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2006

EPA Superfund
Record of Decision:

LAWRENCE AVIATION INDUSTRIES, INC.
EPA ID: NYD002041531
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PORT JEFFERSON STATION, NY
09/29/2006

RECORD OF DECISION

Lawrence Aviation Industries, Inc. Superfund Site

Suffolk County, New York

United States Environmental Protection Agency
Region 2
New York, New York

September 2006

DECLARATION

SITE NAME AND LOCATION

Lawrence Aviation Industries, Inc. Superfund Site
Suffolk County, New York
Superfund Identification Number: NYD002041531

STATEMENT OF BASIS AND PURPOSE

This decision document presents the Selected Remedy for the Lawrence Aviation Industries, Inc. (LAI) Superfund Site (the Site) located in Port Jefferson Station, Suffolk County, New York. This remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record for this Site.

The State of New York (State) concurs with the Selected Remedy.

ASSESSMENT OF THE SITE

The response action selected in this Record of Decision is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances from the Site into the environment.

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy involves the remediation of soil and groundwater at the Site. Although surface water and sediments at Old Mill Pond and Old Mill Creek have been contaminated via the discharge of groundwater to these surf ace. water bodies, it is expected that by remediating the groundwater source of contamination, the contamination levels in the surface water and sediments will also be reduced and ultimately eliminated.

Soil Remedy

The selected remedy includes the removal of surface soils at the Site exhibiting contaminant concentrations above Preliminary Remediation Goals (PRGs).Excavated soils with a Polychlorinated Biphenyl (PCB) concentration exceeding the PRG of 1,000 micrograms per kilogram (µg/kg) (the New York State TAGM Soil Cleanup Objective) will be transported off-Site and disposed of at an appropriate facility. The estimated quantity to be excavated includes approximately 2,000 cubic yards (CY) of surface soils and 25 CY of catch basin sediments at the LAI facility for a total excavation volume of 2,025 CY. The major components of the remedy that address contaminated soils are:

- Pre-design investigation
- Excavation of on-Site LAI facility soils exceeding Preliminary Remediation Goals
- Post-excavation sampling to verify achievement of soil cleanup objectives
- Disposal of excavated soils at off-Site facilities
- Backfilling of excavated areas with clean fill
- Institutional controls consisting of an environmental easement/restrictive covenant filed in the property records of Suffolk County that will limit the use of the active industrial area to commercial and/or industrial uses only
- Evaluation of additional catch basins and removal of sediments
- Evaluation of approximately 30 electrical transformers for leakage of Polychlorinated Biphenyls (PCBs) content; remedial actions to address these transformers if cleanup objectives are exceeded.

Prior to the Remedial Design (RD) , an investigation will be performed to delineate further the areal extent of contamination, and the area and volume of PCB-contaminated soil to be excavated. Waste characterization sampling will be performed to determine if the excavated soil needs to be treated to meet RCRA Land Disposal Requirements prior to disposal in a Subtitle C landfill.

Groundwater Remedy

Trichloroethene (TCE) and tetrachlorethene (PCE) were detected at multiple depths in groundwater at levels exceeding cleanup criteria. The selected remedy for groundwater calls for Groundwater Extraction/Treatment/Chemical Oxidation Enhancement/Surface Recharge or Surface Water Discharge/Institutional and Engineering Controls/Long-Term Monitoring.

- Installation of groundwater extraction and treatment systems both at the LAI facility and within the plume area near Old Mill Pond
- In-situ chemical oxidation applied as an initial enhancement within the area of high TCE concentrations in groundwater at the LAI facility
- Imposition of institutional controls
- Development of a Site Management Plan
- Long-term groundwater and surface water monitoring to provide an understanding of changes in contaminant concentrations and distribution over time
- EPA is currently conducting an investigation of vapor intrusion into structures within the area that could be potentially, affected by the groundwater contamination plume, and would implement an appropriate remedy (such as subslab ventilation systems) based on the investigation results. Any new or renovated building or any structure that will be occupied in the future at the LAI facility should be evaluated for soil vapor intrusion.

The specific location of the components of the groundwater extraction and treatment system within the plume area near Old Mill Pond has not been sited. If during remedial design, the system is located within the New York State Coastal Zone, a Coastal Zone Consistency Assessment will be prepared. If the system is located within floodplains, a floodplain assessment will be conducted. A field delineation of wetlands in the vicinity of Old Mill Pond and Old Mill Creek will be prepared

during the remedial design. If it is determined that wetlands may be impacted by the selected remedy, a wetlands assessment will be prepared during the remedial design.

This groundwater remedy could potentially reduce the total mass of contaminated groundwater requiring pumping and treatment by destroying contaminants in-situ within higher concentration areas, further lessening the time for residual contamination to migrate, resulting in a shorter overall cleanup time for Site groundwater.

DECLARATION OF STATUTORY DETERMINATIONS

Part 1: Statutory Requirements

The Selected Remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable.

Part 2: Statutory Preference for Treatment

The Selected Remedy satisfies the statutory preference for treatment as a principal element of the remedy.

Part 3: Five-Year Review Requirements

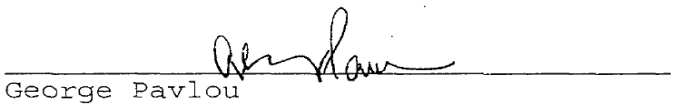
Hazardous substances remain at this Site above levels that would allow for unlimited use and unrestricted exposure. Pursuant to Section 121 (c) of CERCLA, EPA will review site remedies no less often than every five years. The first five-year review is due within five years of the date that construction is initiated for the remedial action that allows hazardous substances to remain on site. The current expectation is that construction will be initiated by the year 2008 and the first five-year review will be due before the year 2013.

ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this Record of Decision. Additional information can be found in the Administrative Record file for the Site, the index of which can be found in Appendix III of this document.

- Contaminants of concern and their respective concentrations (See Appendix II Table. 1).
- Baseline risk represented by the chemicals of concern (see ROD page 15 and Appendix II Tables 1, 5, and 6)
- Cleanup levels established for chemicals of concern, and the basis for these levels (see ROD, Appendix II, Tables 7, 8, and 9)
- A discussion of source materials constituting principal threats may be found in the "Principal Threat Waste" section, (see ROD, page 41)

- Current and reasonably-anticipated future land use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and ROD (see ROD, pages 12 and 14)
- Potential land and groundwater use that will be available at the Site as a result of the selected remedy (see ROD, page 49)
- Estimated capital, annual operation and maintenance, and total present-worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (see ROD, pages 38-39)
- Key factors that led to selecting the remedy (i.e., how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, emphasizing criteria key to the decision) may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections, (see ROD, pages 35 and 48)



George Pavlou
Director,
Emergency and Remedial Response Division
USEPA Region 2

9/29/06
Date

RECORD OF DECISION FACT SHEET
EPA REGION 2

Site

Site name:	Lawrence Aviation Industries, Inc. Site
Site location:	Port Jefferson Station, Suffolk County, New York
HRS score:	50.00
Listed on the NPL:	March 6, 2000

Record of Decision

Date signed:	September 29, 2006
Selected remedy:	
Soils:	Removal and off Site disposal of surface soils and catch basin sediments
Groundwater:	Groundwater extraction, treatment and surface water discharge at the Old Mill Pond area; and in-situ oxidation, groundwater extraction, treatment and on-site discharge at the LAI facility
Capital cost:	$12,132,000
Operation and Maintenance and Monitoring costs:	$1,024,000 annually
Total Present-worth cost:	$24,170,000 Million (7% discount rate for 30 years)
Lead:	EPA
Primary Contact:	Salvatore Badalamenti, Remedial Project Manager, (212) 637-3314
Secondary Contact:	Angela Carpenter, Chief, Eastern New York Remediation Section, (212) 637-4263
Main PRPs:	Lawrence Aviation Industries, Inc., Gerald Cohen

Waste

Waste type:	Volatile organic compounds
Waste origin:	On-Site spills
Contaminated media:	Soil, groundwater, surface water, sediments

RECORD OF DECISION

DECISION SUMMARY

Lawrence Aviation Industries, Inc. Superfund Site

Suffolk County, New York

United States Environmental Protection Agency
Region 2
New York, New York

September 2006

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SITE NAME, LOCATION, AND DESCRIPTION

The Lawrence Aviation Industries, Inc. (LAI) Site (Superfund ID. No. NYD002041531) encompasses approximately 126 acres in Port Jefferson Station, New York. Appendix I Figure 1 shows the Site location. The Site includes LAI's active manufacturing plant, which totals about 40 acres and which historically produced titanium sheeting for the aeronautics industry (hereinafter referred to as the "LAI Facility"). The LAI Facility consists of 10 buildings located in the southwestern portion of the property. An abandoned, unlined, earthen lagoon that formerly received liquid wastes lies west of the buildings, and a former drum crushing area is situated south of the buildings. Appendix I Figure 2 provides a layout of the LAI Facility. Approximately 80 acres located to the northeast and east of the LAI Facility are referred to as the "Outlying Parcels," which are vacant, wooded areas. The Outlying Parcels are part of the LAI Site. Finally, the Site also consists of a downgradient contaminated groundwater plume, located to the north of the LAI Facility, which is primarily a residential area.

The Long Island Railroad and Sheep Pasture Road form the northern boundary of the Site. To the east and west are various residential single family homes, and to the south is a wooded area beyond which is another residential area with single family homes. The Village of Port Jefferson and Port Jefferson Harbor, an embayment of Long Island Sound, lie approximately one mile to the north.

Currently, the LAI Facility is operating at a. small fraction of its capacity and many of the buildings are vacant and unused. Over the years, LAI has implemented changes in its waste disposal, practices and reportedly no longer discharges wastes to the Site. Past disposal practices have resulted in a variety of contaminant releases, including trichloroethene (TCE) , tetrachloroethene (PCE), acid wastes, oils sludge, metals and other plant wastes.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The LAI Facility was previously part of a turkey farm owned by LAI's corporate predecessor, Ledkote Products Co. of New York. In Port Jefferson Station since 1951, Ledkote produced items including lead gutters and spouts for roof drains. Since 1959, the 42-acre LAI Facility has manufactured products from titanium sheet metal, including golf clubs and products for the aeronautics industry, under the LAI name.

Aerial photographs taken between 1955 and 1982 show disturbed ground in several areas of the Outlying Parcels. Past disposal practices have resulted in a variety of contaminant releases including trichloroethene (TCE) , tetrachloroethene (PCE), acid wastes, oils, sludge, metals, and other plant wastes. In an effort to "clean up" the LAI Facility in 1980, LAI reportedly crushed more than 1600 drums, allowing, their liquid contents to spill onto unprotected soil. Previous investigations in the Site vicinity suggest that releases of hazardous substances from the LAI Facility have affected Site soils, groundwater, surface water and sediment downgradient of the Site.

During the 1970s and 1980s, Suffolk County Department of Health Services (SCDHS) and New York State Department of Environmental Conservation (NYSDEC) conducted several Site visits and investigations at the Site and documented various potential environmental concerns. Surface samples from sumps, puddles, laboratory cesspools, and surface water run-off at the LAI Facility were found to contain high levels of fluoride, toluene, carbon tetrachloride, and heavy metals. Adjacent residential wells were found to be contaminated with fluoride, nitrates, TCE, 1,1-dichloroethylene,

cis-1,2-dichloroethene (DCE), PCE, and heavy metals. In 1987, EPA as part of a removal action, provided bottled water and subsequently connected homes with private wells impacted by groundwater contamination to public water supplies. In 1991, the NYSDEC Region 1 Resource Conservation and Recovery Act (RCRA) Hazardous Substance Group oversaw a major drum removal action. In the 1990s, the Suffolk County Water Authority under contract with the NYSDEC connected additional homes impacted by groundwater contamination attributed to LAI to public water supplies. In 1997, NYSDEC conducted a limited Remedial Investigation (RI) ; results from this limited RI revealed that groundwater and surface water have been impacted by elevated concentrations of. chlorinated volatile organic compounds (CVOCs).

Based on the above investigations, in 1999, NYSDEC requested that EPA place the Site on the National Priorities List (NPL) , promulgated pursuant to Section 105 (a) (8) (B) of CERCLA, 42 U.S.C. § 9605 (a) (8) (B). EPA prepared a hazard ranking system (HRS) report and proposed the Site for inclusion on the NPL on October 22, 1999. The Site was listed on the NPL on March 6, 2000. EPA initiated the Remedial Investigation field activities in the summer of 2003.

By letter dated April 12,. 2000, EPA notified LAI of its potential CERCLA liability with regard to the Site, and gave LAI the opportunity to perform the RI for the Site. LAI did not consent to do so, and EPA began performing the RI after obtaining. LAI's consent to access to the Site. EPA notified Gerald Cohen, the president and chief executive officer of LAI, of his potential CERCLA liability by letter dated April 3, 2003. As a result of his failure to respond to Requests for Information, issued under Section 104 (e) of CERCLA, U.S.C. § 9604(e), EPA issued Cohen a subpoena to appear for a deposition, which took place in December 2003.

Based on an additional inspection of the Site in April 2003, NYSDEC ordered LAI to cease production until all noted violations of air, soil, solid waste, chemical bulk storage, and hazardous waste regulations were resolved.

In December 2003, EPA personnel observed conditions at the Site, including, but not limited to, leaking vats and drums, that warranted the performance of a removal action. After LAI did not consent to grant access requested by EPA to conduct the removal, on February 4, 2004, EPA issued an administrative order to LAI pursuant to Section 104 (e) (5) of CERCLA, 42 U.S.C. § 9604(e)(5), directing compliance with EPA's request. LAI ultimately complied with this order. In March and April, 2004, EPA's Removal Action Branch unstacked and restaged approximately 1,300 drums, containers, and cylinders containing various flammable solids, acids, bases, gas cylinders and unknown compounds, and inventoried the laboratory area identifying at least 390 containers. Most of the drums and containers were disposed off-site in October and November 2004. In March 2005, a 13.5 ton shipment of transformers and capacitors filled with suspected PCS liquids was removed from the site and disposed of as part of the Removal Action. During these actions, approximately 30 additional electrical transformers were identified in several areas of the Site.

On September 6, 2006, the United States filed a complaint against LAI, Cohen, and 125 Acres of Land, More or Less, seeking reimbursement of EPA's past response costs from LAI and Cohen, civil penalties from Cohen for his failure to respond to EPA's Request for Information, and a declaratory judgment against LAI and Cohen, holding them liable for future response costs. The complaint also sought the sale of the LAI Facility property and the Outlying Parcels in order to satisfy EPA's liens

on these properties. EPA issued notice of its liens on the LAI Facility property in March 2003 and on the Outlying Parcels in April 2005 by filing these notices at the Office of Clerk of Suffolk County.

COMMUNITY PARTICIPATION

The Proposed Plan and supporting documentation for the LAI Site were made available to the public on July 20, 2006, at the EPA Region 2 Administrative Record File Room in New York, NY; the Port Jefferson Free Public Library in Port Jefferson; and at the Comesewogue Library in Port Jefferson Station. EPA issued a public notice in Newsday on July 28, 2006 which contained information relevant to the duration of the public comment period, the date of the public meeting, and the availability of the Proposed Plan and the entire Administrative Record. The public comment period was held from July 20, 2006 through August 19, 2006. An extension to the public comment period, was requested. As a result, it was extended to September 18, 2006. This was announced in the Times Beacon Record on August 24, 2006. In addition, a public meeting was held on August 1, 2006, at the Port Jefferson High School, 350 Old Post Road, in Port Jefferson, NY. The purpose of the meeting was to inform local officials and interested citizens about the Superfund process, to discuss the Proposed Plan, to receive comments on the Proposed Plan, and to respond to questions from area residents and other interested parties. Responses to comments and questions received at the public meeting and in writing throughout the public comment period are included in the Responsiveness Summary, which is part of this Record of Decision (see Appendix 5).

