

EAST SIDE SERVICE STATION

ST-14

Joint Base Andrews

February 2013

BACKGROUND

Storage Tank Site ST-14 is located in the northeast quadrant of Joint Base Andrews (JBA) near Fetchet Avenue. The site was included in the Environmental Restoration Program (ERP) due to leakage from the underground storage tanks (USTs) and ancillary piping system associated with Building 3487, the former East Side Service Station.

In 1983, the USTs were removed and 20,000 gallons of gasoline was recovered from an excavation trench at the site. Subsequent studies delineated a commingled solvent plume extending from the flight line toward the northeast. A former hangar and vehicle wash rack were among several suspected sources for these solvent plumes. The trichloroethylene (TCE) and carbon tetrachloride that were detected appeared to originate from other sources to the west. The TCE plume has been confirmed to reach a tributary to Cabin Branch Creek, which eventually flows off of the installation. Concentrations detected in seeps into the creek were right at the Maximum Contaminant Levels (MCLs).

CHALLENGES

Multiple contaminant source zones over many acres and a large commingled solvent and groundwater plume under numerous buildings present technical challenges that must be overcome.

The restoration strategy has required several modifications throughout the remediation process. Several areas have not seen adequate reductions in contaminant levels. Probable explanations include improperly characterized or even unidentified source zones, unanticipated groundwater flow directions, and/or unmonitored contaminant migration pathways. Other challenges include possible gaps in the monitoring well network.

PERFORMANCE-BASED APPROACH

A performance-based restoration (PBR) contract for ST-14 (grouped with SS-22) was awarded in 2005. Objectives of this PBC were to prevent further migration of plumes, eliminate/treat identified source areas, and to sufficiently treat and demonstrate degradation of contaminants in groundwater. The overall goal was to return groundwater quality to beneficial use within a reasonable timeframe.

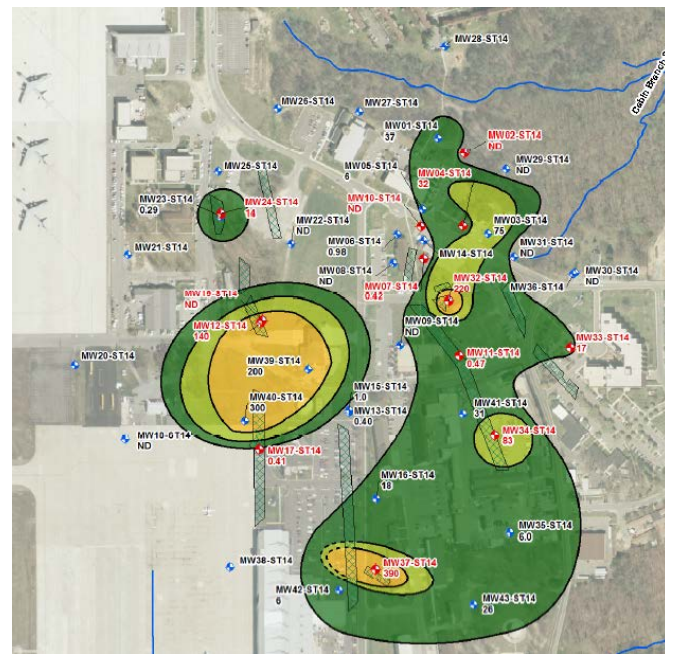


Figure 1: Site ST-14 with TCE Plume

The remedy was successfully designed and installed during that PBR contract, which expired in 2011; However, JBA still has significant environmental liability associated with this site. 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 PBR contract 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 Record of Decision (ROD). This process begins with an update to the Conceptual Site Model (CSM) in 2013, followed by a re-evaluation of the Remedial Design (RD).

RISK DRIVERS

Contaminants: TCE, carbon tetrachloride and petroleum constituents

Impacted Media: Groundwater

Exposure Pathways Completed: Human (construction worker) and Ecological

Drainage: Cabin Creek

Current Land Use/Surface Cover: Administrative, industrial, and open space

Reasonably Anticipated Land Use: Administrative, industrial, and open space

Risk: Medium