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TECHNICAL MEMORANDUM FOR SEQUESTERING AGENT LINE REMOVAL BUILDING  
780C NAS JACKSONVILLE FL  
4/23/2013  
CH2MHILL

# NAS Jacksonville – Building 780C Sequestering Agent Line Removal

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At the request of the U.S. Naval Facilities Engineering Command, Southeast (NAVFAC SE), AGVIQ-CH2M HILL performed removal of portions of a sequestering agent line associated with the former groundwater treatment/soil vapor extraction (GWT/SVE) system located at Building 780C at Naval Air Station (NAS) Jacksonville, Florida, on April 11, 2013. AGVIQ-CH2M HILL performed this work under SB RAC Contract No. N62470-08-D-1006, Task Order No. JM20.

## Background

During the 1970s and 1980s, painted aircraft and associated parts were chemically stripped inside Building 780 using organic solvents. Jet fuel tanks were reportedly frequently flushed and stripped outside the northwest corner of the building. The organic solvents used for stripping included 1,1,1-trichloroethane (TCA), trichloroethene (TCE), dichloromethane (methylene chloride), butyl acetate, and naphtha. Site assessment activities were previously performed by another contractor to delineate the extent of the soil and groundwater contamination at the site, which resulted in selection of GWT/SVE as the remedial alternative.

The GWT system consisted of one active groundwater extraction well (U3MW029) with a pneumatic well pump, an air compressor, a 500-gallon groundwater holding tank, a sequestering agent injection pump, a sequestering agent injection line and chemical holding tank, two centrifugal transfer pumps, an inlet bag filter, a two-stage shallow-tray low-profile air stripper, an air blower, and associated piping and instrumentation.

The SVE system consisted of six vapor extraction wells, a regenerative-type vacuum blower, a moisture separator, an inlet air filter, and associated piping and instrumentation. A thermal oxidation/acid scrubber (thermox) unit was used to treat the effluent air from the SVE system and the GWT air stripper unit prior to discharge to the atmosphere. The thermox unit consisted of a natural gas-fueled burner, a combustion air blower, a quench tower, a scrubber tower, a caustic injection pump, a 500-gallon caustic storage tank, two centrifugal pumps, and associated piping and instrumentation. The compressor, a blower, the air stripper, manifolds, piping, gauges, valves, and polyethylene tanks were housed in Building 780C.

In 2008, the Building 780C primary treatment system was decommissioned, and the tanks, thermox unit, and system components were disassembled, decontaminated, and removed for final disposition.

Sequestering agents are chemical additives that are used to minimize the precipitation of solids from water because precipitates can be deleterious to the operation of GWT systems. These chemicals are characterized as “Generally Recognized As Safe” (GRAS) substances under Title 21 Code of Federal Regulations (21 CFR). A sequestering agent was used as part of the GWT system process at Building 780C while the system was operational. The sequestering agent was stored in a tank within Building 780C and conveyed via above and below ground piping to the groundwater extraction well, where groundwater was pre-treated prior to being extracted. After the GWT system was deactivated, leaking was observed at various locations along the overhead sequestering agent line within Building 780, which is adjacent to Building 780C. Because the leaking sequestering agent line was no longer used, it was determined that its removal be completed promptly.

The sequestering agent line extends south approximately 90 feet from Building 780C through underground piping to Building 780. At Building 780, the line extends aboveground through a 2-inch metal pipe sleeve to roof height (approximately 30 feet above ground surface), where it runs west to the outside western wall of the building. The line runs through a metal pipe sleeve approximately 90 feet south along the outside roofline of Building 780, then turns east, passing through the interior of the building to its eastern side. Within the building, the sequestering agent line (polyethylene tubing) was not contained within the pipe sleeve, but traveled aboveground through open air. The sequestering agent line then extended an additional 36 feet south to the southeastern corner of Building 780, where it transitioned to 3/8-inch galvanized steel piping before descending vertically belowground, traveling approximately 15 feet east, and terminating in the extraction well.

### **Dismantling of exposed Sequestering Agent Line**

AGVIQ-CH2MHILL performed field activities on April 11, 2013 to remove the exposed sequestering agent line in Building 780. Approximately 70 feet of line was gravity drained to remove residual sequestering agent, (recovering less than one cup of liquid) and the line was removed. With prior authorization from NAS JAX, the recovered liquid was transferred to the industrial wastewater treatment plant via a nearby manhole. The removed tubing was rolled up and placed in the sequestering agent holding tank for future disposal when the remaining system infrastructure is decommissioned. 3/8-inch plugs were inserted into each exposed end of the remaining tubing where it was cut. Additional portions of the sequestering agent line may be removed at a later date as part of the decommissioning activities.