Prior to the release of the Proposed Plan, EPA updated the community regarding the status of the RI of the Site through a series of fact sheets distributed in November 2003, June 2004, November 2005 and January 2006. In addition, a public availability session was held in February 2006 to provide the community with updated information on the RI, report on EPA's initiation of a vapor intrusion evaluation of buildings, and to provide an opportunity to ask questions about the Site.

SCOPE AND ROLE OF RESPONSE ACTION

This Record of Decision addresses contaminated soil and groundwater at the LAI Superfund Site. The Selected Remedy includes separate remedies for the cleanup of soil and groundwater. Surface water and sediment in Old Mill Pond and Old Mill Creek have also been contaminated with volatile organic compounds (VOCs) as a result of contaminated groundwater discharging into these surface water bodies. It is expected that by remediating the groundwater, the source of the contamination in the surface water and sediment will be removed. Any remaining VOCs will be attenuated through microbial degradation, volatilization, and abiotic chemical processes. Because the Site is being addressed in its entirety by this ROD, no other operable units are planned.

SITE CHARACTERISTICS

Physical Characteristics

Surface Features

The LAI Site lies atop the Harbor Hill moraine on a localized plateau. A high point immediately

north of the Site reaches an elevation of 271 feet above-mean sea level (msl). From this location northward, the topography drops to sea level at Port Jefferson Harbor over a distance of about 1.3 miles.

The Site area is relatively hilly, with rolling hills and valleys, compared with the topography to the west and south, which is predominantly flat. Ground surface elevations on-Site range from approximately 190 feet above msl in the northwest corner of the LAI Facility property to 250 feet above msl on the north central portion of the Outlying Parcels. The buildings at the southern end of the LAI Facility are at approximately 225 feet above msl.

Surface Water Hydrology

Several small surface water bodies at and in the vicinity of the Site are less than one. acre in size. These include a small recharge basin in the southwest corner of the Site and a small pond, known as Flannery Pond, located approximately 1,400 feet north of the LAI Facility. The closest flowing surface waters are located approximately 1.1 miles north and downgradient of the LAI Site. The flowing surface waters are a small pond and an associated creek which flow into the Port Jefferson Harbor and are locally known as Old Mill Pond and Old Mill Creek, respectively.

Flannery Pond is classified as Class C, "Fresh surface waters," indicating that the water is suitable for fish propagation and survival and primary and secondary contact recreation. Old Mill Creek and Old Mill Pond are classified as Class D, "Fresh surface waters," indicating that the waters are suitable for fish survival and can be used for fishing and primary and secondary contact recreation. There are no clear overland run-off pathways from the Site to these surface water bodies. Surface water eventually flows to Port Jefferson Harbor.

At the LAI Facility, storm water from building roofs and parking areas is either diverted to a number of on-Site storm drains or discharged directly to the ground surface. Drainage from the eastern portion of the LAI Facility is piped to the eastern edge of the LAI Facility and discharged to the ground within the Outlying Parcels. Groundwater discharges naturally to Long Island Sound from streams (such as the Old Mill Stream in Port Jefferson), coastal springs and submarine seepage.

Geology

The elevation of the bedrock surface is estimated to be 700 feet below msl beneath Port Jefferson Harbor, dropping to 1,400 feet below msl beneath Selden, New York to the south of the LAI Site. The LAI Facility itself is directly underlain by the Pleistocene age Harbor Hill moraine which is up to 70 feet thick and composed primarily of sand and gravel with occasional lenses of silty sand and silt. The moraine deposits thin to the south and north. At the LAI Facility, the moraine deposits are underlain by a silt rich layer. This layer is about 30 to 40 feet thick directly beneath the LAI Facility. This layer also contains more permeable sand layers and is not laterally continuous across the site area. The layer is also present further to the south, but thins until it is four feet thick.

Hydrogeology

Three aquifers are present beneath the LAI Site: the Upper Glacial Aquifer,, the Magothy Aquifer and the Lloyd sand member of the Raritan Formation. The Magothy and underlying Lloyd Sand Aquifers are separated by the Raritan clay member of the Raritan Formation. Consequently, water is interchanged much more readily between the Upper Glacial and Magothy aquifers than between

the Magothy and Lloyd aquifers. The presence of the virtually impermeable Raritan Clay, directly underlying the Magothy aquifer, is the lower boundary of the flow system analyzed for the LAI Site.

Ecology

An. ecological reconnaissance was performed for the LAI Site as part of the Remedial Investigation in 2003. Numerous plants, shrubs, and trees were found to be present at the LAI Facility. Native plants and urban invasive species were observed within the wooded area and along the LAI Facility perimeter. Wildlife, including numerous song birds, one species of hawk, and squirrels were observed in the vicinity of the Site. Similar to the wooded areas on the LAI Facility, the Outlying Parcels and their fringe exhibit characteristics of both the maritime post oak forest and pitch pine-oak ecological community categories. Wildlife observed in these areas includes the eastern townee, American robin, and red-bellied woodpecker.

Flannery Pond, less than one acre in size, is located approximately 400 feet to the north of the LAI Facility within a forested area. Old Mill Pond is very small, less than one-half acre in size and approximately three feet deep. Flannery Pond is a likely habitat for amphibian breeding and may also be utilized by raccoons and turtles. South of the Old Mill Pond, and 400 to500 feet north of the pond, the Old Mill Creek has limited overhanging, vegetation, and the remaining creek north of the pond is a bare, culvert. Postings at the Old Mill Pond warn that the water is contaminated; no uses of the pond were observed. Vegetation and song birds were observed around both ponds.

Port Jefferson Harbor is surrounded by Port Jefferson Village at its south end, and is connected to Long Island Sound to the north. The harbor is a tidal water body that is a significant habitat and breeding ground for fish, shellfish, and numerous species of migratory waterfowl.

Two small federal-mapped wetlands were in proximity to the Site and both appear to be less than an acre in size. One is less than a half. mile to the west of the Site and the other is within a half-mile of the Site to the northeast.

Based on NYSDEC records, threatened and endangered species were observed at or within a three-mile radius of the Site. The threatened species were least tern (*Sterna antillarum*), common tern (*Sterna hirundo*) , and slender pinweed (*Lechea tenuifolia*.). The endangered species was piping plover (*Charadrius melodus*).

Cultural Resources

A Stage 1A cultural resources survey of the Site and surrounding area was conducted as part of the LAI RI. The survey included a review of previously recorded cultural resources and site reconnaissance performed by a Registered Professional Archeologist. The purpose of the survey was to identify cultural resources that may be affected by the RI or subsequent remedial activities at the Site and in the surrounding area. The LAI property and the surrounding study area are within a region designated in a Suffolk County Archaeological Association-sponsored study as sensitive for prehistoric archaeological resources. At least three archaeological sites have been identified within the Study Area, and over 100 historic properties in the Village of Port Jefferson are listed on the State and National Register of Historic Places. Most of the LAI Site should be considered moderately sensitive for prehistoric archaeological resources. However, prior ground disturbance is indicated for portions of the LAI Site and as a result, the area immediately surrounding the LAI manufacturing complex is not sensitive for archaeological resources. Also, the northwest portion of

the LAI Site appears to have been mined for sand. Based on the extent of this disturbance, this portion of the Outlying Parcels is not likely sensitive for archaeological resources.

Cartographic analysis indicated that a nineteenth-century residence may have been located within or near the eastern portion of the Outlying Parcels and this area should be considered sensitive for historic archaeological resources.

Also, the Flannery Pond would have likely been an attractive source of freshwater throughout the Holocene. Accordingly, the upland areas located southeast and north of the pond should be considered highly sensitive for Native American archaeological resources.

Nature and Extent of Contamination

From August, 2003 to May, 2005 EPA performed a RI at the LAI Site in two stages: an initial investigation, referred to as field screening activities (FSA), and a second stage referred to as field data collection activities (FDCA). The FSA data was used to determine the locations and depths of soil borings and multiport monitoring wells for the FDCA. Major RI activities performed during the FDCA included. on-Site soil borings; groundwater screening sampling (during drilling of monitoring wells); existing monitoring well, public supply, and residential well sampling; monitoring well drilling, packer testing, and multiport monitoring well installation and sampling.

As a first step in the evaluation of the nature and extent of contamination found in surface water, sediments, soil, and groundwater, contaminant levels were screened with delineation criteria. Whenever possible, established regulatory criteria, known as chemical-specific Applicable or Relevant and Appropriate Requirements (ARARs) , were used for the delineation criteria values. In the absence of ARARs, regulatory guidance values known as "to be considered" (TBC) values, were used for the delineation criteria values.

Soil

Metals at concentrations exceeding delineation criteria are widely distributed in "exterior and interior (beneath LAI Facility buildings) soils at the LAI Facility and Outlying Parcels. Metals, including antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, titanium, vanadium, and zinc were detected at concentrations exceeding delineation criteria which generally decreased with increasing depth in soils. Below. 50 feet below ground surface (bgs), all exceedances were at or near the delineation values. VOCs, semi-volatile organic compound. (SVOCs), and polychlorinated biphenyls (PCBs) were detected infrequently in soil samples at concentrations exceeding delineation criteria.

VOCs, SVOCs, and pesticides were not detected at concentrations exceeding delineation criteria in any of the interior soil boring samples at the LAI Facility or at the Outlying Parcels. PCBs were detected in surface soil samples and two interior soil boring locations at the LAI Facility and not detected in soil samples at the Outlying Parcels.

Groundwater

No site-related VOCs (PCE, TCE, DCEs, and vinyl chloride) were detected in the older, pre-existing monitoring wells at concentrations exceeding delineation criteria. One VOC, 1,1,1-trichlorethane, exceeded its delineation criteria in a sample from one of the older, pre-existing monitoring wells.

No VOCs were detected in the residential and public supply wells at concentrations exceeding delineation criteria. PCE and TCE were detected at concentrations exceeding delineation criteria in multiple levels of the majority of the newer multiport monitoring wells, with TCE detected most frequently and at the highest concentrations in shallow groundwater samples collected directly below the LAI Facility.

A TCE plume is migrating downgradient from the LAI Facility to the northwest (see Appendix I Figure 3). Approximately 1,000 feet from the western boundary of the LAI Facility, groundwater flow and the TCE plume bends to the north toward Port Jefferson Harbor. There is an upward hydraulic gradient near Old Mill Pond indicating that contaminated groundwater is moving upward as it moves northward in the vicinity of Old Mill Pond. In general, groundwater data from the multiport monitoring wells show that the plume has been bounded laterally and vertically.

No soil samples within the LAI Facility were found to be contaminated with chlorinated solvents, however, residual soil contamination might still exist in low permeability zones, serving as sources for groundwater contamination based on the following three considerations: (1) high TCE concentrations were detected in groundwater at the Site more than 20 years after releases of free product had stopped, (2) the Site encompasses a large area and only a limited number of deep borings/monitoring wells have been advanced at the Site, as deep drilling and sampling is difficult and costly, and (3) as at many other sites EPA has investigated, residual soil contamination generally exists in sporadic, thin layers and has only been located at other sites with unique investigative tools and very closely spaced soil borings.

Given the lack of information regarding the timing and nature of past releases, the following scenarios are plausible based on the Site data:

- High VOC concentrations in groundwater near multiport monitoring wells MPW-02 and MPW-07 in, the central part of the LAI Facility are the result of a significant on-site release that occurred in the past and migrated as a slug. Lower contaminant concentrations in the plume center are a result of residual contamination or a continuous, lower-concentration release over time (see Appendix I Figure 3).
- Monitoring wells MPW-03, MPW-05, MPW-06 and MPW-10 are located on the edges of the plume and an area of higher contamination may be present between the wells.

Surface Water

Surface water samples collected from Old Mill Pond and Old Mill Creek contained chlorinated VOCs, primarily TCE, PCE, cis-1,2-DCE, and vinyl chloride, at concentrations exceeding delineation criteria. VOCs in surface water are related to groundwater discharge to surface water in the Old Mill Pond and Old Mill Creek area. Surface water samples collected from Port Jefferson Harbor did not exceed any delineation criteria.

Sediment

Sediment samples collected from Old Mill Pond and Old Mill Creek are primarily contaminated. with elevated levels of TCE. VOCs in sediments are likely related to the discharge of VOC-contaminated groundwater to the pond and creek. VOCs in the pond sediments and in a portion of the creek exceeded delineation criteria. VOCs did not exceed delineation criteria in sediment samples collected from the Harbor.

Several LAI Facility catch basin sediment samples were collected and analyzed. The results indicate that they are primarily contaminated with metals and PCBs. The catch basins receive direct run-off from the LAI Facility. Points of discharge for the catch basin system are uncertain, but, based on observations during the sampling events, some of the basins have apparently been disconnected from the system. Any LAI Facility floor drains connected to the catch basins would have allowed waste materials to be discharged to the catch basins and to enter into adjacent soil and groundwater.

Contaminant Fate and Transport

The greatest potential for transport of VOCs at the Site is via groundwater migration. VOCs (PCE, TCE, and cis-l, 2-DCE) detected at elevated levels in groundwater persist due to limited degradation and some retardation. VOCs are generally highly mobile and do not readily adsorb to solids in the aquifer. Significant degradation of VOCs is not occurring in groundwater as it is transported within the aquifer.

Surface run-off is another significant transport mechanism for metals contamination in surface soils to migrate to the LAI Facility catch basins resulting in metals contamination of surface water and sediment in these structures.

Groundwater discharge into surface water and sediment is a transport mechanism for VOCs in groundwater to impact Old Mill Pond, Old Mill Creek, and potentially, Port Jefferson Harbor. High levels of Site-related VOCs remain in some of the Old Mill Pond sediments and surface water. Surface water and sediment transport is a potential mechanism for VOC migration from Old Mill Pond and Old Mill Creek to Port Jefferson Harbor. Surface water and sediment contamination was not identified in samples collected in the Harbor.

CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

Based on estimates of the resident population which were calculated during the 2000 Census, the population of the Village of Port Jefferson is approximately 7,800. The LAI Site and its surrounding area are zoned industrial and residential. The closest residence to the Site is located approximately 1,000 feet north of the LAI Facility. The areas to the north, northwest, and west of the Site are zoned residential and contain single family houses, vacant wooded area, and an apartment complex. The areas to the northeast and east of the Site are zoned for industrial use but are currently vacant. Immediately west of the LAI Facility is a mulch manufacturing operation, "Chip-it-All".

Residential re-use of the undeveloped Outlying Parcel Area is reportedly being considered. Future use of the remainder of the Site area is expected to remain unchanged.

All groundwater in New York State is classified as GA, which is groundwater suitable as. a source of drinking water. There is a future potential beneficial use of groundwater at the Site as a drinking water source. Public water supply wells of the Suffolk County Water Authority are located approximately one mile northeast of the LAI Facility.

SUMMARY OF SITE RISKS

Based upon the results of the RI, a baseline risk assessment was conducted to estimate the risks associated with current and future site conditions. A baseline risk assessment is an analysis of the

potential adverse human health and ecological effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current and anticipated future land use.

