FORMER DRY CLEANER – BLDG. 1623

SS-27 (Formerly AOC-31)

Joint Base Andrews January 2018

BACKGROUND

Building 1623 (formally designated Area of Concern 31) was historically located on the northwest corner of Arnold Avenue and Arkansas Road. It operated as an Army Air Force Exchange Service (AAFES) dry cleaning facility from the early 1980s to 1996. Dry cleaning and spot removal were performed with tetrachloroethene (PCE) and chloroform, respectively. Prior to its operation as an AAFES dry cleaning facility, the building was used as a snack bar and a TV repair shop. Building 1623 was demolished in 1996 when the dry cleaning operations ceased.

The 2006 Preliminary Assessment/Site Investigation (PA/SI), and the 2007 Phase I and 2008 Phase II Remedial Investigations (RIs), delineated the nature and extent of solvents in soil and groundwater at SS-27. The RIs used the EPA's Triad management approach, which integrated a conceptual site model with real time data to expedite the development of cost-effective decisions for the site. The 2009 Feasibility Study (FS) identified and evaluated four remedial action alternatives for the contaminated soil and groundwater.

CHALLENGES

A groundwater watershed divide between Piscataway Creek and Meetinghouse Branch exists directly north and east of SS-27. As a result, the majority of contaminated groundwater at SS-27 ultimately flows southeast toward Piscataway Creek.

Joint Base Andrews (JBA) intends to relocate the Community Development Plan administrative offices to an area encompassing the site, emphasizing the need for expedient remediation of SS-27 to ensure the site will be available and suitable to support the JBA mission.

PERFORMANCE-BASED APPROACH

The 2011 Record of Decision (ROD) listed PCE, trichloroethene (TCE), cis-1,2-dichlorethene (DCE), vinyl chloride, and chloroform as the contaminants of concern for SS-27. The ROD selected excavation of contaminated vadose zone soil, enhanced anaerobic bioremediation with a bioaugmentation contingency for contaminated groundwater, and land use controls as the remedy for the site.

The Remedial Action Work Plan for SS-27 was completed in 2011. The remedial action objectives (RAOs) for soil were achieved in 2011 when 651 tons of contaminated vadose zone soil was excavated from the site. The RAOs for groundwater has resulted in repeated substrate injections to support the anaerobic bioremediation of the contaminated groundwater.

Between 2011 and 2015, four substrate groundwater injections were performed at SS-27. The 2011 injections consisted of carbon substrate and zero-valent iron to promote enhanced anaerobic bioremediation. As a result of the 2011 injection, remedy in place for SS-27 was achieved in 2012. The 2013 injections provided supplemental carbon substrate. In 2014, a contingency injection event included carbon substrate, bioaugmentation, and buffering agents. In 2015, a polishing injection to optimize remedy performance consisted of additional carbon substrate and bioaugmentation.

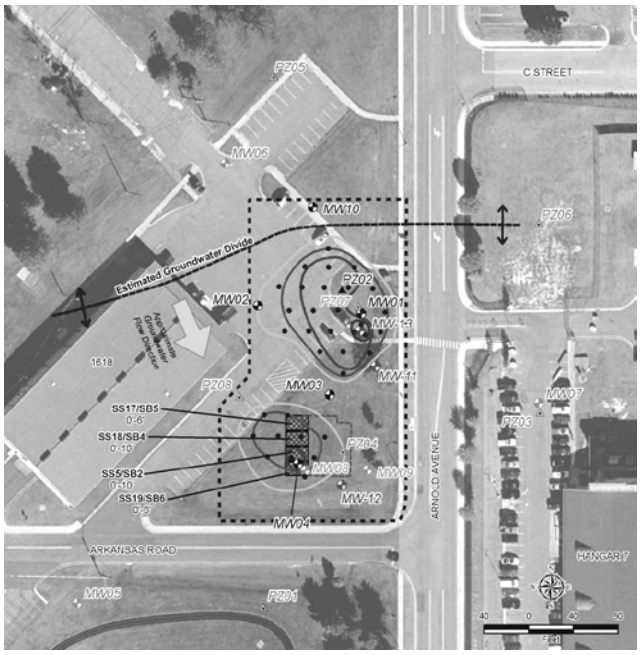

Figure 1: SS-27 and PCE Plume

The associated groundwater monitoring program consists of semi-annual sampling, which began 18 months after the initial substrate injection event, and will continue until the RAOs for groundwater are achieved. Remedial Action-Operation is on-going at SS-27 and is expected to continue until at least 2019 with Site Closure (SC) expected at that time.

RISK DRIVERS

Contaminants: PCE, TCE, DCE, vinyl chloride, and chloroform
Impacted Media: soil and groundwater
Exposure Pathways Completed: construction workers, future commercial workers
Drainage: Piscataway Creek and Meetinghouse Branch
Current Land Use/ Surface Cover: industrial (aircraft operations and maintenance)
Reasonably Anticipated Land Use: commercial/administrative
Relative Risk: medium