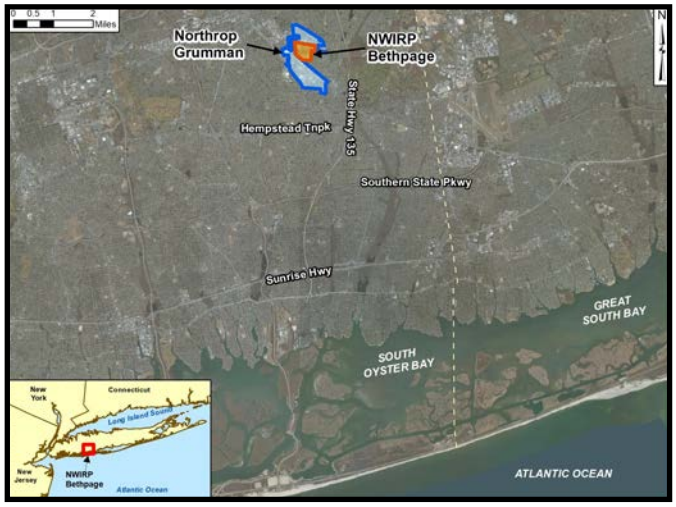
Naval Weapons Industrial Reserve Plant Bethpage
Preliminary Assessment/Site Inspection for 1,4-Dioxane and Volatile Organic Compounds

November 2019

At the former Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, a Preliminary Assessment/Site Inspection (PA/SI) is the first step to assess if 1,4-dioxane is present in site groundwater as a result of past operations. The Navy is working with the *New York State Department of Environmental Conservation (NYSDEC)* in developing sampling plans, interpreting results, and making decisions on actions, if needed, to address VOCs, 1,4-dioxane, and other environmental contaminants at NWIRP Bethpage. The Navy has completed the five sampling events to evaluate the concentrations of Volatile Organic Compounds (VOCs) and 1,4-dioxane in Bethpage groundwater and surface water over an approximate one-year period.

Background

NWIRP Bethpage was a 109-acre government-owned, contractor-operated facility. It was operated by Northrop Grumman (NG) and its predecessors, including Grumman Aircraft Engineering Corporation (Grumman) from 1942 until 1996. NWIRP's primary mission was the research, testing, design engineering, fabrication, and primary assembly of military aircraft.



General Location Map

The Navy is conducting a PA/SI to evaluate the potential release of 1,4-dioxane using the existing groundwater monitoring well network. As this compound is typically present with Volatile Organic Compounds (VOCs), we are also analyzing samples for VOCs.

Several VOCs have been identified in groundwater at the former NWIRP Bethpage facility related to the use of chlorinated and non-chlorinated solvents at the facility. Several other VOCs (such as toluene) have been identified in off-property areas that may or may not result from former NWIRP operations. In addition, 1,4-dioxane has been detected in off property groundwater, including VOC-impacted groundwater associated with the former NWIRP Bethpage. Because 1,4-dioxane was widely used in a variety of residential and commercial products, some of the 1,4-dioxane in groundwater may not be associated with industrial activities at the facility.

The PA/SI will evaluate 1,4-dioxane in groundwater at the facility. The objectives of this study are:

VOCs

- VOCs were used historically as solvents and degreasers at NWIRP Bethpage.
- VOCs are common in many household products (i.e. nail polish remover, laundry detergents, and paints).
- VOCs are components of diesel fuel and gasoline.

1,4-Dioxane

- Widespread use as a stabilizer in certain chlorinated solvents, paint strippers, greases, antifreeze, and waxes, including those used at NWIRP Bethpage.
- Also widely used in residential and commercial products (i.e. soaps, cosmetics, shampoos, and deodorants).
- The NYS Dept. of Health (NYSDOH) Maximum Contaminant Level (MCL) is 50 micrograms per liter (µg/L), however a NYSDOH MCL has been proposed with a recommended value of 1 µg/L.
- No federal (MCL) has been established for 1,4-dioxane in drinking water.

1) Are there additional VOCs in groundwater at the facility that warrant additional investigation?
2) Is there environmental evidence that the 1,4-dioxane identified in off-property groundwater originated at the former NWIRP Bethpage?

The VOC contaminated groundwater plumes emanating from the Navy and NG sites span more than 3,000 acres and are more than 700 feet deep. Currently, two Northrop Grumman groundwater production wells and three containment wells operate as part of an on-site containment system, which inhibit the migration of contaminants.