The risk assessment documents for this Site, entitled "Revised Final Baseline Human Health Risk Assessment" and "Revised Final Screening-Level Ecological Risk Assessment", are available in the Administrative Record file.

Human Health Risk Assessment

A four-step process is utilized for assessing site-related human health risks for reasonable maximum-exposure scenarios.

Hazard Identification: In this step, the contaminants of concern (COCs) at the site in various media (i.e., soil, groundwater, surface water, and air) are identified based on factors such as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil. Factors relating to the exposure assessment included, but are not limited to, the concentrations to which people may be exposed and the potential frequency and duration of exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with contaminant exposures and the relationship between magnitude of exposure and severity of adverse health effects are determined. Potential health effects are contaminant-specific and may include risk of developing cancer over a lifetime or other noncancer health effects, such as changes in the normal function of organs within the body (e.g., changes in the effectiveness of the immune system). Some contaminants are capable of causing both cancer and noncancer health effects.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures are evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one-in-ten-thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions explained in the Exposure Assessment. Current Superfund guidelines for acceptable exposures are an individual lifetime excess cancer risk in the range of 10^{-4} to 10^{-6} (corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk) with 10^{-6} being the point of departure. For noncancer health effects, a hazard index (HI) is calculated. An HI represents the sum of the individual exposure levels compared to their corresponding reference doses. The key concept for a noncancer HI is that a "threshold level" (measured as an HI of less than 1) exists below which noncancer health effects are not expected to occur.

The results of the four-step process identified above are summarized in the following paragraphs, The human-health estimates are based on current reasonable maximum exposure scenarios and were

developed by taking into account various conservative estimates about the frequency and duration of an individual's exposure to the COCs in the various media that would be representative of site risks, as well as the toxicity of these contaminants. For the purposes of the risk assessment, the Site is considered to be comprised of three distinct areas: the LAI Facility, the Outlying Parcels, and the downgradient plume and residential area.

The Hazard Identification step identified the following COCs, which are summarized in Appendix II Table 1. The primary COC in the groundwater is TCE and the primary COC in surface soil are PCBs, as measured by Aroclor-1254 and Aroclor-1260.

The Exposure Assessment step evaluated the current and reasonably anticipated future land use, the potential receptor populations, and the potential route of exposure. These are summarized in Appendix II Table 2. The current land use of the LAI Facility is industrial/commercial, and it is not expected that the land use will change in the future. The Outlying Parcels are forested with potential future plans including residential and recreational activities (e.g., biking/walking path) and the downgradient plume and residential area is expected to remain residential. The area is served by municipal water and it is not likely that the groundwater underlying the property or the residential areas will be used by individuals for potable purposes in the foreseeable future; however, since the regional groundwater is designated as a drinking water source (a sole source aquifer as well), hypothetical exposure to groundwater was evaluated. The other media that were evaluated included surface and subsurface soil on the LAI Facility, and Outlying Parcel and sediment and surface water from Old Mill Pond, Old Mill Creek and Flannery Pond.

The results of the Toxicity Assessment step are presented in Tables 3 and 4. The non-cancer toxicity data and the carcinogenic toxicity data were used in conjunction with the results of the previous two steps to complete the Risk Characterization step. The results of the Risk Characterization step indicate that there is an unacceptable cancer risk from exposure to groundwater through ingestion, inhalation, and dermal contact from all three areas associated with the Site (Appendix II Table 5). In addition, there is an unacceptable noncancer hazard from exposure to groundwater through ingestion, inhalation, and dermal contact from all three areas, as well as unacceptable noncancer hazard from exposure to surface soil at the LAI Facility (see Appendix II Table 6).

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis n environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is uncertainty as to the actual levels present. Environmental chemistry analysis error can stem from several sources, including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Fate and transport modeling is also associated with a certain level of uncertainty. Factors such as the concentrations in the primary medium, rates of transport, ease of transport, and environmental fate all contribute to the inherent uncertainty in fate and transport modeling.

Uncertainties in the exposure assessment are related to estimates of how often an individual, would actually come in contact with the chemicals of concern, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near the Site, and is highly unlikely to underestimate actual risks related to the Site.

More specific information concerning public health and environmental risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the "Revised Final Baseline Human Health Risk Assessment Report".

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in the ROD, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

Ecological Risk Assessment

A screening-level ecological risk assessment (SLERA) was prepared to identify the potential environmental risks associated with surface water, sediment, and soil. A SLERA addendum, referred to as a Step 3A evaluation, was also prepared to refine the list of chemical of concern evaluated in the SLERA. The results of the SLERA suggested that there are contaminants present in the surface water and sediments of Old Mill Creek and Flannery. Pond and surface soil of the LAI Facility that may cause adverse health effects to the flora and fauna in the area. These adverse health effects could consist of impacts in growth, reproduction, and survival of plants, aquatic invertebrates, fish, soil invertebrates, and terrestrial birds and mammals. Further evaluation determined that surface water in Old Mill Creek and Old Mill Pond has the potential to cause ecological adverse health effects due to cis-1,2-dichloroethene and at LAI Facility soils due to PCBs.

REMEDIAL ACTION OBJECTIVES

Section 121(d) of CERCLA requires that, at a minimum, any remedial action implemented at a site achieve overall, protection of human health and the environment and comply with all ARARs. ARARs at a site may include other federal and state environmental statutes and regulations. Other federal or state advisories, criteria, or guidance are To-Be-Considered (TBCs). TBCs are not required by the NCP, but may be very useful in determining what is protective of a Site or how to carry out certain actions or requirements. Before developing remedial action (cleanup) alternatives for a Superfund site, EPA establishes both Remedial Action Objectives (RAOs) and Preliminary Remedial Goals (PRGs). RAOs are media-specific goals for protecting human health and the environment. PRGs are chemical-specific cleanup goals, which are used as benchmarks in the screening, development and evaluation of cleanup alternatives. RAOs and PRGs are based on the ARARs and TBCs that have been identified as applicable to the site.

PRGs for the LAI Site were selected based on federal or state promulgated ARARs, risk-based levels, and background concentrations, with consideration also given to other requirements such as

analytical detection limits and guidance values. These PRGs were then used as benchmarks in the technology screening, alternative development and screening, and detailed evaluation of cleanup alternatives presented in the subsequent sections of the FS report. The PRGs for surface soil, sediments, and surface water are mainly based on ecological risk; the PRGs for groundwater are driven by human health based risk levels (refer to Tables 7, 8, and 9).

Soil

The LAI HHRA indicates that human health cancer and noncancer risks are below or within the EPA's acceptable risk ranges for current and future LAI Facility workers, current and future off-Site residents, and future LAI Facility and Outlying Parcel residents when exposed to contaminants in the soil, with the exception of exposure to future child residents to LAI Facility soils which pose a potential for non-cancer hazards due to PCBs. The LAI SLERA indicates PCBs may pose risks to ecological receptors.

The LAI Facility area is currently an industrial area and not an ecological habitat. The Outlying Parcel area is currently undeveloped. Residential re-use of the Outlying Parcel area in the future is being considered and would eliminate it as an ecological habitat. The metals in the soil at the LAI Facility area that pose risks to ecological receptors are common elements of soil and not related to past Site operations. Based on the above discussion, the following RAOs have been identified for Site soil:

- Prevent or minimize human exposure with soils having PCB contaminant concentrations in excess of soil cleanup objectives
- Manage ecological risks

Groundwater

All groundwater in New York State is classified as GA, which is groundwater suitable as a source of drinking water. Site groundwater has a downward gradient beneath the LAI Facility. and a strong upward gradient as it approaches the shoreline at Port Jefferson Harbor. Old Mill Pond and Old Mill Creek are recharged by groundwater. Groundwater at the Site is contaminated with VOCs, including TCE, PCE and 1,2-DCE that exceed regulatory requirements and pose risks to human health through inhalation arid ingestion and dermal contact. Currently, all residents known to have had private wells within the plume area have been connected to the public water supply, eliminating the ingestion, inhalation and dermal contact pathways of exposure associated with using groundwater as a source of potable water.

EPA is currently conducting an investigation of vapor intrusion into structures within the downgradient area affected by the contamination plume, and would implement an appropriate remedy (such as sub slab ventilation systems) based on the investigation results.

To protect human health and the environment, the following RAOs have been identified for groundwater:

- Prevent or minimize potential, current, and future human exposures including inhalation, ingestion and dermal contact with VOC-contaminated groundwater
- Minimize the potential for off-site migration of VOC-contaminated groundwater
- Restore groundwater to levels which meet, NYS Groundwater and Drinking Water Quality Standards within a reasonable time frame

- Prevent or minimize VOC-contaminated groundwater from discharging into Port Jefferson Harbor

Surface Water

Surface water in Old Mill Pond and Old Mill Creek has been contaminated with VOCs, including TCE, PCE and 1,2-DCE, via contaminated groundwater discharging to surface water bodies. It is expected that by remediating the groundwater source of contamination, the contamination levels in the surface water and sediments will also be reduced and eliminated. The following remedial action objectives have been identified for surface water:

- Prevent or minimize potential human exposure including ingestion, inhalation and dermal contact with VOC-contaminated surface water
- Restore surface water to levels which meet Surface Water Quality Standards within a reasonable time frame
- Prevent or minimize VOC-contaminated surface water that exceeds water quality standards from discharging into Port Jefferson Harbor

Sediment

Surface Water Sediments

Sediments in Old Mill Pond and Old Mill Creek have been contaminated with VOCs, including TCE, PCE and 1,2-DCE, as a result of contaminated groundwater discharging into these surface water bodies. Contaminated sediment in Old Mill Pond and Old Mill Creek could potentially be transported to Port Jefferson Harbor during high flow events and impact the Harbor. Sediments in the Harbor could also become contaminated through direct discharge of groundwater. Limited sampling of surface water and sediment in the Harbor showed no Site-related VOC contamination.

Because of the low bioaccumulation potential and low bioavailability, the potential risks to ecological receptors from exposures to the VOCs detected in sediment are low. Pesticides, which present the greatest potential risk, are not considered to be Site-related. After remediation of groundwater, Site-related VOC contamination will not persist in the surface water sediments. No remedial action will be required for these surface water sediments.

LAI Facility Catch Basin Sediments

Sediment within several LAI Facility catch basins has been contaminated with pesticides, PCBs, and metals by storm water run-off from outdoor areas of the Site and potentially from floor drains within buildings. Additional LAI Facility catch basins remain to be evaluated during future pre-design investigations. PCBs and metals contained within the catch basin sediments are considered to have the potential to be released to soil and groundwater. While available data cannot confirm that ecological receptors have access to catch basin sediment, some of the COCs detected were measured at concentrations that may cause adverse effects in sensitive ecological receptors. The following RAOs have been identified for LAI Facility catch basin sediments:

- Prevent or minimize the potential release of contamination in catch basin sediments to soil and/or groundwater
- Prevent current and future ecological and human exposures to contaminated sediment.

DESCRIPTION OF ALTERNATIVES

CERCLA § 121(b)(l), 42 U.S.C. § 9621(b)(l), mandates that remedial actions must be protective of human health and the environment, cost-effective, comply with ARARS, and utilize permanent solutions and alternative. treatment technologies and resource recovery alternatives to the maximum. extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants and contaminants at a site. CERCLA § 121(d), 42 U.S.C. § 9621(d), further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants, which at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA § 121(d)(4), 42 U.S.C. § 9621(d)(4).

Detailed descriptions of the technologies and remedial alternatives considered for addressing the contamination associated with the Site can be found in the FS report. This document presents a summary of the two soil remediation alternatives and five groundwater remediation alternatives that were evaluated. The remedial alternatives are described below.

Soil Remedial Alternatives

Alternative S1: No Action

Estimated Capital Costs:	$0
Estimated Operation and Maintenance (O&M) Costs (30 year duration):	$0
Estimated Long-Term Monitoring Costs (30 year duration):	$0
Total Estimated Present Worth Cost:	$0

The No Action Alternative is considered in accordance with NCP requirements and provides a baseline for comparison with other alternatives. If this alternative was implemented, the current status of the Site would remain unchanged. Institutional controls would not be implemented to restrict future Site development or use. Engineering controls would not be implemented to prevent Site access or exposure to Site contaminants. Although existing security fencing at the LAI Facility and warning signage posted at Old Mill Pond would remain, there would be no assurance that they would be monitored or maintained.

Alternative 32: Excavation, Off-site Disposal, and Backfill

Estimated Capital Costs:	$770,000
Estimated O&M Costs (30 year duration):	$0
Estimated Long-Term Monitoring Costs (30 year duration):	$0
Total Estimated Present Worth Cost:	$770,000

The objectives of this alternative are to prevent or minimize future human exposure to contaminated soil and to reduce adverse impacts to ecological receptors. Alternative S2 would include the following major components:

- Pre-design investigation
- Excavation of LAI Facility soils and catch basin sediments exceeding PRGs
- Post remediation sampling to verify achievement of PRGs

- Disposal of excavated soils in accordance with applicable regulatory requirements at off-site facilities
- Backfilling of excavated areas with clean fill
- Evaluation and remediation of Electrical Transformers remaining at the LAI Facility
- Institutional controls

Under Alternative S2, a pre-design. investigation would be performed to further delineate the areal extent of PCB contamination in soil, and the area and volume of contaminated soil would be more accurately determined during the RD. The identified locations of PCB contamination in soil to be removed at the LAI Facility are displayed in Appendix I Figure 4.

This alternative includes the removal of soils exhibiting contaminant concentrations above PRGs. Excavated soils with a PCB concentration exceeding the PRG of 1,000 µg/kg (the New York State TAGM Soil Cleanup Objective) would be transported off-Site and disposed at an appropriate facility. The estimated quantity to be excavated includes 2,006 cubic yards (CY) (3,010 tons) of surface soils and 25 CY (38 tons) of catch basin sediments, for a total, excavation volume of 2,031 CY (3,048 tons). Contaminated soils would be excavated using standard construction equipment.

Post-excavation sampling of the excavated areas prior to backfill would need to be performed in order to verify achievement of the PRGs.

Waste characterization sampling would be performed to determine if the excavated soil needs to be treated to meet RCRA Land Disposal Requirements prior to disposal in a Subtitle C facility. Existing analytical results suggest that PCB-impacted soils which are excavated can likely be landfilled as non-hazardous waste. In the event that some excavated materials are classified as hazardous waste, they would be disposed at a hazardous waste landfill.

Storm water run-on and run-off would be controlled at excavation areas during remedial construction by installing temporary storm water/erosion control features. Dust would be controlled through the use of water or commercial dust suppressants.

The excavation would be backfilled with common fill, with an uppermost 6-inch topsoil layer. The backfilled area would then be graded to allow for storm water run-off. Backfilled areas would be seeded with grass to stabilize soil. Areas formerly covered with asphalt would be repaved following backfill.

Additional LAI Facility catch basins will be evaluated and sediments will be removed if cleanup objectives are exceeded.

There exists approximately 30 electrical transformers remaining at the LAI Facility which will require evaluation for leakage and presence of PCBs. Remedial actions to address the transformers will be taken if cleanup objectives are exceeded.

Institutional controls consisting of an environmental easement/restrictive covenant filed in the property records of Suffolk County that will limit the use of the active industrial area to commercial and/or industrial uses only. Any new or renovated building or on-Site structure that will be occupied in the future should be evaluated for soil vapor intrusion.

