U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Navy Yard Mills - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region I

Subject: **POLREP #2**
Navy Yard Mills

Dracut, MA
Latitude: 42.6645955 Longitude: -71.3224182

To:
From: Catherine Young, OSC
Date: 2/6/2012
Reporting Period:

1. Introduction

1.1 Background

Site Number:	01FD	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	3/26/2010
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	11/28/2011	**Start Date:**	11/28/2011
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

1.1.2 Site Description

The 2.08 acre Site was a former cotton and woolen mill which operated from approximately 1739 until the 1960's and used the abutting waters of Beaver Brook to power mill operations. Currently there are thirteen interconnected buildings which were constructed between 1860 and 1952. The current owner of the property, Tucard LLC (Tucard), has renovated several of the buildings and is currently leasing space to commercial tenants. A large portion of the property is paved. The nearest residence is approximately 50 feet northwest of the site boundary.

According to the EPA Region 1 Environmental Justice Mapping tool, the Site is not located in an environmental justice area and, according to the 2000 U.S. Census, there are approximately 1,749 people located within 1 mile.

1.1.2.1 Location

The Site is located at 76-100 Pleasant St. in Dracut, Middlesex County, MA. The geographic coordinates of the Site are:

42^{o} 39' 52" north latitude; and
71^{o} 19' 28" west longitude.

The Site is bounded:

- to the Northwest - Condominium complex and residential buildings;
- to the Northeast - Beaver Brook;
- to the Southeast - Pleasant Street;
- to the Southwest - School Street.

1.1.2.2 Description of Threat

The major CERCLA hazardous substances, pollutants or contaminants that are being released, or for which there is a threat of a release, include but are not limited to the following:

Substance	Media
Tetrachloroethylene	Soil, water, air
Trichloroethylene	Soil, water, air
Volatile Chlorinated Solvents	Drums

In December 2008, April 2011 and July 2011, EPA conducted soil and groundwater sampling. Tetrachloroethylene (PCE), trichloroethylene (TCE), and other volatile organic compounds (VOC's) exceeding MassDEP and EPA action levels were detected in soil and groundwater throughout the Site which has been identified as the source of vapor intrusion within several buildings at the Site. EPA sampling results found TCE and PCE in soils within 4 feet of the surface at concentrations as high as 25,000 ug/kg and 19,000 ug/kg, respectively, which exceed the EPA Region 9 Preliminary Remediation Goals (PRG) standards for TCE (14,000 ug/kg) and PCE (2,700 ug/kg). EPA groundwater sampling results found exceedences of the MCP GW-2 standards for TCE (30ug/L) and PCE (50 ug/L) at concentrations as high as 540 ug/L and 820 ug/L, respectively. Due to PCE and TCE detected above State action levels from groundwater near the Northwest property line to the Site, there is also a potential vapor intrusion threat to residents living at a neighboring condominium complex, with TCE detected near the property line at 170 ug/L (MCP Method 1 Standard for TCE: 30 ug/L) and PCE detected at 180 ug/L (MCP Method 1 Standard for PCE: 50 ug/L). A sample taken from piping insulation in December 2008 confirmed the presence of asbestos in the former boiler room.

In January 2011, EPA conducted sub slab vapor and indoor air sampling, which detected levels of PCE and TCE above MassDEP imminent hazard levels. Depth to groundwater ranges from 1.5 feet at locations near Beaver Brook to over 20 feet on the southwestern section of the property. While the majority of the Site appears to be paved, the contaminants are volatile organic compounds which are the source of soil, groundwater and indoor air contamination.

Beaver Brook is classified by State of Massachusetts regulation 314 CMR 4.05 as Class B, which is water designated as a habitat for fish, other aquatic life, and wildlife, …and for primary and secondary contact recreation. Groundwater contamination exceeding MCP Method 1 Standards was found in samples taken across the Site. Groundwater at the Site flows in a southeasterly direction into Beaver Brook, presenting a potential threat to the brook. In addition, the highest concentrations of VOC's in soil were taken from the basement of building No.1, which is adjacent to Beaver Brook. (Depth to groundwater beneath building No.1 is approximately 1.5 feet.) Groundwater at this location is flowing through contaminated soils and directly into Beaver Brook. In the Northwest corner of the basement of building No.1, groundwater is seeping up into and across the basement floor for approximately 10-15 feet, then flowing under the basement slab and directly into Beaver Brook. EPA took a sample of the groundwater flowing up and across the basement floor and detected TCE at 540 ug/L (MCP Method 1 Standard for TCE: 30 ug/L) and PCE at 820 ug/L for PCE (MCP Method 1 Standard for PCE: 50 ug/L).