Sampling Results

The Navy sampled approximately 50 monitoring wells each in April, September and December 2018 and March and June 2019. During the sampling events, the Navy also collected 2 to 4 water samples from NWIRP recharge basins and the discharge from the Bethpage Community Park (BCP) Operable Unit (OU) 3 Interim Remedial Measures treatment system (BCP treatment system). The following is a summary of the results:

1,4-Dioxane

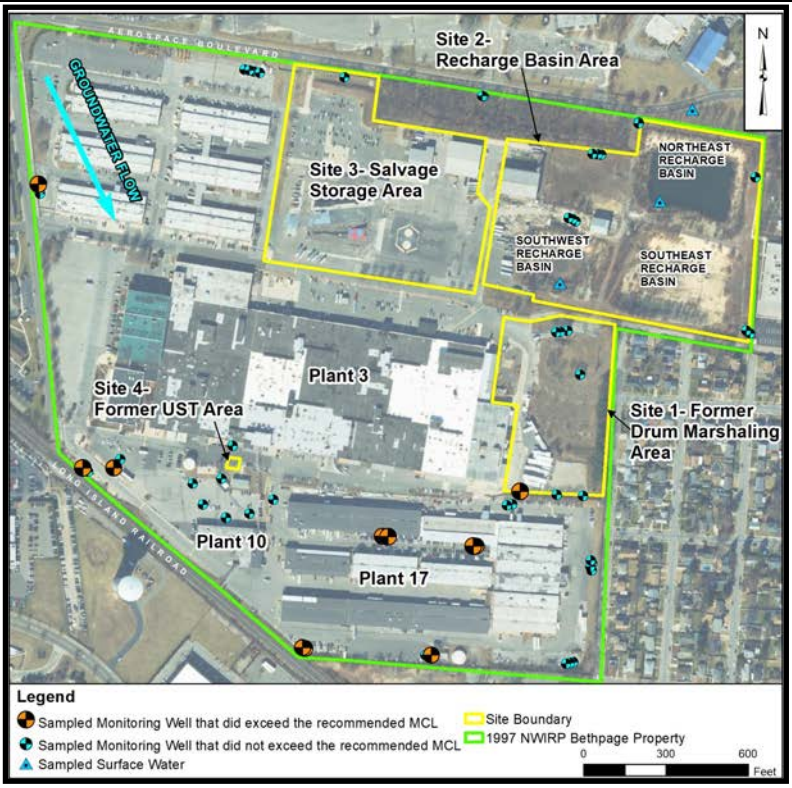
- All groundwater samples results were below the current NYSDOH MCL of 50 µg/L. Concentrations ranged from not detected to 8.7 µg/L.
- Samples from eleven monitoring wells were above the NYSDOH proposed MCL of 1 µg/L during one or more sampling events. Orange wells (see figure) indicate where 1,4-dioxane exceeds the NYSDOH proposed MCL.

VOCs

- Trichloroethene (TCE) is the most commonly detected VOC in onsite groundwater due to past use as a solvent. Results are consistent with historical data from prior sampling of wells.
- The MCL for TCE is 5 µg/L. 10% of the samples had concentrations above the MCL. Concentrations ranged from non-detect to 1,400 µg/L.

Surface Water

- Samples were collected from the Northeast Recharge Basin, Southeast Recharge Basin, and the discharge from the BCP treatment system.



1,4-Dioxane Results (2018-2019)

- Surface water samples were collected during a period of no precipitation and a precipitation event.
- Surface water lab results in the Northeast Recharge Basin, Southwest Recharge Basin, and BCP treatment system discharge testing results showed low-level VOC and 1,4-dioxane detections.

Next Steps

- The results of the sampling events will be compiled into a draft PA/SI report for regulatory review. The final PA/SI will include recommendations consistent with Comprehensive Environmental Response Compensation and Liability Act (CERCLA) guidance.

FOR MORE INFORMATION

Copies of all official environmental program documents are available for review at an information repository located at Bethpage Public Library, 47 Powell Avenue, Bethpage, NY 11714, (516) 931-3907.

Additional information on the NWIRP Bethpage Environmental Restoration Program (ERP) is available online at http://go.usa.gov/DyXF

For more information on the NWIRP Bethpage ERP, please contact: Public Affairs Officer, NAVFAC Mid-Atlantic, 9324 Virginia Ave, Norfolk VA 23511-3095
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