It is estimated that construction for this alternative could be completed within several months of mobilization. No post-remediation monitoring would be required under this alternative. This alternative has a present worth of $770,000.

Groundwater Remedial Alternatives

Alternative GW1: No Action

Estimated Capital Costs:	$0
Estimated O&M Costs (30 year duration):	$0
Estimated Long-Term Monitoring Costs (30 year duration):	$0
Total Estimated Present Worth Cost:	$0

The No Action alternative was retained for comparison purposes as required by the NCP. No remedial actions would be implemented as part of this alternative. Groundwater would continue to migrate and contamination would continue to attenuate through dilution, dispersion, and limited biodegradation. This alternative does not include institutional controls or long-term groundwater monitoring.

Because this alternative would result in contaminants remaining on-Site, CERCLA requires that the Site be reviewed at least once every five years. If justified by the review, additional remedial actions may be implemented in the future.

Alternative GW2: Institutional/Engineering Controls/Long-term Monitoring

Estimated Capital Costs:	$37,148
Estimated O&M Costs (30 year duration):	$0
Estimated Long-Term Monitoring Costs (30 year duration):	$1,727,897
Total Estimated Present Worth Cost:	$1,800,000

Alternative GW2 consists of the following major components:

- Institutional and engineering controls
- Long-term groundwater and surface water monitoring
- Continuation of Vapor Intrusion Evaluation and potential remediation of structures
- Periodic site reviews

A Site Management Plan (SMP) will be developed to provide for the proper management of all Site remedy components post-construction, such as institutional controls, and shall also include: (a) monitoring of Site groundwater to ensure that, following the implementation of the groundwater remedy, the contamination is attenuating and groundwater quality continues to improve; (b) an inventory of any use restrictions on the Site; (c). necessary provisions for ensuring the easement/covenant remains in place and is effective; (d) provision for any operation and maintenance required of the components of the remedy, and (e) the requirement that the owner or person implementing the remedy submit periodic certifications that the institutional and engineering controls are in place.

Institutional controls would include continued reliance on existing Suffolk County Department of Health Services (SCDHS) regulations that require new residences and businesses to hook up to

public water supplies whenever public water mains are reasonably available. Where such mains are not available, the SCDHS regulations require proposed wells for new residences and businesses to be tested for water quality prior to use. For certain contaminant ranges, appropriate treatment is to be provided. Application of these regulations. should minimize the potential for exposure to contaminated drinking water. It is assumed that Suffolk County would continue to enforce its requirements for at least as long as the groundwater is affected by site-related contamination.

Engineering controls would include placing a fence around Old Mill Pond and signs at Old Mill Pond and Old Mill Creek to minimize potential exposure to contaminated surface water.

A long-term groundwater and surface water monitoring program would be instituted to collect data on contaminant concentrations and movement at the study area. Ten existing multiport monitoring wells would be used for the long-term groundwater monitoring program. The same surface water sampling-locations at Old Mill Pond and Old Mill Creek selected during the RI would be considered for monitoring of surface water quality.

The monitoring data would be used to assess the migration and attenuation of the groundwater contamination over time and to monitor the effectiveness of remedial action. A review of Site conditions would be conducted every five years using data obtained from the annual sampling program. The Site reviews would include an evaluation of the extent of contamination and an assessment of contaminant migration and attenuation over time. The long-term groundwater monitoring program would be modified based on the monitoring results.

EPA is currently conducting an investigation of vapor intrusion into structures within the area that could potentially be affected by the groundwater contamination plume, and would implement an appropriate remedy (such as sub slab ventilation systems) based on the investigation results.

For cost comparison purposes, it is assumed that this alternative would be performed for a period of 30 years.

Because this alternative would result in contaminants remaining on-Site, CERCLA requires that the Site be reviewed at least once every five years. If justified by the review, additional remedial actions may be implemented in the future. The five-year review(s) would determine if and when institutional and engineering controls and long-term monitoring should be discontinued.

Alternative GW3: Groundwater, Extraction/Treatment/Surface Recharge or Surface Water Discharge/Institutional Controls/Long-term Monitoring

Three cleanup options are considered under this alternative.

Alternative GW3 - Option 1

Estimated Capital Costs:	$4,855,345
Estimated O&M Costs (30 year duration):	$6,433,023
Estimated Long-Term Monitoring Costs (30 year duration):	$1,727,897
Total Estimated Present Worth Cost:	$13,000,000

One groundwater extraction and treatment system would be installed within the plume area near Old Mill Pond to capture VOC contaminated groundwater and prevent contaminant migration toward

Port Jefferson Harbor. The pumping would also lower the water table and intercept the contaminated groundwater, preventing contaminated groundwater from directly discharging into Old Mill Pond and Old Mill Creek. Extracted groundwater would be treated ex-situ and discharged into Old Mill Creek and potentially Old Mill Pond. This remedial option would also eliminate the pathway of direct human contact with groundwater contaminants via contaminated surface water. This alternative has a present worth of $13.04 million. For cost assessment purposes, the conventional planning period of 30 years has been utilized. The actual operational duration of this option may be longer than 30 years.

For additional components included in this option, see the section "General Requirements for Alternative GW3" below.

Alternative GW3 - Option 2

Estimated Capital Costs:	$6,820,552
Estimated O&M Costs (30 year duration):	$10,986,267
Estimated Long-Term Monitoring Costs (30 year duration):	$1,727,897
Total Estimated Present Worth Cost:	$19,500,000

Groundwater extraction and treatment systems would be installed at the LAI Facility and within the plume area near Old Mill Pond. The system at the Old Mill Pond would be the same as in Option 1. The system at the LAI Facility would prevent contaminated groundwater from migrating downgradient into the Old Mill Pond residential area; treated groundwater would be. discharged into an on-Site recharge basin. Option 2 could potentially reduce the total volume of contaminated groundwater requiring treatment by extracting groundwater exhibiting higher-concentrations of contaminants from an area closer to the area of initial release. Option 2 may also shorten the time for residual contamination to migrate, resulting in a shorter estimated duration than Option 1. This alternative has a present worth of $19.56 million. For cost assessment purposes the conventional planning period of 30 years has been utilized. The actual operational duration of this option may be longer than 30 years.

For additional components included in this option, see the section "General Requirements for Alternative GW3" below.

Alternative GW3 - Option 3

Estimated Capital Costs:	$11,361,852
Estimated O&M Costs (30 year duration):	$10,318,820
Estimated Long-Term Monitoring Costs (30 year duration):	$1,727,897
Total Estimated Present Worth Cost:	$23,400,000

Groundwater extraction and treatment systems would be installed both at the LAI Facility and within the plume area near Old Mill Pond. Additionally, in-situ chemical oxidation technology would be applied as an initial enhancement within the area of high TCE concentration at the LAI Facility. For the chemical oxidation technology, permanganate is very effective in oxidizing TCE and PCE and can remain active for several months in the subsurface. The soil type at the LAI Site (mainly sand and gravel with some silt) may have a relatively low soil oxidant demand. Other oxidation and enhancement technologies would also be evaluated during the remedial design stage. A treatability study may be required prior to design and implementation of remediation.

The following components would be included in this Alternative:

- Chemical injection well configuration at LAI Facility
- Chemical injection operation and monitoring

Chemical Oxidant Injection Well Configuration and Operation

For cost estimating purposes for Option 3, 14 chemical oxidant injection wells would be placed in the high TCE area at the LAI Facility and two rounds of chemical oxidant-injection are proposed. The first round of injection would destroy any dissolved and easily accessible contaminants. If there is any residual VOC contamination in the low. permeability zones, it could dissolve during the second round of application that would be designed to target areas with residual contamination. Results from groundwater samples collected after the first chemical oxidant injection event would be used in addition to water quality monitoring parameters to determine the strategy for additional injection implemented to target the remaining contaminants in the subsurface. The actual number of injections, the chemical usage, and the well spacing would be refined during the remedial design and remedial action.

The extraction system at the LAI Facility could be operated during injection, recirculating groundwater and potentially improving control of the movement of the oxidant within the subsurface, or operated for a period between injections based on monitoring data. However, operational parameters would be determined during the remedial design and remedial action. For cost estimating purposes, the operation of the groundwater treatment systems under Option 3 will be assumed to be identical to that under Option 2.

Alternative GW3-Option 3 could potentially reduce the total mass of contaminated groundwater requiring pumping and treatment by destroying contaminants in-situ within higher concentration areas, and further lessen the time for residual contamination to migrate, resulting in a shorter overall cleanup time for the LAI Facility than for Options 1 and 2. This alternative has a present worth of $23.4 million. Preliminary evaluation of the time required to achieve, cleanup objectives indicate that the treatment system operation at the LAI Facility could be shortened by 10 years. The operational duration of this option is estimated at 20 years for the treatment system at the LAI Facility and 30 years overall.

For additional components included in this option, see "General Requirements for Alternative GW3" below.

General Requirements for Alternative GW3

All Options under Alternative GW3 include the following major components:

- Pre-design investigation
- Groundwater modeling
- Groundwater extraction, treatment and discharge of treated, water
- Long-term groundwater and surface water monitoring
- Institutional and engineering controls
- Periodic site reviews

Pre-design Investigation

At the LAI Facility, additional borings would be advanced and samples would be collected from within the area of relatively high TCE concentration in groundwater to further investigate for the possible presence and location of residual soil contamination. In the area between Old Mill Pond and Port Jefferson Harbor, additional data would, be needed to define hydrogeologic conditions and groundwater contamination. Any additional required information would be defined in the remedial design work plan and collected during the pre-design investigation. Additional groundwater sampling would also be conducted as part of the pre-design investigation.

Groundwater Modeling

Groundwater modeling would be considered during development of the pre-design investigation to assist in the placement of extraction, monitoring, injection and observation wells.

Groundwater Extraction and Discharge of Treated Water

The number and location of extraction wells, configuration of each extraction well, pumping rates, potential salt water intrusion impacts, groundwater discharge alternatives as well as other design parameters would be evaluated using a 3-D model as part of the pre-design investigation and remedial design. At the LAI Facility, treated groundwater would be discharged to a recharge basin located at the southeast corner of the LAI Facility. At the plume area near Old Mill Pond, treated water would be discharged into Old Mill Creek and/or Old Mill Pond. Discharge to both surface water and groundwater would be subject to NYSDEC permit requirements.

Groundwater Treatment

The groundwater treatment system(s) would consist of the following components: 1) influent flow equalization; 2) green sand filtration or bag filtration; 3) air stripping; 4) vapor phase carbon adsorption(if needed); and 5) permanganate impregnated zeolite adsorption (optional).

According to the Office of Solid Waste and Emergency Response (OSWER) Directive 9355.0-28, Control of Air Emissions from Superfund Air Strippers and Superfund Sites (EPA 1989), off-gas treatment is not necessary if total VOC emissions are below 15 pounds per day (lb/day). The estimated total VOC emissions from the air stripper at the LAI Facility would be less than 1.8 lb/day; the estimated total VOC emissions from the air stripper near Old Mill Pond would be less than 1.6 lb/day (Appendix D). Both estimates are based on the maximum detected VOC concentrations in groundwater. Although vapor treatment would not be required per the OSWER Directive, a NYSDEC Air Guide 1 analysis would be performed before a final determination could be made regarding. any requirement for air treatment.

Maintenance of extraction wells, pumps, filters, and the air strippers would be conducted, as required, during the operation of the groundwater extraction and treatment system. Periodic samples would be collected from various sample locations along the groundwater treatment train to verify the effectiveness of each treatment process.

Effluent samples would be collected to verify compliance with the NYSDEC surface water or groundwater discharge requirements and the State Pollution Discharge Elimination System (SPDES)

effluent criteria. Results from long-term groundwater monitoring would be used to evaluate the performance and to adjust operating parameters for the pump-and-treat system, as necessary.

Long-term Groundwater Monitoring

Long-term groundwater monitoring would be implemented as described under Alternative GW2.

Institutional and Engineering Controls

As described in Alternative GW2 a SMP, institutional and engineering controls would be implemented.

Periodic Site Reviews

Hazardous substances remain at this Site above levels that would allow for unlimited use and unrestricted exposure. Pursuant to Section 121 (c) of CERCLA, EPA will review site remedies no less often than every five years. The first five-year review is due within five years of the date that construction is initiated for the remedial action that allows hazardous substances to remain on site. The current expectation is that construction will be initiated by the year 2008 and the first five-year review will be due before the year 2013.

For both Option 1 and Option 2, the operational duration is assumed to be 30 years, since both options have the potential to exceed 30 years at both the LAI Facility and Old Mill Pond. For Option 3, although the operational duration for the treatment system at the LAI Facility is estimated to be approximately 20 years, the overall operational duration is also assumed to be 30 years based on the potential of the operations at Old Mill Pond to exceed 30 years. The enhancement of remediation via in-situ chemical oxidation at the source of the release under Option 3 further accelerates the remedial process and provides less uncertainty than Option 2 (and Option 1) regarding the duration of remediation.

Alternative GW4: In-situ Chemical Oxidation/Groundwater Extraction/Treatment/Institutional and Engineering Controls/Long-Term Monitoring

Estimated Capital Costs:	$15,720,845
Estimated O&M Costs (30 year duration):	$6,293,795
Estimated Long-Term Monitoring Costs (30 year duration):	$1,727,891
Total Estimated Present Worth Cost:	$23,750,000

Alternative GW4 consist of the following major components:

- Pre-design investigation
- Groundwater modeling
- Chemical injection well configuration at LAI Facility
- Chemical injection operation
- Monitoring of in-situ chemical oxidation
- Groundwater extraction, treatment and discharge of treated water
- Institutional and engineering controls
- Long-term groundwater and surface water monitoring
- Periodic site reviews

Alternative GW4 involves the application of in-situ chemical oxidation technology at the LAI Facility and installation of a groundwater extraction and treatment system within the plume area near Old Mill Pond. Using in-situ chemical oxidation at the LAI Facility could mineralize dissolved TCE, PCE, and cis-DCE in groundwater within a short period upon contact with the contaminants. In the event that extensive residual contaminant masses exist in relatively low permeability zones, treatment via chemical oxidation could significantly increase the mass transfer between the contamination and groundwater, subsequently reducing the duration of remediation at the LAI Facility. Oxidation technologies would be evaluated during the remedial design stage, and a treatability study may be required prior to design and implementation of remediation.. Two rounds of chemical injection are assumed. Results from groundwater samples collected after the first chemical injection event would be used to determine the strategy for the second injection.

The groundwater treatment system within the plume area near Old Mill Pond would be constructed as described under Alternative GW3 -Option 1. This alternative, while similar, is distinguished from Alternative GW3-Option 3 in that it provides for a more extensive application of the in-situ chemical oxidation technology and in addition would provide a groundwater extraction and treatment system only within the plume area near Old Mill Pond. For this alternative, the pre-design investigation would be performed as for Alternative GW3.

Institutional and engineering controls and long term monitoring would be implemented as described for Alternative GW2. This alternative has a present worth of $23.75 million. For cost assessment purposes the conventional planning period of 30 years has been utilized. The actual operational duration of this option may be longer than 30 years.

Hazardous substances remain at this Site above levels that would allow for unlimited use and unrestricted exposure. Pursuant to Section 121 (c) of CERCLA, EPA will review site remedies no less often than every five years. The first five-year review is due; within five years of the date that construction is initiated for the remedial action that allows hazardous substances to remain on site. The current expectation is that construction will be initiated by the year 2008 and the first five-year review will be due before the year 2013.

