October 2016. The Final ROD was signed in February 2017, with the selected remedy being the injection of a mixture of ISB and ISCR carbon substrates, MNA for petroleum contaminants and, if necessary as a contingency, ISCO injections to address the petroleum contaminants. The first quarterly sampling event was carried out in February 2017, and the 6-month RA-O groundwater sampling event completed in June 2017. The results of the sampling events indicate that to date, the remedial action objectives are being achieved within the timeframe, approximately 20 years, dictated in the ROD.

RISK DRIVERS

Contaminants: Petroleum hydrocarbons and chlorinated solvents (TCE, cis-1,2-DCE, and VC)

Impacted Media: Groundwater, subsurface soil

Exposure Pathways Completed: Construction workers

Current Land Use/Surface Cover: Industrial

Reasonably Anticipated Land Use: Industrial

Relative Risk: Medium