

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Readburn Wood Tar Site - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region II

Subject: POLREP #2
Readburn Wood Tar Site
A209
Hancock, NY
Latitude: 42.0121060 Longitude: -75.1732339

To:
From: Jack Harmon, OSC
Date: 12/23/2013
Reporting Period: 11/16/2013 - 12/20/2013

1. Introduction

1.1 Background

Site Number:	A209	Contract Number:	EP-S2-10-03
D.O. Number:		Action Memo Date:	9/27/2013
Response Authority:	CERCLA	Response Type:	Time-Critical
Response Lead:	EPA	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	
Mobilization Date:	10/21/2013	Start Date:	10/21/2013
Demob Date:		Completion Date:	
CERCLIS ID:	NYC200400216	RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category

Former Wood Acid Factory

1.1.2 Site Description

The Site, 10.4 acres in size, was purchased in 1976 after which a small home was built and used as a secondary home. Ownership of the Site changed hands in July 2011 but, is still currently being used as a vacation residence. Historically, the Site was the location of the Tyler and Hall Chemical Company, a wood acid factory that was in operation from 1886 to 1920. The manufacturing process involved burning of wood in the absence of air to produce charcoal and wood gas. Wood tar was a waste byproduct and was used as fuel. Other noncombustible waste was disposed in pits that are immediately adjacent to Reed Creek and are a source of contamination being released into the creek.

This will be the first removal action at the Site.

1.1.2.1 Location

The Site is located at 2222 Readburn Road in the Town of Hancock, Delaware County, New York. The area surrounding the Site is rural, consists mainly of year-round and vacation homes, hunting clubs, farms, and is sparsely populated and economically depressed. The Site is adjacent to Read Creek which discharges into the East Branch of the Delaware River 2.3 miles downstream.

The former wood acid factory is delineated on the town tax map as Block 405-1, Lot 5.31 and covers approximately 10.4 acres.

1.1.2.2 Description of Threat

Contaminated soil and wood tar waste containing elevated levels of CERCLA hazardous substances, *i.e.*, benzo(a)pyrene and arsenic have been identified on the Site. In particular, two areas (approximately 32,000 square feet in total area) of contamination were identified at the surface and buried to depths as deep as five feet. The larger area (est. 23,000 square feet) of benzo(a)pyrene contamination terminates at Read Creek. Hazardous substances in this material have been and continue to be released into Read Creek. Tar balls have been observed as far downstream as the confluence with the East Branch of the Delaware River, a distance of 2.3 miles. The tar-like material is exposed by flooding which erodes the creek bank and results in the release of the tar like material into Read Creek. The material that is released is readily absorbed by humans and wildlife. In addition, during warm weather months, the wood tar liquefies and rises to the surface and migrates from the banks and into Read Creek.

The mechanisms of past, present and future releases to the environments are due to the source material, wood tar, that is contaminated with arsenic, lead and SVOCs. The contaminated waste material is prevalent

on and below the ground surface. The waste material liquifies during warm weather and rises to the surface where it is accessible to humans and wildlife and is easily transported off-site via storm water runoff.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

In June 2006, flooding along Read Creek eroded the stream bank and exposed an area of buried wood tar. The exposed wood tar was reported to the NYSDEC as a spill in July 2006. The NYSDEC hired a response contractor to excavate the exposed tar substance and to install test pits to determine the lateral extent of the waste deposit. In July 2006, the contractor installed five test pits and excavated 15 tons of material. However, the lateral extent of the material could not be determined. NYSDEC determined an Immediate Investigation Work Assignment (IIWA) should be conducted at the Site. The excavated material was returned to the test pits and covered with clean fill. One sample was collected for Toxicity Characteristic Leaching Procedure (TCLP) analysis and lead, cresols, benzene, and 2-butanone were detected with only 2-butanone exceeding the TCLP threshold values for a Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste.

In August 2006, the NYSDEC was notified by the New York State Department of Transportation (NYSDOT) that, during an inspection, a tar substance was discovered at the confluence of Read Creek and the Delaware River, approximately 2.3 miles downstream from the Site. It was determined that the floodwaters had exposed the tar substance at the Site and the warm temperatures caused the tar to liquefy and migrate with the floodwaters. The NYSDOT contractor was provided with guidance for the proper cleanup and disposal of the tar substance found in the river.

In May 2007, a NYSDEC contractor installed 22 soil borings and five monitoring wells on the Site. Fifteen soil samples were collected from the installed borings. The monitoring wells were sampled in June 2007. Soil sample analyses indicated volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and xylene (BTEX) compounds, exceeding the NYSDEC Residential Soil Cleanup Objective (RSCO) in five locations and trans-1,2-dichloroethene in two locations. One sample exceeded the NYSDEC RSCO for the semi volatile organic compounds (SVOCs) naphthalene and phenol. Three samples exceeded the NYSDEC RSCO for copper and/or lead. Groundwater results indicated concentrations of arsenic, cadmium, chromium, and lead exceeding the NYSDEC Class GA Standard in one unfiltered sample.