As described in Alternative GW2 a SMP, institutional and engineering controls would be implemented.

Alternative GW5: In-situ Biodegradation/Institutional and Engineering Controls and Long-term Monitoring

This alternative involves the implementation of enhanced anaerobic biodegradation (EAB) of VOCs at the LAI Facility and near Old Mill Pond via the injection of electron donors and nutrients into areas with relatively high contaminant concentrations. Under this alternative, three options are considered.

Alternative GW5 - Option 1

Estimated Capital Costs:	$5,150,000
Estimated O&M and Long-Term Monitoring Costs (30 year duration):	$17,850,000
Total Estimated Present Worth Cost:	$23,000,000

Option 1 includes EAB systems at both the LAI Facility and the area near Old Mill Pond.

Alternative GW5 - Option 2

Estimated Capital Costs:	$7,100,000
Estimated O&M and Long-Term Monitoring Costs (30 year duration):	$19,900,000
Total Estimated Present Worth Cost:	$27,000,000

Option 2 includes the systems described in Option 1, with a groundwater treatment system at the LAI Facility to treat extracted groundwater before adding amendments and re-injecting to the. aquifer.

Alternative GW 5 - Option 3

Estimated Capital Costs:	$7,400,000
Estimated O&M and Long-Term Monitoring Costs (30 year duration):	$13,500,000
Total Estimated Present Worth Cost:	$20,900,000

Option 3 includes the EAB system at the LAI Facility area as under Option 1, and a groundwater treatment system near Old Mill Pond as under Alternative GW3 - Option 1.

Alternative GW5 - All Options

Major components under this alternative consists of the following:

- Pre-design investigation
- Groundwater modeling
- Groundwater extraction wells
- Electron donor injection wells
- Enhanced bioremediation
- Groundwater treatment (Under Options 2 and 3)
- Institutional and engineering controls
- Long-term monitoring
- Periodic review

A pre-design investigation and groundwater modeling would be performed as described under Alternative GW3.

On-Site Injection and/or Groundwater Extraction at the LAI Facility

This alternative would be implemented by installing and operating a recirculation system to remediate subsurface contamination at the LAI Facility. One benefit of the design of the recirculation system is its flexibility. It is expected that relatively rapid remediation would occur beneath the buildings. Once the area under the buildings has been remediated, the operating strategy could be changed such that remediation could be focused on the area downgradient of the buildings. Under Option 1, no above ground treatment is planned for the extracted water prior to its reinjection. As a conservative measure, a treatment system similar to what is described under Alternative GW3 is included as part of Option 2.

On-Site Injection at Plume Area near Old Mill Pond

Seven injection wells are proposed to deliver the electron donor to the groundwater at the downgradient plume area near Old Mill. Pond. The injection well locations and the configuration and injection flow rate of each well would be evaluated and finalized during the remedial design.

Enhanced Bioremediation

Bioremediation would be implemented by stimulation EAB. The amendment would be an electron donor such as lactate or dairy whey powder. A bench-scale treatability study would be conducted to determine which EAB amendment is best for the LAI Site. Periodic sampling within the treatment zone would be required to monitor and evaluate the effectiveness of EAB. The implementation of EAB would require the monitoring of additional groundwater quality parameters including electron acceptors (sulfate, iron, etc.), ethene, methane, ethane, dissolved organic carbon, etc. It is assumed that four additional monitoring wells would be installed at the LAI Facility area and that three additional monitoring wells would be installed at the downgradient plume area near Old Mill Pond.

For the system at the LAI Facility, the recirculation system would be used to periodically inject amendments to stimulate biodegradation. For the downgradient area near Old Mill Pond, injection wells would be used to periodically deliver amendments to stimulate biodegradation.

Groundwater Treatment

If treatment of the extracted groundwater is required prior to re-injection into the treatment zone at the LAI Facility, a groundwater treatment system would be required (Option 2 of this alternative). This groundwater treatment system would be similar to the system described under Alternative GW3. Capital cost and annual O&M cost of groundwater treatment system are included as Option 2 under this alternative.

Groundwater Extraction and Treatment in lieu of EAB at the Old Mill Pond Area (Option 3 of this Alternative)

In the EAB process, vinyl chloride would be generated as an intermediate product. Accumulation of vinyl chloride during EAB application is very unlikely and has not been reported. However, because there is a residential area near Old Mill Pond, a groundwater treatment system at the Old Mill Pond area, in lieu of using EAB in the Old Mill Pond area, is proposed to address this concern under this option. The groundwater treatment system would be identical to the system described under Alternative GW3, Option 1.

For this alternative, a SMP would be developed and institutional controls and long-term monitoring would be implemented as described under Alternative GW2. For cost assessment purposes, the conventional planning period of 30 years has been utilized. The actual operational duration of this option may be longer than 30 years.

Hazardous substances remain at this Site above levels that would allow for unlimited use and unrestricted exposure. Pursuant to Section 121 (c) of CERCLA, EPA will review site remedies no less often than every five years. The first five-year review is due within five years of the date that construction is initiated for the remedial action that allows hazardous substances to remain on site. The current expectation is that construction will be initiated by the year 2008 and the first five-year review will be due before the year 2013.

COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting a remedy, EPA considers the factors set out in Section 121 of CERCLA, 42 U.S.C. § 9261, by conducting a detailed analysis of the remedial alternatives pursuant to the NCP, 40 CFR § 300.430(e)(9) and Office of Solid Waste and Emergency Response (OSWER) Directive 9355.3-01. The detailed analysis consists of an assessment of the alternatives against each of nine evaluation criteria and comparative analysis focusing upon the relative performance of each alternative against those criteria.

The following "threshold" criteria are the most important and must be satisfied by any alternative in order to be eligible for selection:

1. Overall protection of human health and the environment addresses whether or not a remedy provides adequate protection, and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. Compliance with ARARs addresses whether or not a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and regulations or provide grounds for invoking a waiver. Other federal or state advisories, criteria, or guidance are To-Be-Considered (TBCs). TBCs are not required by the NCP, but may be very useful in determining what is protective of a Site or how to carry out certain actions or requirements.

The following "primary balancing" criteria are used to make comparisons and to identify the major tradeoffs between alternatives:

3. Long-term effectiveness and permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

4. Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies,, with respect to these parameters, a remedy may employ.

5. Short-term effectiveness addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

6. Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

7. Cost includes estimated capital and O&M costs, and net present-worth costs.

The following "modifying" criteria are used in the final evaluation of the remedial alternatives after the formal comment period, and may prompt modification of the preferred remedy that was presented in the Proposed Plan:

8. State acceptance indicates whether, based on its review of the RI/FS reports and Proposed Plan, the State concurs with, opposes, or has no comments on the selected remedy.

9. Community acceptance refers to the public's general response to the alternatives described in the RI/FS reports and Proposed Plan.

1. Overall Protection of Human Health and the Environment

Soil Alternatives

In the LAI HHRA it was indicated that there is a potential for non-carcinogenic effects from PCBs in the LAI Facility surface soil for a future child resident. The LAI SLERA indicates PCBs may pose risks to ecological receptors. Therefore, Alternative SI, the No Action alternative, would not be considered protective of human health. Alternative S1 would not be protective of the environment either as it would not prevent potential exposure of ecological receptors to PCB-contaminated surface soil. Alternative S2 would remove PCB-contaminated soil to appropriate off-site disposal facilities. Residential reuse of the Outlying Parcel is being considered for the future, and would eliminate, it as an ecological habitat. Alternative S2. is therefore protective of human health and the environment by eliminating current and future exposure to contaminated soil.

Groundwater Alternatives

Alternative GW1 would not meet RAOs and would not provide protection of human health and the environment, since contamination would remain in the groundwater for a long time in the future, and no mechanism would be implemented to (1) prevent use or exposure to contaminated groundwater or surface waters impacted by contaminated groundwater or (2) reduce the toxicity, mobility, and volume of contamination. Alternative GW2 would eliminate potential exposure pathways through institutional controls, preventing inhalation, ingestion, and direct contact of contaminated groundwater and direct contact of contaminated surface water through fencing and warning signs; potential vapor intrusion would continue to be addressed by EPA. However, Alternative GW2 would not be protective with respect to the environment, since it does not minimize the migration of contaminants or provide active removal mechanisms to restore the groundwater quality. All Options under Alternative , GW3 would be protective of human health and eventually the environment, and would meet RAOs by preventing human exposure pathways to contaminants, minimizing the migration of contaminated groundwater, and eventually restoring groundwater quality. Options 1 and 2 would rely on proven, active ex-situ treatment processes to reduce the toxicity, mobility, and volume of the contaminants at Old Mill Pond (Option 1) or at Old Mill Pond and the LAI Facility (Option 2). Alternative GW3 - Option 3 would, in addition to proven active extraction and ex-situ treatment processes, utilize in-situ treatment to destroy contaminants within high concentration areas, thereby reducing the toxicity, mobility, and volume of the contaminants and minimizing contaminant migration from the LAI Facility via in-situ destruction of residual contamination. Alternative GW4 would be protective of human health and the environment, preventing human exposure through institutional controls, minimizing contaminant migration via the operation of a pump-and-treat system near Old Mill Pond, and minimizing contaminant migration from the LAI Facility via in-situ destruction of residual contamination. GW5 would be protective of human health and the environment, preventing human exposure through institutional controls, minimizing contaminant migration near Old Mill Pond via the operation of a groundwater treatment system or in-situ destruction, and minimizing contaminant migration from the LAI Facility via in-situ destruction of contaminants.

2. Compliance with applicable or relevant and appropriate requirements (ARARs)

Soil Alternatives

While there are no chemical-specific ARARs for contaminated soil, the NYSDEC TAGM Objectives for PCBs of 1,000 µg/kg was utilized as the PRG. Alternative S1 would not meet RAOs and PRGs. Alternative S2 would achieve RAOs and meet PRGs since contaminated materials exceeding the soil PRGs would be removed. ARARs and other environmental criteria, advisories or guidances for the Site are presented in Appendix II Table 13.

Groundwater Alternatives

Alternatives GW1 and GW2 would not attain the NYS Groundwater Quality Standards in a reasonable time frame. Alternative GW3 - Option 1 provides treatment at the Old Mill Pond area only and might not be able to attain these standards in 30 years for two reasons: (1) it will require 30 years for all the dissolved contaminants to reach the groundwater extraction and treatment system near Old Mill Pond; and (2) the possible residual soil contamination at the LAI Facility could act as a continuous source to the groundwater plume. Alternative GW3 - Option 2 might be able to attain the groundwater standards in 30 years at the downgradient plume area near Old Mill Pond, however, the time frame to achieve groundwater standards at the LAI Facility would be difficult to predict. Alternative GW3 - Option 3 also might be able to attain these standards in 30 years at the downgradient plume area near Old Mill Pond, yet Option 3 provides the estimate of least duration regarding the time frame to achieve groundwater standards at the LAI Facility. Preliminary evaluation suggests that only 20 years of operation may be required. Alternatives GW4 and GW5 could attain the groundwater standards in approximately 30 years. Alternatives GW4, GW5 and GW3- Option 3 would accelerate the cleanup time through active in-situ treatment at the LAI Facility to remove the residual soil contamination. The remaining dissolved plume would be expected to flush out to the downgradient plume area near Old Mill Pond and be treated in approximately 30 years.

3. Long-term Effectiveness and Permanence

Soil Alternatives

Alternative S1 would not achieve long-term effectiveness and permanence. Alternative S2 would be effective in the long-term. Due to the removal and transportation of contaminants off-site, Alternative S2 offers permanence to the greatest degree.

Groundwater Alternatives

Alternative GW1 would not be effective or permanent, since the contaminants would not be destroyed and there would be no mechanism to prevent current and future exposure to contaminated groundwater. Alternative GW2 would be effective in terms of restricting the exposure pathway, but not permanent because contaminants would remain in groundwater for a long time. Alternative GW3 - Options 1 and 2 would be effective and permanent since the contaminants would be removed from groundwater and treated ex-situ; Option 3 under Alternative GW3 would also be effective and permanent and remediate contaminants in-situ. Alternatives GW4 and GW5 would be effective and permanent since the contaminants would be remediated using in-situ treatment.

4. Reduction of Toxicity, Mobility or Volume (TMV) of Contaminants Through Treatment

Soil Alternatives

Alternative S1 would not reduce TMV. Alternative S2 would reduce potential mobility by placing contaminants in an appropriate disposal facility. Only Alternative S2 would decrease the on-Site contaminant mass.

Groundwater Alternatives

Alternatives GW1 and GW2 would not reduce the VOCs through treatment as no active treatment of contaminated groundwater occurs. Alternatives GW3, GW4 and GW5 would actively reduce toxicity and volume of contamination through treatment, which is preferred by CERCLA.

5. Short-term Effectiveness

Soil Alternatives

Alternative S1 would have no adverse potential impacts because no action would be taken at the Site and construction workers would not be subjected to any potential risks. Alternative S2 would have potential short-term impact to the community due to nuisances associated with construction (e.g., increased traffic and noise) and to the construction workers due to handling of contaminated material. However, air monitoring, engineering controls, and/or appropriate worker protective equipment would be used to protect the community and workers. Since soil excavation would only occur on the LAI Facility, community impacts should be limited to increased truck traffic and noise for an estimated 2 to 6 month period of excavation.

Groundwater Alternatives

Alternative GW1 would not have any potential adverse impacts to workers or the community protection as no remedial action would occur. There would be potential short-term inconveniences to nearby residences for Alternatives GW2 to GW5, yet no major adverse impacts would be expected. Air monitoring, engineering controls, and appropriate worker protective equipment would be used to protect the community and workers for Alternatives GW2 to GW5.

6. Implementability

Soil Alternatives

Alternative S1 would be the easier alternative to implement both technically and administratively because no work would be performed at the Site. Alternative S2 would be more difficult to implement since there are excavation/earthwork, restoration, and disposal facility issues to resolve.

Groundwater Alternatives

Alternative GW1 would be easiest both technically and administratively to implement. Alternative GW2 would be the second easiest to implement. Alternatives GW3, GW4, and GW5 could be technically and administratively difficult to implement because of the space limitations and community acceptance of the locations of the treatment plants which would need to be constructed.

Technically, alternatives GW3, GW4 and GW5 would be more difficult to implement than GW1 and GW2. Since accurate injection of in-situ treatment materials to target area locations and depths are a relatively important factor and alternatives GW4 and GW5 rely to a greater extent on this factor, than GW3 - Option 3, it would be less difficult to implement. Alternatives GW3 - Option 3, GW4, and GW5 may be easier to implement if experienced vendors are selected for implementation of the in-situ processes.

7. Cost

Soil Alternatives

Alternative S1 has no cost. The present worth for Alternative S2 is approximately $770,000.

Groundwater Alternatives

A comparative summary of the cost estimates for each groundwater alternative is presented in Appendix II Table 10.

8. State/Support Agency Acceptance

The New York State Department of Environmental Conservation in consultation with the New York State Department of Health concurs with the selected remedy.

9. Community Acceptance

During the public comment period, the community expressed its support for the Selected Remedy. Specifically, the Suffolk County Department of Health Services, the Town of Brookhaven, the Village of Port Jefferson and the Civic Association of the Setaukets support the selected remedy. The attached Responsiveness Summary summarizes all of the community comments on the Proposed Plan.

