

**United States Environmental Protection Agency
Region 2
Emergency Remedial Response Division
Response and Prevention Branch – Preparedness Team
Edison, NJ**



**AFTER-ACTION REPORT
for the
Lawrence Aviation Industries
Cleanout Operations
Barnum Avenue Culvert, Old Mill Creek
Village of Port Jefferson, NY**

Date Generated : May 28, 2010

BACKGROUND

Lawrence Aviation Industries (LAI) is located in the Village of Port Jefferson, Town of Brookhaven, Suffolk County, New York. Previously a turkey farm, LAI was a manufacturer of titanium sheeting for the aeronautics industry. Throughout the years, LAI practices for disposal of containers and chemicals were found to have caused negative environmental impacts. Drums containing trichloroethylene (TCE), tetrachloroethylene (PCE), and other wastes were allowed to leak onto the ground, making way to the underlying groundwater. The United States Environmental Protection Agency (EPA) continues to conduct work at the LAI Superfund Site, and more information can be found at <http://epaossc.org/lawrenceaviation>

In September 2006, the Record of Decision (ROD) selected groundwater extraction and treatment to address groundwater contamination with the installation of groundwater treatment system. Two have been proposed, with one system located at the facility and one within the plume area near Old Mill Pond.

Beginning in the Fall of 2007 and continuing through the summer of 2008, EPA and it's contractors conducted a groundwater investigation around the LAI Site. Based on June 2008 sampling results, it was determined that a groundwater TCE plume was traveling from the LAI Site to the north towards Port Jefferson Harbor.

In the fall of 2009, EPA authorized the allocation of funding to build a groundwater pump and treat system near Old Mill Pond. The system will assist in drawing contaminated water from the up-gradient LAI Site, as well as prevent contaminated water from leaching into the Old Mill Pond, Old Mill Creek, and Port Jefferson Harbor.



East side view of Barnum Avenue Bridge prior to work performed by EPA.

In preparation for the construction of the groundwater pump and treatment system, the Village of Port Jefferson (Village) asked EPA to assist in the cleaning of Old Mill Creek. Conceptual designs of the EPA groundwater pump and treatment system show treated groundwater discharging into the Old Mill Creek after it has been stripped of contaminants. EPA agreed to remove excessive sediments, debris, and trash thirty feet (30') east of Barnum Avenue Bridge and 30' to the West. In addition, EPA agreed to remove minor debris from the Creek up-stream of Barnum Avenue Bridge to the Old Mill Pond.

OPERATIONS

The prime contractor for EPA generated a Work Plan detailing the Old Mill Creek and Barnum Avenue culvert cleaning operations. This document, titled "Remedial Action Work Plan : LAI Cleanout Operations, Barnum Avenue Culvert, Old Mill Creek", along

with an associated Traffic Control Plan and Health and Safety Plan, was approved by EPA in April 2010. The Plans were received by the Village on April 15, 2010 and are available in the local repository (Port Jefferson Library) for viewing.

Set-Up

Operational activities followed those outlined in the April 2010 document “Remedial Action Work Plan : LAI Cleanout Operations, Barnum Avenue Culvert, Old Mill Creek”. Activities commenced on May 3, 2010 with the installation of traffic detour and road closure signs. Flagmen were also provided to assist in traffic control, distribution of Fact Sheets (see Community Outreach), and roadside safety. Fencing was placed along the northern, southern, and eastern perimeter of the work zone. Fencing was not placed on the western boundary of the work zone due to heavy vegetation. Caution barricades, cones, and caution tape provided additional visual effects for notification of road and sidewalk closures.

Debris Removal

EPA hired an arborist and landscaper for assistance in addressing vegetation removal and restoration. Removal of select vegetation was necessary for the collection of sediments and for equipment staging/operating. On the northeast side of Barnum Avenue Bridge, grasses and phragmites were removed from the Creek bank. On the southeast side of the bridge, one (1) honey locust tree and phragmites were removed. Work crews did not remove any vegetation on the northwest bank of the Creek due to the limited amount of land available. However, one (1) mulberry tree was pruned of dead limbs from this location.



View of debris prior to Old Mill Creek cleaning.

Most vegetation removed was located on the southwest side of the work zone.

Approximately fourteen (14) trees greater than three feet (3') in diameter were removed from the area. In addition, two red oak trees located on this property were pruned.

Removal of vegetation was necessary to allow for the staging and operating radius of a long-reach excavator. This large piece of equipment was primarily utilized for the removal of sediments and debris from Old Mill Creek west of Barnum Bridge. Power,

cable, data, and electrical lines located overhead prevented the machine from operating on Barnum Avenue itself.

