

HANGAR 13

SS-22

Joint Base Andrews

April 2022

BACKGROUND

Hangar 13 (Site SS-22) is located on the eastern side of Joint Base Andrews (JBA). In early 1994, free-phase product and petroleum contaminated soil and groundwater were encountered during construction activities. The contamination was the result of 1950s era leaking underground storage tanks (USTs) associated with aircraft refueling activities. The USTs and piping systems were demolished in 1960. Previous interim actions included the use of vacuum trucks, manual petroleum product bailing, and passive recovery. A 2001 removal action excavated 940 cubic yards of petroleum-impacted soil near the former USTs. At the time, a groundwater extraction system was planned; however, the lack of water returning to the excavation led the pump-and-treat system installation to be aborted.

CHALLENGES

SS-22 has complex shallow subsurface hydrogeology. The complexity is most likely due to soil backfilling activities and regrading that has occurred in the area for the past 50 years. This is exemplified by the 17-20 foot deep excavation in 2001 that did not fill with groundwater for over a week while a nearby well indicated groundwater was 10 feet below the ground surface. Other challenges include underground utilities and the possibility that they may serve as preferential contaminant migration pathways. Free-phase product persists at the wells despite the use of manual bailing, passive recovery, surfactant injections, vacuum recovery, and injections of an oxygen releasing compound.

PERFORMANCE-BASED APPROACH

SS-22 was grouped with ST-14 in a performance-based contract (PBC) awarded in 2005 to restore both sites simultaneously. The objectives of this PBC were to prevent further migration of groundwater contaminant plumes, eliminate identified source areas, and sufficiently treat and demonstrate degradation of contaminants in the groundwater. The contract took both sites from Proposed Plan (PP) through Record of Decision (ROD), Remedial Design (RD), Remedial Action - Construction (RA-C), to Remedy-in-Place (RIP) with subsequent monitoring of contaminant concentrations. The overall goal of the PBC was to return groundwater quality to beneficial use within a reasonable timeframe.

The PBC expired in 2010 and JBA still had liability concerns associated with the site. Additional investigative activities and remedial actions were necessary beyond the 2005 PBC.

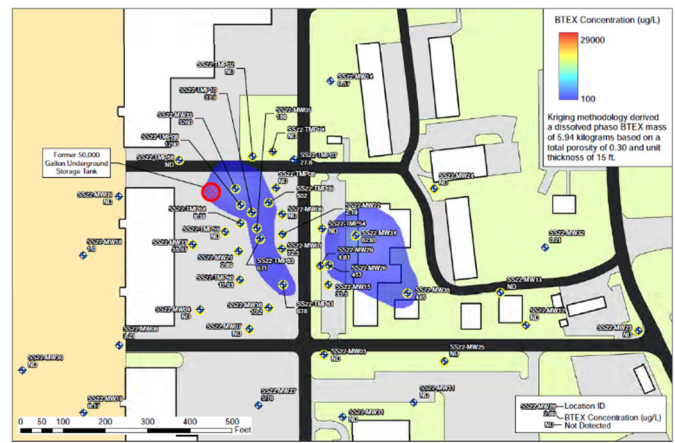


Figure 1: Site SS-22 and Former Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) Plumes

The 5-year review process occurred in 2010 and identified concerns with the effectiveness of the current remedy. Therefore, the Air Force awarded a new PBC in 2011 to ensure that the effectiveness of the remedy is improved, and the remedial objectives are achieved within the timeframe decided upon in the ROD. In May 2014, a multiphase extraction (MPE) system was installed as well as additional monitoring and extraction wells. A limited groundwater sampling event was conducted in August 2014 to document petroleum constituents in the groundwater. Operation and maintenance of the multiphase extraction system continued, with groundwater reports generated quarterly. The MPE system was shut down in September 2018 to evaluate remedial progress. According to data collected, over 95% of the petroleum hydrocarbons has been removed. In 2020 Documentation was presented to the Maryland Department of the Environment (MDE) to achieve Site Closure according to the Maryland Environmental Assessment Technology (MEAT) guidelines. In 2021, 14 wells were approved for abandonment. As of February 2021, the MDE OCP case related to this site has been closed. All remaining wells will be maintained in accordance with the Code of Maryland Regulations (COMAR) and kept for USAF monitoring, unrelated to the site case.

RISK DRIVERS

Contaminants: Petroleum constituents

Impacted Media: Groundwater and subsurface soil

Exposure Pathways Completed: Construction Worker exposure

Drainage: Charles Branch

Current Land Use/Surface Cover: Industrial

Reasonably Anticipated Land Use: Industrial

Relative Risk: Low