PRINCIPAL THREAT WASTE

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a) (1) (iii) (A)). Identifying principal threat wastes combines concepts of both hazard and risk. In general, principal threat wastes are, those source materials considered to be highly toxic or highly mobile that generally cannot be contained in a reliable manner or would present a significant risk to human health or the environment should exposure occur. Conversely, non-principal threat wastes are those source, materials that generally can be reliably contained and that would present only a low risk in the event of exposure. The manner in which principal threats are addressed generally will determine whether the statutory preference for treatment as a principal element is satisfied.

EPA considers the contaminated soil and groundwater at the Site to meet the definition of "principal threat wastes." Site soils constitute source materials that may be transported via surface run-off to on-Site catch basins resulting in metals and PCB contamination of surface water and sediment in these structures. Groundwater discharge into surface water and sediment is a transport mechanism for VOCs in groundwater to impact Old Mill Pond, Old Mill Creek, and potentially, Port Jefferson

Harbor. The soil removal and groundwater treatment actions chosen in this ROD will meet the "principal threat" waste requirements described above.

SELECTED REMEDY

Based upon consideration of the requirements of. CERCLA, the detailed analysis of the alternatives, and public comments, EPA has determined and the State of New York has concurred that Soil Alternative 32: Excavation, Off-site Disposal, and Backfill, along with Groundwater Alternative GW3 - Option 3: Groundwater Extraction/Treatment/Chemical Oxidation enhancement/Surface Recharge or Surface Water Discharge/Institutional Controls/Long-term Monitoring, form the appropriate remedy for addressing the contaminants in Site soil and groundwater in that they best satisfy the requirements of CERCLA Section 121, and provide the best balance of tradeoffs among the remedial alternatives with respect to the nine evaluation criteria in the NCP 40 CFR § 300.430 (e) (9).

Summary of the Rationale for the Selected Remedy

While Alternative S2 may involve potential short-term community impacts in the form of nuisances associated with construction, Alternative S2 will be protective of human health and the environment. Alternative S2 will provide a permanent solution, and will achieve the 1,000 µg/kg soil cleanup objective for PCBs. Therefore, EPA and NYSDEC believe that Alternative S2 will effectuate the soil cleanup while providing the best balance of tradeoffs with respect to the evaluating criteria.

Alternative GW3 - Option 3 will provide the greatest degree of protection by preventing migration via hydraulic control and reducing contamination both near the release at the LAI Facility and at the downgradient plume area near Old Mill Pond, while focusing on in-situ active treatment at the LAI Facility to aggressively remediate areas of potential residual soil contamination.

The groundwater extraction and treatment system near Old Mill Pond will prevent continuous contaminant migration into the harbor via groundwater and prevent contaminated groundwater from directly discharging into Old Mill Pond and Old Mill Creek. The groundwater extraction and treatment system at the LAI Facility will prevent contaminated groundwater from continuing to migrate downgradient toward Old Mill Pond, and thus potentially reducing the total volume of contaminated groundwater requiring treatment by extracting groundwater exhibiting higher concentrations of contaminants from an area closer to the location of the release. The application of in-situ chemical oxidation as an initial enhancement within the area of high TCE concentration could potentially reduce the total mass of contaminated groundwater requiring pumping and treatment, and further lessen the time for residual contamination to migrate.

Therefore, EPA and NYSDEC believe that Alternative GW3 - Option 3 will minimize the migration of contaminated groundwater at the Site, while providing the best balance of tradeoffs among the alternatives with respect to the evaluation criteria.

The selected remedy will be protective of human health and the environment, provide long-term effectiveness, will achieve the ARARs in a reasonable time frame, and be cost-effective. EPA and NYSDEC also believe that the selected remedy will treat principal threats and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.

Description of Selected Remedy

Soil Alternative S2 - Excavation, Off-site Disposal, and Backfill

Alternative S2 would include the following major components:

- Pre-design investigation
- Excavation of LAI Facility soils and LAI Facility catch basin sediments exceeding PRGs
- Post remediation sampling to verify achievement of PRGs
- Disposal of excavated soils in accordance with applicable regulatory requirements at off-site facilities
- Backfilling of excavated areas with clean fill
- Evaluation and remediation of Electrical Transformers
- Institutional controls

Under Alternative S2, a pre-design investigation would be performed to further delineate the areal extent of PCB contamination in soil, and the area and volume of contaminated soil would be more accurately determined during the RD.

This alternative includes the removal of soils exhibiting contaminant concentrations above PRGs (see Appendix I Figure 4). Excavated soil, with a PCB concentration exceeding the PRG of 1,000 µg/kg (the New York State TAGM Soil Cleanup Objective) would be transported off-site and disposed at an appropriate facility. The estimated quantity to be excavated includes 2,006 cubic yards (CY)(3,010 tons) of surface soils and 25 CY (38 tons) of catch basin sediments, for a total excavation volume of 2,031 CY (3,048 tons). Contaminated soils would be excavated using standard construction equipment.

Post-excavation sampling of the excavated areas prior to backfill would need to be performed in order to verify achievement of the PRGs.

Waste characterization sampling would be performed to determine if the excavated soil needs to be treated to meet RCRA Land Disposal Requirements prior to disposal in a Subtitle C facility. Existing analytical results suggest that PCB-impacted soils which are excavated can likely be land filled as non-hazardous waste. In the event that some excavated materials are classified as hazardous waste, they would be disposed at a hazardous waste landfill.

Storm water run-on and run-off would be controlled at excavation areas during remedial construction by installing temporary storm water/erosion control features. Dust would be controlled through the use of water or commercial dust suppressants.

The excavation would be backfilled with common fill, with an. uppermost 6-inch topsoil layer. The backfilled area would then be graded to allow for storm water run-off. Backfilled areas would be seeded with grass to stabilize soil. Areas formerly covered with asphalt would be repaved following backfill.

Additional LAI Facility catch basins would be evaluated and sediments would be removed if cleanup objectives are exceeded.

There exists approximately 30 electrical transformers remaining at the LAI Facility which will require evaluation for leakage and presence of PCBs. Remedial actions to address the transformers would be taken if cleanup objectives are exceeded.

Institutional controls consisting of an environmental easement/restrictive covenant filed in the property records of Suffolk County that will limit the use of the active industrial area to commercial and/or industrial uses only. Any new or renovated building or on-Site structure that will be occupied in the future should be evaluated for soil vapor intrusion.

Groundwater Alternative GN3 - Option 3: Groundwater Extraction/Treatment/Chemical oxidant enhancement/Surface Recharge or Surface Water Discharge/Institutional Controls/Long-term Monitoring

Alternative GW3 - Option 3 would include the following major components:

- Pre-design investigation
- Groundwater modeling
- Chemical injection well configuration at LAI Facility
- Chemical injection operation and monitoring
- Groundwater extraction, treatment and discharge of treated water
- Institutional and engineering controls
- Long-term groundwater and surface water monitoring
- Periodic site reviews
- Continuation of vapor intrusion evaluation of structures

Pre-design Investigation

At the LAI Facility, additional borings will be advanced and screening samples will be collected from within, the area of relatively high concentration to further investigate for the possible presence of soil contamination. In the area between Old Mill Pond and Port Jefferson Harbor, additional data will be needed to define hydrogeologic conditions and groundwater contamination. Any additional required information will be defined in the remedial design work plan and collected during the pre-design investigation. Additional groundwater sampling would also be conducted as part of the pre-design investigation. Coastal zone, wetland and floodplains assessments will be conducted if impacted by the final location of the groundwater treatment system near Old Mill Pond.

Groundwater Modeling

Groundwater modeling will be considered during development of the pre-design investigation to assist in the placement of extraction, injection, monitoring, and observation wells.

Chemical Injection Well Configuration and Operation

In-situ chemical oxidation technology would be applied as an initial enhancement within the area of high TCE concentration at the LAI Facility (see Appendix I Figure 6). The soil type at the Site (mainly sand and gravel with some silt) may have a relatively low soil oxidant demand. Other oxidation and enhancement technologies will also be evaluated during the remedial design stage. A treatability study may be required prior to design and implementation of remediation.

14 chemical injection wells will be placed in the high TCE area at the LAI Facility and two rounds of chemical injection are proposed. The first round of injection will destroy any dissolved and easily accessible contaminants. If there is any residual VOC contamination in the low permeability zones, it would dissolve during the second round of application that will be designed to target areas with residual contamination. Results from groundwater samples collected after the first chemical injection event will be used in addition to water quality monitoring parameters to determine the strategy for additional injection implemented to target the remaining contaminants in the subsurface. The actual number of injections, the chemical usage, and the well spacing will be better determined during the remedial design and remedial action.

The extraction system at the LAI Facility could be operated during injection, recirculating groundwater and potentially improving control of the movement of the oxidant within the subsurface, or operated for a period between injections based on monitoring data. However, operational parameters will be determined during the remedial design and remedial action.

Groundwater Extraction and Discharge of Treated Water

Groundwater extraction and treatment systems will be installed both at the LAI Facility (see Appendix I Figure 5) and within the plume, area near Old Mill Pond (see Appendix I Figure 7). The groundwater extraction and treatment system at the LAI Facility will prevent contaminated groundwater from migrating off-site.

The number and location of extraction wells, configuration of each extraction well, pumping rates, potential salt water intrusion impacts, groundwater discharge alternatives as well as other design parameters will be evaluated using a 3-D model as part of the pre-design investigation and remedial design. At the LAI Facility, treated groundwater will be discharged to a recharge basin located at the southeast corner of the LAI Facility. At the Harbor area, treated water will be discharged to Old Mill Creek and/or Old Mill Pond. Discharge to both surface water and groundwater will be subject to NYSDEC permit requirements.

Groundwater Treatment

The groundwater treatment systems would consist of the following components: 1) influent flow equalization; 2) green sand filtration or bag filtration; 3) air stripping; 4) vapor phase carbon adsorption(if needed); and 5) permanganate impregnated zeolite adsorption (optional).

Maintenance of extraction wells, pumps, filters, and the air strippers will be conducted, as required, during the operation of the groundwater extraction and treatment systems. Periodic samples will be collected from various sample locations along the groundwater treatment train to verify the effectiveness of each treatment process.

Institutional and Engineering Controls

This alternative also includes institutional controls. Specifically, an environmental easement/ restrictive covenant will be filed in the property records of Suffolk County. The easement/covenant will at a minimum require: (a) restricting new construction at the site unless an evaluation of the potential for vapor intrusion is conducted and mitigation, if necessary, is performed in compliance with an EPA approved SMP; and (b) restricting the use of groundwater as a source of potable or process water unless groundwater quality standards are met.

A SMP will be developed to provide for the proper management of all site remedy components post-construction, such as institutional controls, and shall also include: (a) monitoring of site groundwater to ensure that, following the implementation of the groundwater remedy, the contamination is attenuating and groundwater quality continues to improve; (b) an inventory of any use restrictions on the site; (c) necessary provisions for ensuring the easement/covenant remains in place and is effective; (d) provision for any operation and maintenance required of the components of the remedy, and (e) the requirement that the owner or person implementing the remedy submit periodic certifications that the institutional and engineering controls are in place.

Institutional controls would include continued reliance on existing Suffolk County Department of Health Services (SCDHS) regulations that require new residences and businesses to hook up to public water supplies whenever public water mains are reasonably available. Where such mains are not available, the SCDHS regulations require proposed wells for new residences and businesses to be tested for water quality prior to use. For certain contaminant ranges, appropriate treatment is to be provided. Application of these regulations should minimize the potential for exposure to contaminated drinking water. It is assumed that Suffolk County would continue to enforce its requirements for at least as long as the groundwater is affected by site-related contamination.

Engineering controls consisting of fencing or signage at Old Mill Pond and Old Mill Creek to prevent future use of and dermal contact with contaminated surface water until the groundwater remedy has been implemented.

Long-term Groundwater and Surface Water Monitoring

A long-term groundwater and surface water monitoring program will be instituted to assess migration and attenuation of groundwater contamination. Effluent samples will be collected to verify compliance with the NYSDEC surface water or groundwater discharge requirements and the State Pollution Discharge Elimination System (SPDES) effluent criteria. Results from long-term groundwater monitoring will be used to evaluate the performance and to adjust operating parameters for the pump-and-treat system, as necessary.

Periodic Site Reviews

Hazardous substances remain at this Site above levels that would allow for unlimited use and unrestricted exposure. Pursuant to Section 121 (c) of CERCLA, EPA will review site remedies no less often than every five years. The first five-year review is due within five years of the date that construction is initiated for the remedial action that allows hazardous substances to remain on site. The current expectation is that construction will be initiated by the year 2008 and the first five-year review will be due before the year 2013.

Vapor Intrusion Evaluation

EPA is currently conducting an investigation of vapor intrusion into structures within the area that could be potentially affected by the groundwater contamination plume, and would implement an appropriate remedy (such as sub slab ventilation systems) based on the investigation results.

Summary of the Estimated Remedy Costs

Detailed cost estimates for the Selected Remedy can be found in Tables 11 and 12. The information

in the cost estimate summary tables is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Difference, or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50% to -30% of the actual project cost.

Expected Outcomes of the Selected Remedy

The results of the human health risk assessment indicated that there is an unacceptable non-cancer hazard from exposure to groundwater through ingestion, inhalation, and dermal contact, as well as an unacceptable non-cancer hazard from exposure to surface soil at the LAI Facility. The ecological risk assessment for the Site indicated that that surface water in Old Mill Creek and Old Mill Pond Has the potential to cause ecological adverse effects due to cis-1,2-dichloroethene and and at the LAI Facility soils due to PCBs.

The LAI Facility area is. currently an industrial area and not an ecological habitat. The Outlying Parcel area is currently undeveloped. Residential re-use of the Outlying Parcel area in the future is being considered and would eliminate it as an ecological habitat. Future use of the LAI Facility area of the Site is expected to remain unchanged.

All groundwater in New York State is classified as GA, which is groundwater suitable as a source of drinking water. There is a future potential beneficial use of groundwater at the Site as a drinking water source. Public water supply wells of the Suffolk County Water Authority are currently located approximately one mile northeast of the LAI Facility.

The selected soil remedy will:

- Prevent or minimize human exposure with soils having PCB contaminant concentrations in excess of soil cleanup obj ectives.
- Prevent or minimize the potential release of contamination in LAI catch basin sediments to the soil and/or groundwater
- Prevent current and future ecological and human exposures to contaminated sediment

The selected groundwater remedy will:

- Prevent or minimize potential, current, and future human exposures including inhalation and ingestion with VOC-contaminated groundwater
- Minimize the potential for off-site migration of VOC-contaminated groundwater
- Ultimately restore groundwater to levels which meet NYS Groundwater and Drinking Water Quality Standards
- Prevent or minimize VOC-contaminated groundwater from discharging into Port Jefferson Harbor
- Prevent or minimize potential human exposure including ingestion, inhalation and dermal contact with VOC-contaminated surface water
- Restore surface water to levels which meet Surface Water Quality Standards within a reasonable time frame
- Prevent or minimize VOC-contaminated surface water that exceeds water quality standards from discharging into Port Jefferson Harbor

STATUTORY DETERMINATIONS

As previously noted, Section 121(b) (1) of CERCLA mandates that a remedial action must be protective of human health and the environment, be cost effective, and utilize permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. Section 121(b) (1) also establishes a preference for remedial actions which employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at the Site. Section 121(d) of CERCLA further specifies that a remedial action must attain a degree of cleanup that satisfies ARARs under federal and state laws, unless a waiver can be justified pursuant to section 121(d)(4) of CERCLA. As discussed below, EPA has determined that the Selected Remedy meets the requirements of Section 121 of CERCLA.