In May 2008, EPA conducted a site visit and collected two samples of the waste material for VOC and SVOC analyses. Sample results indicated that the waste contains elevated concentrations of phenols (2,4-dimethylphenol at 1,800 milligrams per kilogram (mg/kg), 4-methylphenol at 940 mg/kg) and naphthalene at 250 mg/kg.

In July 2008, EPA installed 27 soil borings and collected 85 soil samples for Target Compound List (TCL), VOC, SVOC, and Target Analyte List (TAL) metals plus mercury analyses. The location of the samples corresponded generally to the location of soil borings and samples previously collected by the NYSDEC in May 2007. Generally, a lense of wood tar was observed in five soil borings at depths of four to six feet below ground surface (bgs). In one soil boring, wood tar was observed at a depth of eight to ten feet bgs. Analytical results of samples collected from this material indicated concentrations of benzo(a)pyrene (4 mg/kg), phenol (1,000 mg/kg), benzene (18 mg/kg), toluene (410 mg/kg), and xylenes (830 mg/kg).

In September 2008, EPA utilized the Environmental Response Team (ERT) to determine if adverse ecological impacts existed from the release of contaminants associated with the wood tar into Read Creek. ERT collected fish using an electroshocker from four equal length areas of Read Creek, three of which were adjacent to or just downstream of the Site, while one was upstream. ERT collected a total of 160 fish from eleven different species from the upstream location; 57 fish from nine species in reach 1; 72 fish from eight species in reach 2; and 99 fish from nine species in reach 3. ERT determined that the results indicate that less fish are present in the creek downstream of the Site due to contamination entering the creek from the Site.

ERT also collected a sample of the wood tar for use in toxicity tests to evaluate the potential impacts to fish from release of toxic chemicals associated with the wood tar. ERT prepared two test solutions at two different temperature regimes, at 20°C and 30°C, using 20 grams of wood tar collected from the Site. ERT used 24-hour fathead minnow larvae for a 7-day exposure period test and rainbow trout fry for a 96-hour exposure period test.

Results of the 96-hour exposure test on the trout fry indicated that there was a higher mortality rate in the 30°C solution (100% mortality at 48 hours) versus the 20°C solution (20% mortality at 96 hours). Results of the 7-day exposure period test on the fathead minnow larvae indicated a higher mortality rate in the 30°C solution (100% at day 1) versus the 20°C solution (92.5% at day 4). The results of the toxicity tests conducted confirm that the leachable components of the wood tar are toxic to fish and that the degree of leachability and toxicity increases with increasing temperature.

ERT also conducted a streamlined ecological risk assessment at the Site. They determined that Read Creek is a low order tributary to the East Branch of the Delaware River and acts as a trout breeding and nursery area. Trout utilize groundwater upwellings as spawning areas and discharging groundwater or rainwater runoff to the creek would increase the exposure of eggs and developing embryos to contaminants. The wood tar has a high proportion of phenolic compounds, which are soluble with solubility increasing with increased temperature. Therefore, the contaminants releasing from the Site pose a threat to the health of the Read Creek ecosystem and its associated fish community (Final Report, Readburn Wood Tar Site, ERT, March 2009).

In an effort to delineate the horizontal extent of wood tar contamination, the EPA installed an additional 30 soil borings and collected an additional 112 soil samples in December 2008. All samples collected during this effort were analyzed for the same parameters as those collected in July 2008. Results from soil samples collected at a depth of five feet bgs indicated concentrations of toluene (220 mg/kg), ethylbenzene (110 mg/kg), xylenes (530 mg/kg), benzo(a)pyrene (2.4 mg/kg) and lead (980 mg/kg).

In May 2009 and September 2010, EPA collected groundwater samples from all five monitoring wells and the potable well for the residence on-site. The samples were analyzed for TCL Volatile and SVOCs, and TAL for Metals. The analytical results from these two sampling events indicated analytes from the potable well water sample were well below federal and State health based maximum allowable contaminant levels for the compounds analyzed.