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

At the request of the Massachusetts Department of Environmental Protection (MassDEP), the EPA initiated an investigation in October 2008 to identify the source of contamination contributing to vapor intrusion within several buildings located at the Site. The investigation included a review of MassDEP-provided data of previous and current actions. EPA collected soil, groundwater, soil gas, indoor air and asbestos samples in December 2008, January 2011, April 2011 and July 2011. Data from these samples confirmed the presence of high levels of volatile organic compounds (VOC) in all media at several locations across the Site, and friable asbestos-containing material (ACM) within an on-site building.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Based on sampling results, methods for addressing contaminated soil which is the source of vapor intrusion into several building will include in-situ chemical oxidation (ISCO) treatment and potential excavation of surface soils. The scope of the area to be treated was determined by the indoor air samples taken by EPA which confirmed potential human exposure to TCE and PCE through vapor intrusion. Based on indoor air samples, Buildings 1 and 4, which are occupied by commercial tenants, has concentrations of TCE and PCE which exceed MassDEP action levels. The area delineated for treatment will encompass these buildings and will be reassessed as the ISCO injections proceed and progress is determined.

2.1.2 Response Actions to Date

An in-situ chemical oxidation system using sodium permanganate (NaMnO4) was the selected method of treatment. Six external injection wells were installed in the driveway surrounding buildings 1 and 4. Thirteen injection wells were installed in the basement of building 1, the location of the initial release which is suspected of being the main source of the vapor intrusion within buildings 1 and 4.

Three rounds of injections on the external wells and one round of injections on the internal wells were completed through the end of December 2011.

In the basement of building #1, the efficacy of the injections into the wells was determined to be inefficient due to the lack of contact between the NaMnO4 and the contaminated surface soils. It was decided by the OSC that the concrete floor of the basement would need to be removed and the NaMnO4 surface applied to ensure contact. The ERRS contractor is removing the floor in approximately 12ft x 8ft sections (cells) and surface applying the NaMnO4 based of a calculated pore space volume. A total of six cells have been opened for surface application. All injections and surface applications at the Site are using a 1% NaMnO4 solution. Removal of sections of the concrete floor in Building #1 should be complete by the week of February 6. T

Due to a spike in PCE and TCE concentrations from a sample taken in Nov 2011 from MW04, located in Building #2, another round of groundwater samples were taken by the START contractor in January 2012.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

A PRP has been identified. This will be an EPA-lead removal action. Removal site activities were delayed for approximately 1.5 years as negotiations and legal proceedings were conducted to obtain access to the site to conduct the removal action.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

Groundwater at well# MW04, located in building #2, has increased in concentration from 92 ug/L TCE and 120 ug/L PCE in April 2011 to 1,100 ug/L TCE and 1,400 ug/L PCE in November 2011 and 1,500 ug/L TCE and 2,100 ug/L PCE in January 2012. Due to the increased concentration of groundwater in this location, EPA NERL will install two groundwater wells behind Building #2, with the soil borings in these locations sampled prior to installation. The soil beneath Building #2 will also be sampled by NERL to determine if contaminated soils beneath the building may be contributing to the increase in VOC contamination at MW04. While in business at the Site, United Circuits, Inc. used the basements in Buildings #1 and #2 to store drums of solvents, including PCE.

2.2.1.1 Planned Response Activities

EPA NERL will be on site during the week of February 6, 2012 to install 2 groundwater wells behind Building #2, to advance 4-6 geoprobe locations in the basement of Building #2 for soil sampling by START, and to provide analysis of the soil samples on site with the EPA mobile lab. START will collect samples from the 2 groundwater wells installed by NERL.

ERRS will continue to surface apply NaMnO4 to the soils in the basement of Building #1

2.2.1.2 Next Steps

NaMnO4 injections will continue to be applied by ERRS to the contaminated soils in Building #1. The first round of post-application soil samples taken from a test pit in Building #1 showed a reduction in PCE and TCE of approximately 70%. In Building #1, two additional rounds of NaMnO4 will be applied to each of the cells and the soils will be resampled to determine if the concentrations are below the MassDEP MCP S-2 soil standards.

If samples of the soils beneath Building #2 determine VOC contamination, sections of the basement floor will be removed and NaMnO4 will be surface applied. Post-injection samples will be collected to determine if additional treatment is required.

2.2.2 Issues

The property is privately owned and has several commercial tenants onsite.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

No information available at this time.

4. Personnel On Site

1 EPA
1 START contractor
3 GES contractors

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.