Protection of Human Health and the Environment

The Selected Remedy will adequately protect human health and the environment through removal of contaminants from Site soil via excavation and disposal and from Site groundwater via ex-situ and in-situ treatment.

Compliance with ARARs

At the completion of the response action, the remedy will have complied with appropriate ARARs, including, but not limited to:

Chemical-Specific ARARs

Chemical-specific ARARs are defined as those that specify achievement of a particular cleanup level for specific chemicals or classes of chemicals. These standards usually take the form of health- or risk-based numerical limits that restrict concentrations of various chemical substances to a specified level. Because groundwater in the immediate vicinity of the Site is currently used as a source of drinking water, chemical-specific ARARs and TBCs generally address drinking water standards and protection of groundwater quality.

Location-specific ARARs and TBCs

Location-specific ARARs are those which are applicable or relevant and appropriate due to the location of the site or area being remediated. For this Site, these consist of regulations applicable to wetlands, flood plains, endangered species, and wildlife habitats.

Action-specific ARARs and TBC's

Action-specific ARARs are those which are applicable or relevant and appropriate to particular remedial actions, technologies, or process options. These regulations do not define site cleanup levels but do affect the implementation of specific types of remediation. For example, although outdoor air has not been identified as a medium of concern, air quality ARARs are listed below, because some potential remedial actions may result in air emissions of toxic or hazardous substances. These action-specific ARARs were considered in the screening and evaluation of the alternatives.

Cost Effectiveness

EPA has determined that the selected remedy is cost effective in mitigating the principal risks posed by contaminated soil and groundwater. Section 300.430(f)(ii) (D) of the NCP requires evaluation of cost effectiveness. Overall effectiveness is determined by the following three balancing criteria: long-term effectiveness and permanence; reduction of toxicity, mobility, and volume through treatment; and short-term effectiveness. Overall effectiveness is then compared to cost to ensure that the remedy is cost effective. The selected remedy meets the criteria and provides for overall effectiveness in proportion to its cost. The estimated present worth of the Selected Remedy is $24,170,000.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

EPA has determined that the selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable, and provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principal element and considering State and community acceptance.

Of those alternatives considered to address the soil and groundwater contamination at the Site, the selected remedy is a permanent remedy that removes contaminated soil and extracts and treats the groundwater. The in-situ component of the remedy will reduce the mass of contaminants in the subsurface, thereby reducing the toxicity, mobility, and volume of contamination. This option also holds the advantage of accelerating the cleanup at the Site.

Preference for Treatment as a Principal Element

By using a combination of ex-situ treatment processes, as well as in-situ treatment, the Selected Remedy satisfies the statutory preference for remedies that employ treatment as a principal element.

Five-Year Review Requirements

Hazardous substances remain at this Site above levels that would allow for unlimited use and unrestricted exposure. Pursuant to Section 121 (c) of CERCLA, EPA will review site remedies no less often than every five years. The first five-year review is due within five years of the date that construction is initiated for the remedial action that allows hazardous substances to remain on site. The current expectation is that construction will be initiated by the year 2008 and the first five-year review will be due before the year 2013.

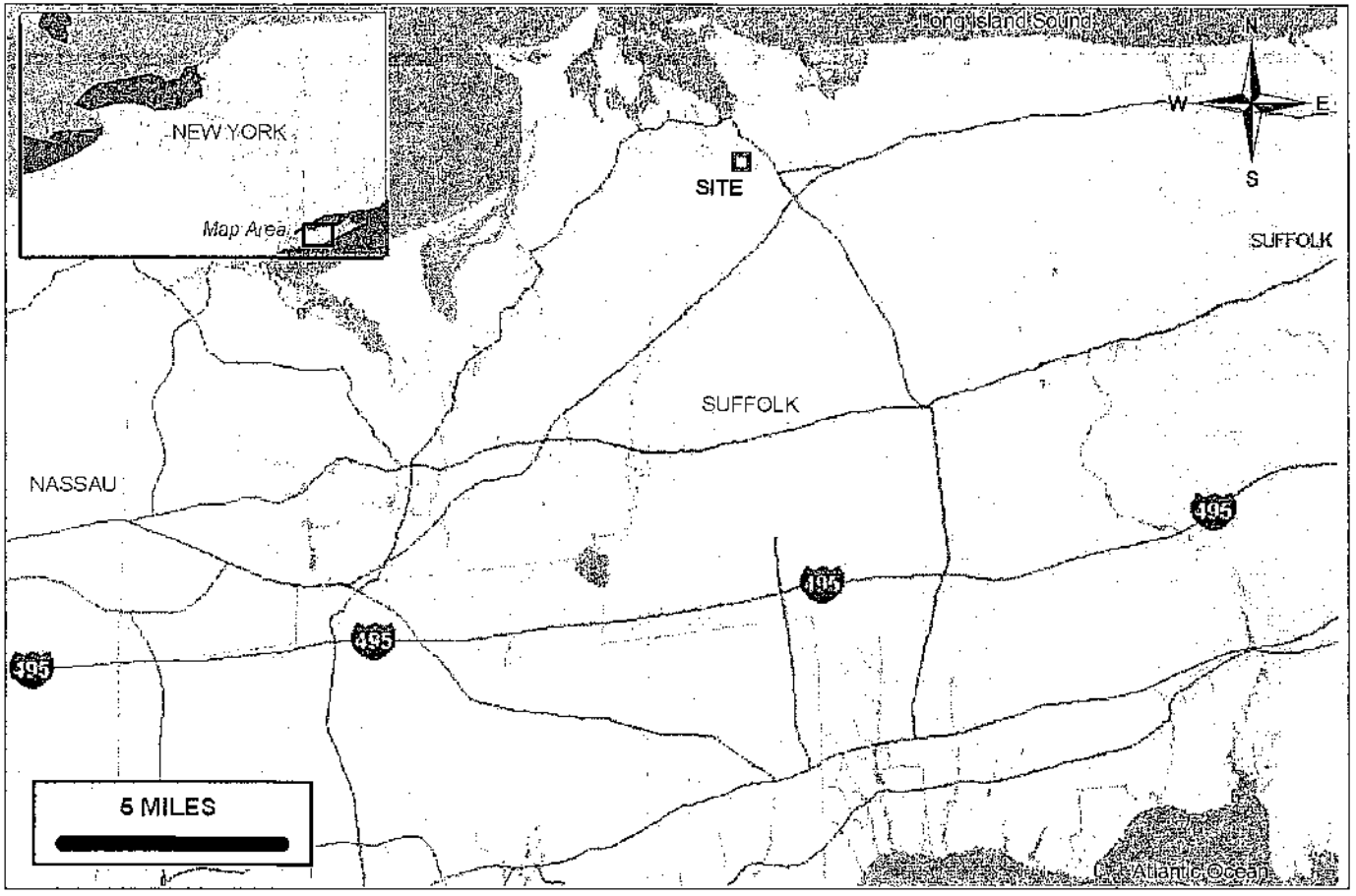
DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the Lawrence Aviation Industries, Inc. Superfund Site was released for public comment on July 20, 2006, and the public comment period ran from that date through September 18, 2006. The Proposed Plan identified Soil Alternative S2 and Groundwater Alternative GW 3 - Option 3 as the Preferred Alternative.

All written and verbal comments submitted during the public comment period were reviewed by EPA. Upon review of these comments, EPA has determined that no significant changes to the remedy, as it was originally identified in the Proposed Plan, were necessary.

Appendix I

Figures



CDM

Figure 1
Site Location Map

Lawrence Aviation Industries Superfund Site
Port Jefferson Station, New York

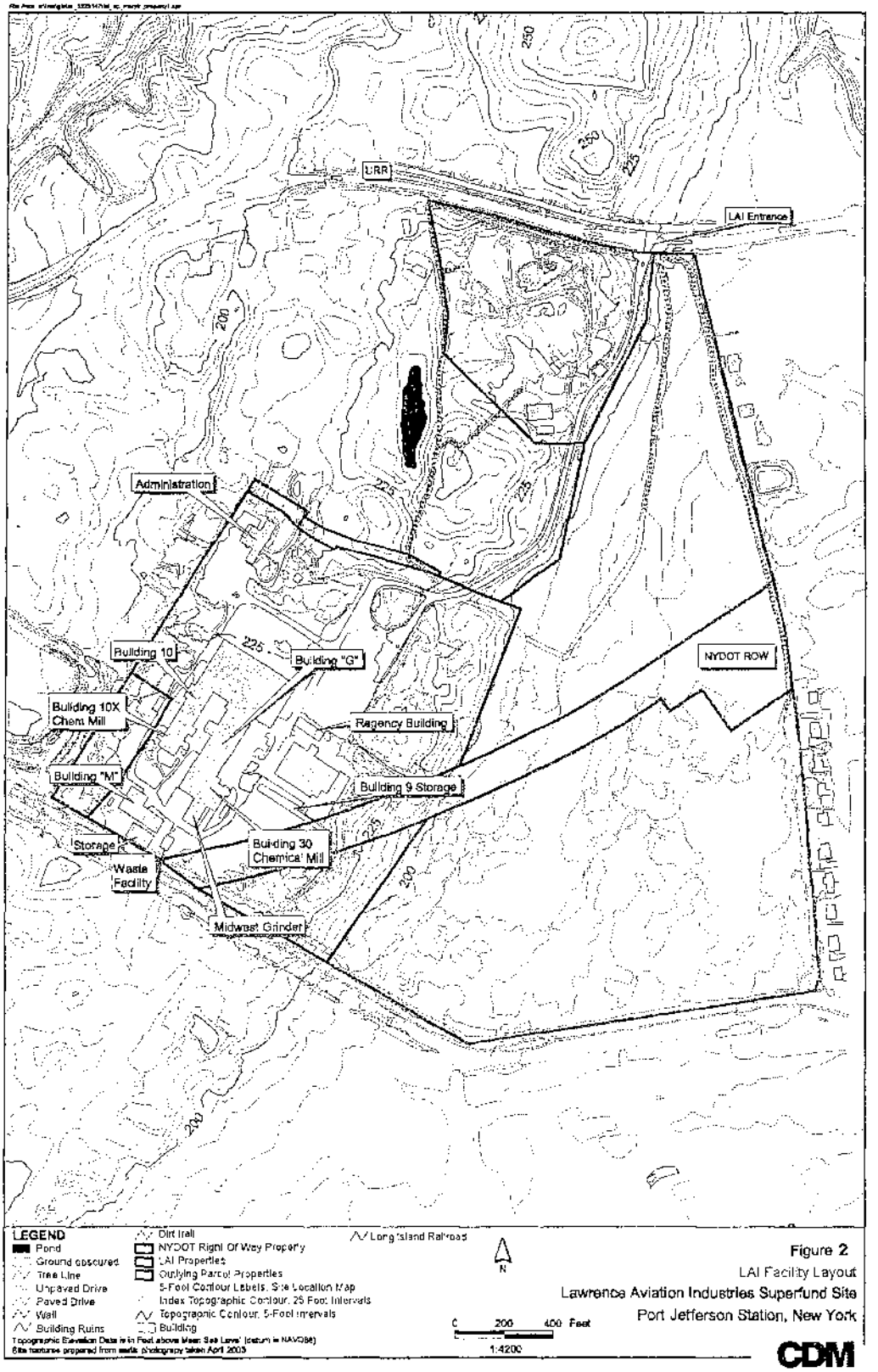


Figure 2
LAI Facility Layout
Lawrence Aviation Industries Superfund Site
Port Jefferson Station, New York

CDM

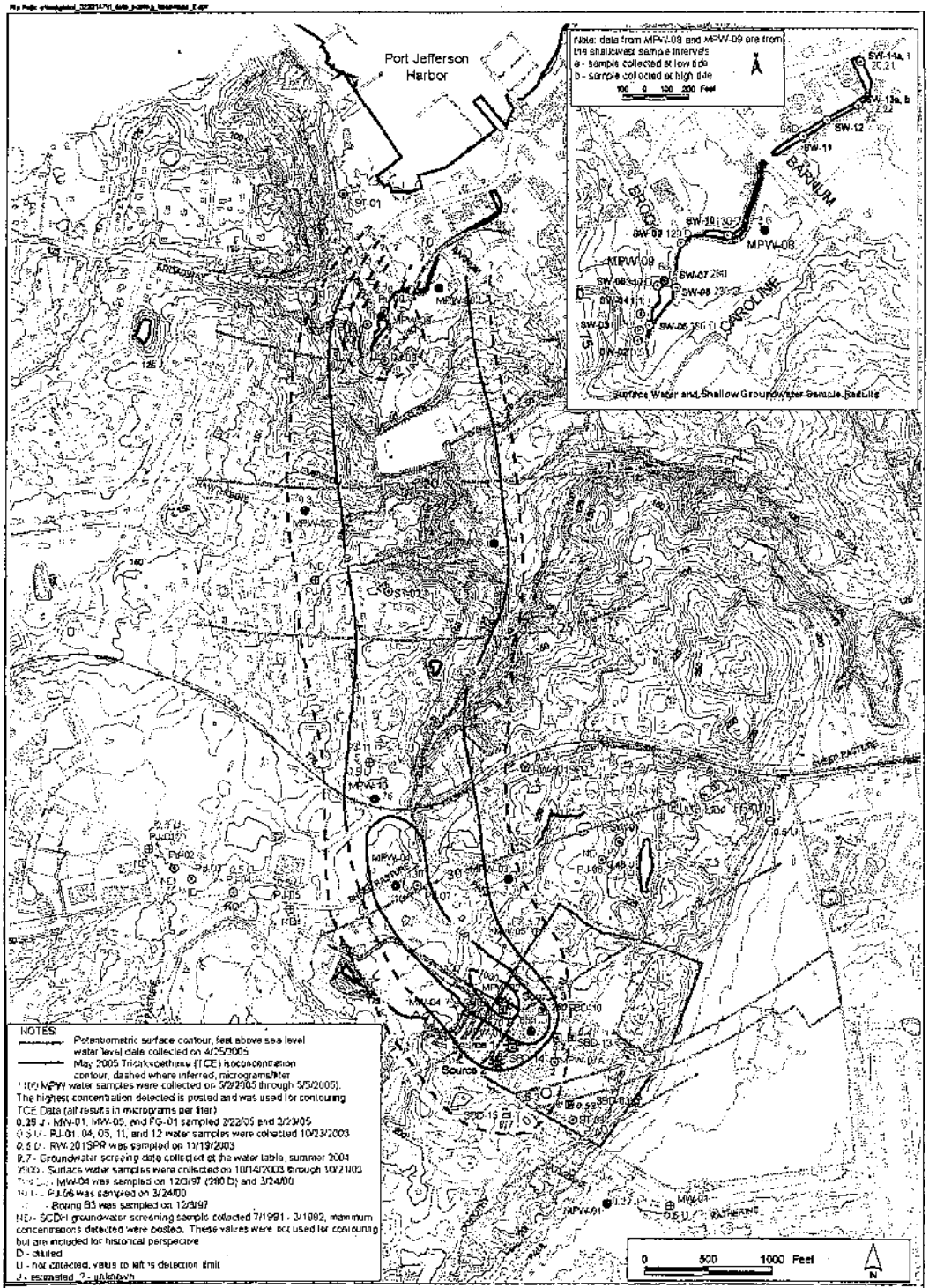


Figure 3
Round 2 Upper Glacial Aquifer
Potentiometric Surface and
Trichloroethene Isoconcentration Contours
Remedial Investigation/Feasibility Study
Lawrence Aviation Industries Superfund Site
Port Jefferson Station, New York