To better determine the extent of subsurface soil contamination, in August 2011, EPA installed 14 test pits and collected eight soil samples (18-36 inches bgs) from these test pits. EPA also collected 43 surface soil samples (0-6 inches bgs) from a grid system in the northern portion of the Site, and five sediment samples from Read Creek. Results of the test pits indicated two areas of buried wood tar throughout the northern portion of the Site. Concrete foundations and the floors of the old buildings were also discovered along with what appeared to be an old floor drain system leading toward Read Creek. Analytical results from surface soil samples (0-6") indicated concentrations of benzo(a)pyrene (up to 13.8 mg/kg) and arsenic (up to 95.9 J mg/kg) and benzo(a)pyrene (2.33 mg/kg) in a Read Creek sediment sample. These concentrations exceed the Removal Management Levels (RMLs) for benzo(a)pyrene and arsenic of 1.5 and 39 mg/kg, respectively.

The two areas in which concentrations of benzo(a)pyrene and arsenic exceed the RAL are located in an open field within the northern portion of the property. The larger of the two areas is approximately 280 feet long and terminates in a bank alongside Read Creek. The average width of this area is approximately 80 feet. The wood tar is vertically distributed from the surface to a depth of five-feet. The areal extent of surficial arsenic contamination is approximately 9,500 square feet and overlies a major portion of buried wood tar. The smaller area is 1,125 square feet with arsenic concentrations exceeding the RML in surface soils (0-6").

Records indicate that the facility burned an estimated 16 cords of aged wood per day, which would produce approximately 352 gallons or 3,200 pounds of wood tar per day. Over the 34-year life of the Tyler and Hall Chemical Company, an estimated 3,734,016 gallons of wood tar would have been produced at this facility. This waste contains numerous constituents designated as hazardous substances under CERCLA including benzene, toluene, xylenes, benzo(a)pyrene, and phenolic compounds. A release of hazardous substances has occurred on the Site in a quantity and concentration that present a threat to the public health and the environment. There is a current exposure pathway existing to humans and the environment that will present an imminent and substantial endangerment to the public health and welfare.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

The removal action was initiated on October 21, 2013, After being delayed by the government shutdown. A site walk was held with the ERRS contractor and issues regarding logistics and resource requirements were discussed. RFQs for rental of heavy equipment, an office trailer and laboratory services were issued with delivery of heavy equipment and the office trailer expected by October 25, 2013. Underground utilities were located and the local telephone and electric service providers were contacted with inspectors for each conducting their inspections for installing service.

Brush hogging and removal of brush from the areas to be excavated was completed. An access agreement was obtained from one of the neighboring property owners to spot the office trailer. The NYSDEC was notified of the removal action start.

Silt fence was installed along Read Creek, trees were cut/removed and several loads of stone were used to expand the existing driveway to better accommodate tri-axle dump trucks. Bids were received and samples were collected from potential source areas for backfill and topsoil. T&D bids are due before noon on October 31, 2013 and in preparation for T&D, soil/waste samples were collected for waste characterization. An on-site meeting with the Town of Hancock Highway Superintendent occurred on October 25, 2013 to discuss the driveway modification as well as to confirm that the four bridges that span Read Creek were adequate in supporting the several hundred truck loads expected during the removal action. An office trailer was delivered and setup on October 25, 2013 along with a generator for power. Phone and internet service is expected to be installed on October 30, 2013.

2.1.2 Response Actions to Date

Site operations resumed on December 2nd. Load-out of tri-axle dump trucks began on December 3rd with 79 loads being transported to the Keystone Landfill in Dunmore, PA during the week.

During the week of December 9, 2013, load-out of tri-axle dump trucks continued. At the COB on December 13th, a total of 158 loads, with an average weight of approximately 22 tons had been shipped off-site. Due to inclement weather during the afternoon of December 10th, no off-site shipments occurred. The RST contractor continued to provide air monitoring/sampling as weather permitted.

Load-out of tri-axle dump trucks continued thru December 19th at which time the site was secured and personnel demobilized for the Christmas and New Years Holidays. For the three week period, 190 loads representing 4,113 tons of wood tar contaminated soil and debris were shipped off-site. Due to inclement weather on December 17th, only five loads were shipped off-site. Also due to the weather, below freezing temperatures and frequent snow showers, the RST contractor discontinued air monitoring/sampling.

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

EPA has conducted a potentially responsible party search which determined that no responsible parties exist that can reimburse EPA for the removal work to be completed through authorization of this Action Memorandum.

2.1.4 Progress Metrics

Waste Stream	Quantity	Disposal
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Non-Haz Soil	4,190 tons	Landfill
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2.2 Planning Section

2.2.1 Anticipated Activities

Site operations will cease on December 20th to observe the Christmas and New Years Holidays. Site personnel will mobilize and resume operations on January 6, 2014.

Load-out of tri-axle dump trucks with wood tar contaminated soil will resume on January 7th which is expected to take three weeks to complete, weather permitting. Backfilling operations will also resume and occur concurrently with the load-outs.

2.2.2 Issues

None

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

No information available at this time.

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.