Massive amounts of poison ivy and invasive shrubs were removed from all corners of the Old Mill Creek near Barnum Avenue. This material was placed in a 20yd² container and sent to Brookhaven Town Landfill for disposal. All native

hardwoods removed were chipped and used on-site as road base material for heavy equipment. This prevented EPA from constructing roads and equipment pads that could have caused more damage.

Personnel utilized a variety of heavy equipment for the removal of sediments, vegetative debris, and waste. A bobcat, backhoe, and long-reach excavator allowed for digging in the Creek, transporting material to filtration boxes, and restoration of grade. Approximately 120 yd² of sediment was removed from the Old Mill Creek in the vicinity of Barnum Avenue Bridge. This material was sent to Brookhaven Town Landfill in Brookhaven, NY.

During the sediment removal process, other waste items were found in the Old Mill Creek. Among the items found and recovered were countless softballs, aluminum cans, plastic bottles, glass containers, Styrofoam cups, paper dining products, tires, a bicycle, and a television.

A culvert box measuring 4'X8'X30' is located under Barnum Avenue to allow waters of the Old Mill Creek to move from the west side to the east side of Barnum Avenue. This culvert was found to be functioning poorly, at best. Sediments and debris were removed from this culvert in a unique and instrumental manner. One aqua dam was placed up-gradient in the Creek, approximately forty feet (40') to the west of Barnum Avenue. Another aqua dam was placed down-gradient in the Creek, approximately thirty-five feet (35') west of



Aqua dams were placed in Old Mill Creek to re-route water from west to east overland through pipes.

Barnum Avenue. Two 600 gallons-per-minute pumps were used to move water across Barnum Avenue in six-inch (6") flexible pipes. The water was then returned to the Creek downstream of the Barnum Bridge. This allowed for a minimal amount of water to be in the area of the culvert, so that debris and sediments could be removed from it.

During the damming activities, an inspection of the culvert was conducted. It was found that a twelve-inch (12") ductile cast-iron, active water main extends from north to south in the culvert. Sediment and debris has closed the passage below the pipe, leaving a gap approximately two to four inches (2-4") above the pipe for water flow. This pipe was found to have no supports, no protection from freezing, and is not sleeved. The pipe is acting as an artificial dam, adding stress to the structural integrity of the water main. Sediment was removed from the east side of the water main, along with a vast amount of debris. A limited quantity of sediment and debris was also removed from the west side of the culvert. EPA crews removed as much material as possible without impacting the exposed water line and without producing any additional safety concerns. Personnel were not

allowed to crawl inside the culvert due to the proximity of the water main. Suffolk County Water Authority was contacted by the Village and EPA.

Crews also cleaned the Old Mill Creek from Barnum Avenue upstream to the Old Mill Pond. Dead vegetation, household trash, softballs, plastic bottles, and other obstructions to water flow were removed from the Creek and along the bank. Approximately 40yd² of material was collected from this work area. This activity was completed the week of May 24, 2010 and will help limit future obstructions to the Barnum Avenue culvert.

LAND RESTORATION

A minimal amount of vegetation had to be removed from four individually owned properties. EPA consulted with an arborist, landscape designer, landscape architects, and Village representatives to generate a Landscape Restoration Plan that included re-sloping of lands, planting of trees and shrubs, and providing erosion control. Two properties did not require restoration due to limited impact. The northwest property only had dead vegetation removed from an existing mulberry tree. The northeast property had grasses and phragmites cut to base stems.

All plants used in the restoration are all native species to the area. Surrounding vegetation was taken into account when choosing which species to use. Local growers and/or shops were used in purchasing the vegetation. It should be noted that without continued maintenance of the area, invasive species may move into the area. It is estimated that phragmites will return to the area, as they are hardy and common.

Village Owned Lands

One tree, a honey locust, was removed from lands owned by the Village during this project. Small shrubs, phragmites, poison ivy, and under-brush was also removed. Grass areas were impacted from the use of heavy construction equipment.



Heavy equipment was utilized for excavating sediment and debris.

EPA generated the “Lawrence Aviation Industries, Old Mill Creek, Landscape Restoration Plan” dated May 2010, with the input of Village officials, including the Old Mill Creek Restoration Committee. As part of the plan, four inches of top soil was brought in to create natural contours of the land. A list of preferred native species of grasses, shrubs, and trees was given to EPA by the Committee. Shrubs were placed along the top grade of the bank, along with three

trees. Mulch was placed between the trees and shrubs for aesthetics and weed control. Sod was placed on the lawn areas that were disturbed by the use of heavy

equipment. A separate after-action report is available for land restoration activities.

Privately Held Lands

Approximately 14 trees (greater than 3" in diameter) were removed from the property located on the southwest side of the Creek, a privately held property. In addition, two trees were pruned. Tree varieties removed include red maple, red oak, american beech, and wild black cherry.

A Restoration Plan was generated for the southwest side of Old Mill Creek and presented to the property owner for comment. The property owners agreed to the Plan allowing for native trees and plants to be placed on the property. Several inches of top soil was placed on the ground and natural contours were restored. A variety of trees and shrubs were planted on higher elevations while grasses were placed along the Creek bank for erosion control.

PUBLIC RESPONSE

EPA and the Village of Port Jefferson conducted an extensive community outreach program prior to commencement of activities. That program continued during the entire course of the project. On April 20, 2010, EPA submitted a Fact Sheet to Village representatives detailing cleaning operations and providing questions and answers. On April 23, 2010, the Village requested changes to be made to the Fact Sheet to reflect alterations of the Traffic Plan (i.e. complete closure of Barnum Avenue instead of one lane).

Community Outreach

Starting on April 23, 2010, and continuing for 3 days, the EPA Community Involvement Coordinator distributed the finalized Fact Sheet to residents and area business owners. Fact Sheets were posted in the Village Hall, the Village Center, grocery stores, the Public Library, Chamber of Commerce, and other areas of public use. If residents or business owners were not available, information was placed in mailboxes and/or doorways. Approximately 250 Fact Sheets were distributed throughout the Village of Port Jefferson.

At the same time, Village representatives distributed the Fact Sheet to area business and residents. The Village also made notifications to Fire, Police, Hospitals, Ferry Terminal personnel, and others. This was critical as Barnum Avenue is a main through-fare for Fire trucks, EMS units, and ferry commuters.

EPA posted a notice in the Port Times Record, dated April 29, 2010. The statement appeared in the legal notices of this local newspaper.

The Village of Port Jefferson posted an electronic version of the Fact Sheet on the official website of the Village, www.portjeff.com. A notice of road closure and area detours was also displayed on the homepage.

Information boxes were placed on the northern and southern fences of the work zone. Fact Sheets were readily available for anyone requesting additional information regarding activities. Contact names, numbers, and email addresses were made available to the public at all times of operations. EPA fielded approximately 50 individual requests for information during the closure of Barnum Avenue.

Reporters and photographers visited the work site on May 3, 2010. Three articles relating to site activities were printed in the May 6, 2010 issue of the Port Times Record.

Community Comments

Village residents and business owners provided much feedback to EPA regarding the Old Mill Creek and culvert cleaning operations. Approximately 50 individual visits, phone calls, or random stops were made to EPA during the cleaning activities. Approximately 95% of comments were favorable of actions conducted. Many thanks were given to EPA and Village officials for getting work started in an effort to eliminate the groundwater contamination plume. This document will not focus on the positive comments presented by the community.



Barnum Avenue was closed to traffic at the Barnum Avenue Bridge.

A small number of concerns and conflicts were presented to EPA during operational activities. Most of the comments were regarding the change in the traffic pattern for getting to work, school, or coming to/from the Ferry Terminal. Two business owners reported that the closing of Barnum Avenue at the bridge caused a decrease in sales for their businesses. The property owner and business owners also reported that they were not notified of the activities.

VILLAGE PARTICIPATION

The Village of Port Jefferson played a significant role in the success of this operation. Representatives reviewed and provided comment on a number of documents prior to the commencement of activities. Village officials visited the site on a daily basis to view the progress of activities. Questions and comments presented by officials were addressed immediately.

Port Jefferson Constables visited the work zone on a daily basis, supplementing security to the area. The Port Jefferson Marine Police Unit assisted in notifying Ferry personnel of road closures and detours. The Mayor provided updates of activities during public meetings, press briefings, and governmental committee meetings. The Engineering Department provided numerous maps of utilities, easements, and ordinances which will assist EPA in the generation of future Work Plans (particularly the Discharge Line Installation Plan).

National Grid personnel provided oversight on a daily basis. Their presence was supplied as a precautionary measure due to the location of two gas lines located under Barnum Avenue.

EPA participated in a public meeting on May 3, 2010 where an update of activities was given by EPA and the Mayor of Port Jefferson.

EPA participated in a question and answer session presented at the local Planning Board meeting on May 5, 2010.

ECONOMIC IMPACT

A variety of economic interests occurred from this project. Overall, the presence of additional workers in the Village of Port Jefferson assisted with economic strengthening. With the exception of two claims, most businesses expressed positive feedback from the activities conducted. A note should be made that this document is not a formal economic assessment, nor will one be generated by EPA.

Project Funding

All costs for the activities outlined in the Work Plan are being covered by EPA as part of the Lawrence Aviation Industries Site located in Port Jefferson Station, NY. These costs encompass monies for EPA personnel, EPA contractors, subcontractors, labor, and supplies. Funding has been authorized for the construction and operation of a groundwater pump and treatment system in the Village of Port Jefferson. Money from this funding source will pay for subject costs.

Area Businesses

Local area businesses potentially profited from the operations conducted by EPA and contractors. With Barnum Avenue partially closed, more vehicular and pedestrian traffic could have been forced onto East Broadway, East Main Street, Main Street, Rt. 25A and other roads where local businesses are located.

EPA and contractor personnel visited local restaurants and shops for procuring a variety of needs. Food services, gifts, clothing, and other personal needs were purchased from various Port Jefferson businesses.

Site logistical needs were also obtained from sources located in the general area. Landscaping materials, office space, tools, hardware, electronic equipment, equipment rentals, disposal facilities, and others were sourced out through local vendors, stores, and businesses.

Two local shops reported that EPA activities had a negative impact to their businesses. The closure of Barnum Avenue prevented Ferry traffic from driving and walking past the two shops. A claim was made that Ferry users, being the main clientele for the two shops, were diverted away from Barnum Avenue, although Barnum Avenue remained open to points past the two shop locations.

Other Economic Savings

Other economically advantageous activities include the cleaning of debris from Old Mill Creek, the removal of invasive and nuisance vegetation, less traffic on Barnum Avenue in the vicinity of Old Mill Creek, removal of trash from the Creek, and better quality of life to the residents of Port Jefferson.

CHALLENGES

With all projects come unexpected events and situations that were overlooked, not projected to occur, or impossible to avoid. The removal of debris and sediments from the Old Mill Creek was not immune to unforeseeable circumstances.

EPA did not expect to have the amount of public inquiry as this project generated. EPA encouraged public participation throughout the project, and public comment and interest was appreciated. Even with information boxes located at the Site, EPA did not project the amount of public inquiry from this activity.

Available documentation for the construction and engineering of Barnum Avenue Bridge is limited due to its early period of construction. It had been previously thought that the passageway located under the Bridge to allow water flow was an open box culvert. As work progressed in the removal of sediments, it was learned that a twelve-inch (12") cast-iron water main runs through the culvert. Sediment and debris has clogged the bottom portion of the pipe and will continue to do so unless the pipe is removed. Water is allowed to flow but only between the pipe and the top of the culvert. It is unknown as to the age and structural integrity of the pipe. As such, EPA removed as much material as safely as possible. EPA notified the Village of Port Jefferson, who contacted the Suffolk County Water Authority to initiate emergency protocols in the eventual replacement and removal of the water main.



A water main was discovered in the culvert under Barnum Avenue.

Two sections of sidewalk were damaged as a result of activities. Heavy equipment moving over the sidewalk added too much pressure and cracked the sidewalk. EPA replaced the sections of sidewalk that were damaged, as outlined in the Landscape Restoration Plan.

Mother's Day showed an increase flow of vehicular traffic to Barnum Avenue. Although the Ferry Terminal was notified that Barnum Avenue was not open to through-traffic and detour signs remained posted, many cars made the turn from West Broadway onto Barnum. This caused additional traffic issues on West Broadway.

Two business owners stated that they never received information regarding the partial closure of Barnum Avenue. The business owners stated that vehicular traffic from the Port Jefferson Ferry is what brings the customers to the shops. Because of the partial road closure, the owners felt that potential customers were removed from their shops.

CONCLUSION

The overall objectives for the culvert and Old Mill Creek cleaning were met with success. Increased water flow was established for water to pass from the west side of Barnum Avenue to the east side. Sediments that had been deposited in and around the culvert were removed to allow more movement of water from the Creek and discharge pipes leading into Old Mill Creek. A large amount of debris, including plastic bottles, softballs, and dead vegetation was removed from areas near the culvert and up-gradient in the Creek to Old Mill Pond. This cleaning will help limit future obstructions to the Barnum Avenue culvert.

It is predicted that poor water flow along Old Mill Creek may be related to the presence of a 12" water main located in the culvert. The pipe is acting as an artificial dam, holding back debris and allowing the culvert to be clogged. Until the pipe is removed, water flow will be restricted and continued maintenance of the culvert and Creek will be necessary.

Although restoration of the lands owned by the Village of Port Jefferson has been conducted by EPA, maintenance of the property will be necessary. A Landscape Restoration Plan was generated by EPA and submitted to Village representatives, including the Old Mill Creek Restoration Committee. The option chosen from the Landscape Restoration Plan, is one that allows a more natural look. This includes the planting of grasses along the Creek bank to provide erosion control. This option will most likely allow the existing phragmites to return to the area. Maintenance of the Creek bank will be necessary to prevent the phragmites from overtaking the plantings.

In discussions with local residents and business owners throughout the Village of Port Jefferson, the overall theme received was positive. The community was receptive to EPA in this project and anticipates future activities to be as productive and successful.