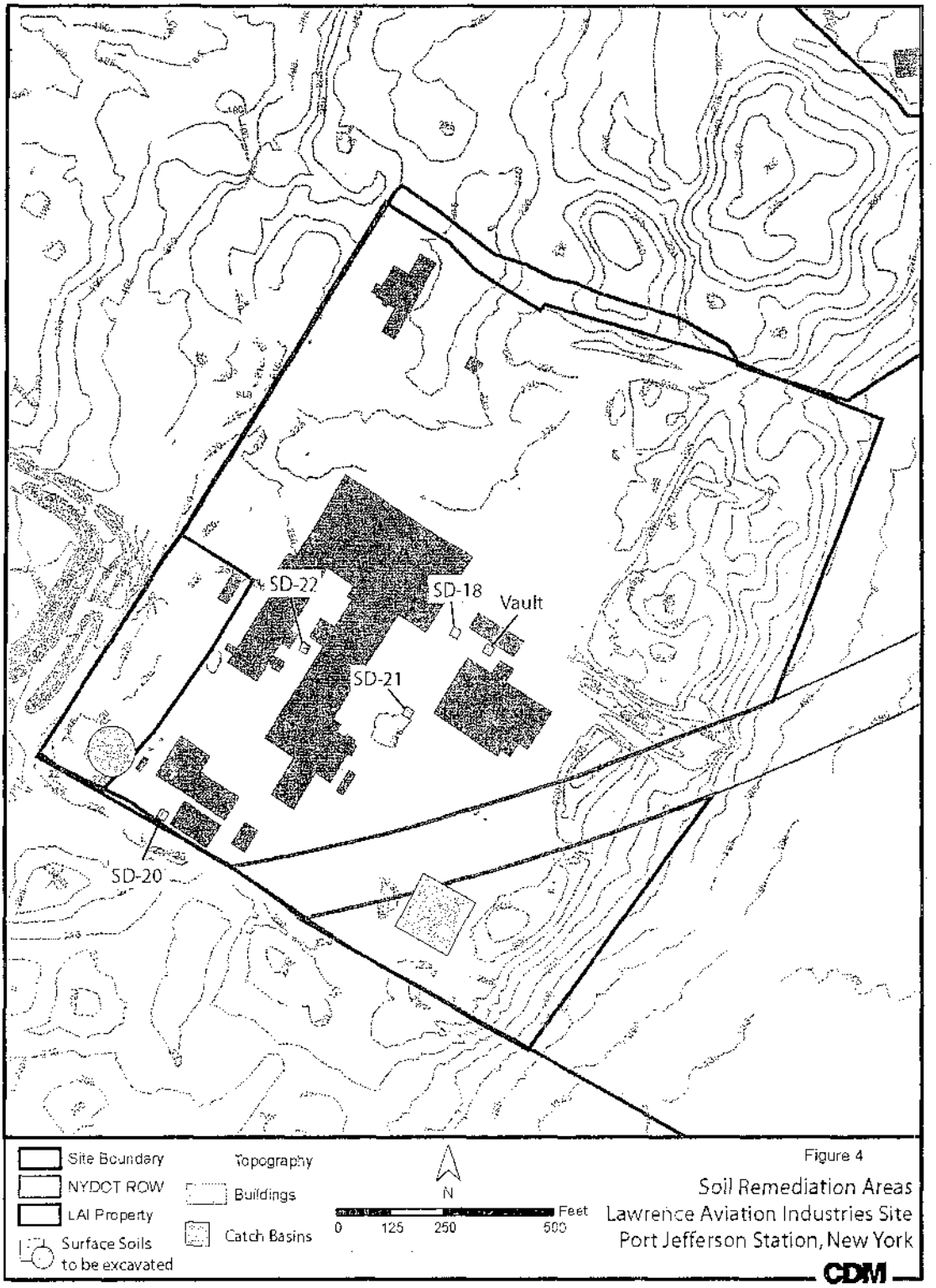
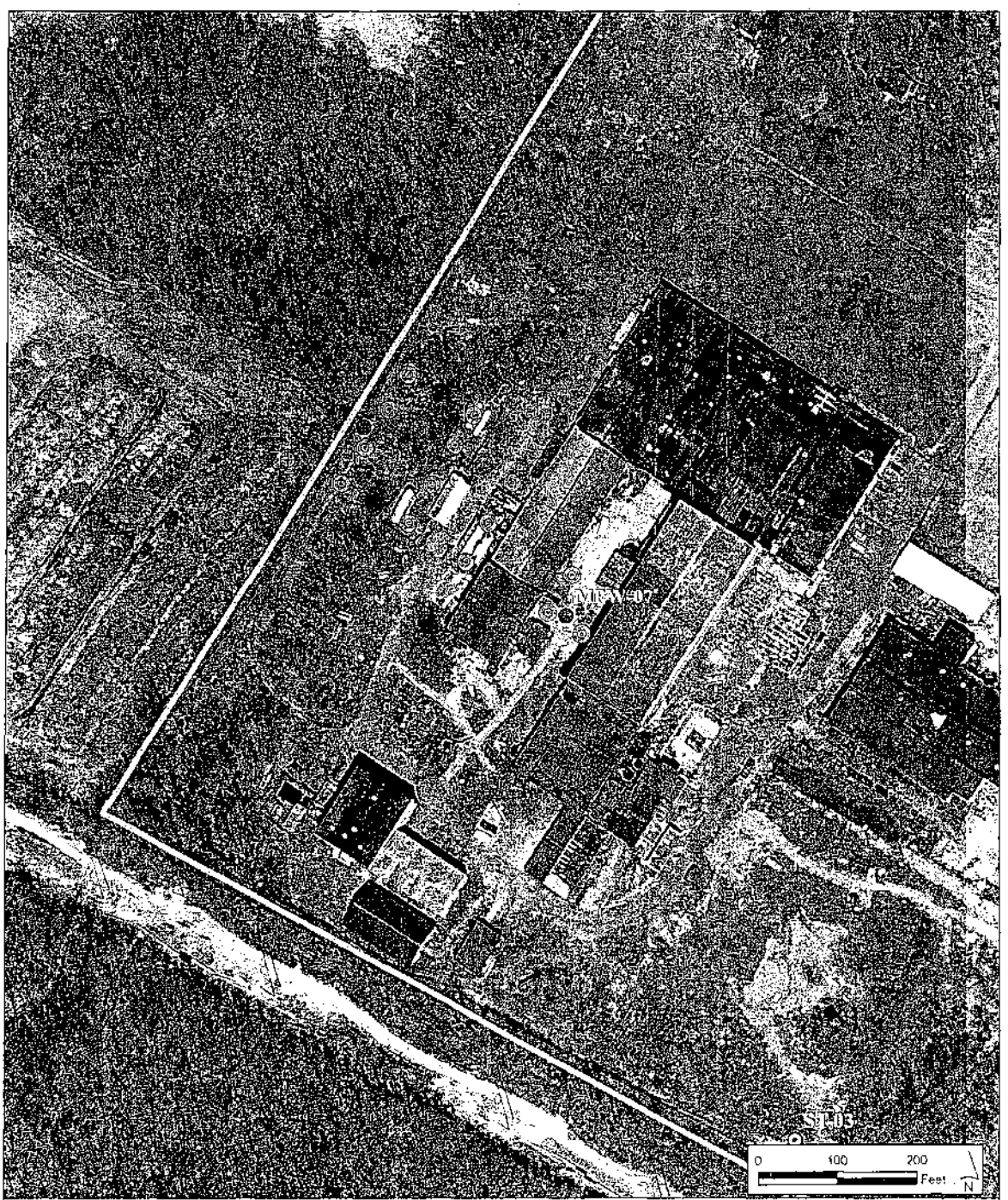


Figure 4

Soil Remediation Areas
Lawrence Aviation Industries Site
Port Jefferson Station, New York

CDM

Figure 5
Ground Water Extraction and Recharge Basin Layout
LAI Facility
Lawrence Aviation Industries Superfund Site
Port Jefferson Station, New York
CDM



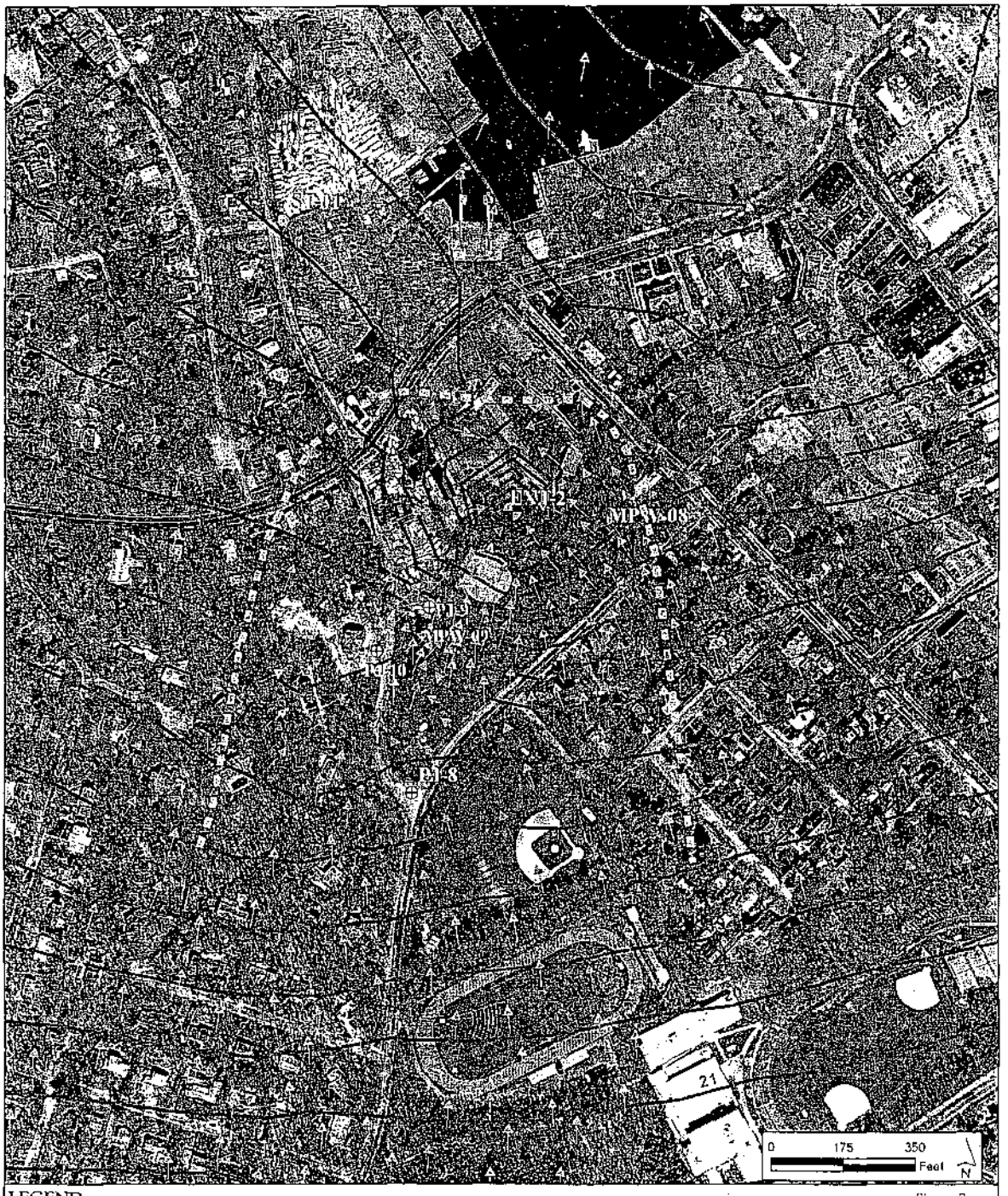
LEGEND

- Multiport Well
- NYSDEC Monitoring Well
- Stratigraphic Boring
- ISCO Injection Point
- LAI Facility

Figure 6

In Situ Chemical Oxidation Injection Layout
Lawrence Aviation Industries Superfund Site
Port Jefferson Station, New York

CDM



LEGEND

- Multiport Well
- Suffolk County Monitoring Well
- Stratigraphic Boring
- Extraction Well
- Head (ft; Level 9)
- Ground Water Flow Direction
- Capture Zone (est.)

Figure 7

Ground Water Extraction Well Layout Near Old Mill Pond

Lawrence Aviation Industries Superfund Site

Port Jefferson Station, New York

CDM

Appendix II

Tables

TABLE 1

Page 1

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil Lawrence Aviation Facility

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Surface Soil	Aroclor-1254	24	4100	µg/kg	8/29	1896	µg/kg	99% Cheb.
	Aroclor-1260	9.2	760	µg/kg	14/29	343.1	µg/kg	99% Cheb.

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater Potable/Residential Well Water

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Tap Water	Trichloroethene	0.22	0.22	µg/l	1/5	0.2	µg/l	Max.

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater Monitoring Wells

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Tap Water	Trichloroethene	0.25	1200	µg/l	40/49	430.9	µg/l	99% Cheb.

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater (Depth <100 feet)

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Groundwater	Trichloroethene	-----	-----	-----	-----	660	µg/l	Max.
	Vinyl Chloride	-----	-----	-----	-----	9.9	µg/l	Max.

99% Cheb. = 99% Chebyshev (mean,std)
Max = Maximum value detected

TABLE 2
Selection of Exposure Pathways
Page 1

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current / Future	Surface Soil	Surface Soil	LAI Facility	Worker	Adult	Dermal	On-Site	Quant	Workers may have exposed skin surfaces come into contact with soil
						Ingestion	On-Site	Quant	Workers may incidentally ingest soil
		Air	LAI Facility	Worker	Adult	Inhalation	On-Site	Quant	Workers may inhale fugitive dust
	Groundwater	Groundwater (Potable/Residential Wells)	Tap	Offsite Resident	Adult	Dermal	Off-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, there may be additional residential wells in use in the area.
						Ingestion	Off-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, there may be additional residential wells in use in the area.
					Child (0-6 yrs)	Dermal	Off-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, there may be additional residential wells in use in the area.
						Ingestion	Off-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, there may be additional residential wells in use in the area.
		Air	Water Vapors in Bathroom	Offsite Resident	Adult	Inhalation	Off-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, there may be additional residential wells in use in the area.
					Child (0-6 yrs)	Inhalation	Off-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, there may be additional residential wells in use in the area.
			Indoor Air - Migration from Subsurface	Offsite Resident	Adult	Inhalation	Off-Site	Quant	Water table is close to the surface in some areas of Port Jefferson and VOCs could migrate from groundwater to indoor air.
					Child (0-6 yrs)	Inhalation	Off-Site	Quant	Water table is close to the surface in some areas of Port Jefferson and VOCs could migrate from groundwater to indoor air.
			Indoor Air - Migration from Subsurface	Worker	Adult	Inhalation	Off-site	None	Onsite water table (180 feet) is too deep for VOCs to migrate from groundwater to indoor air.
	Surface Water [2]	Surface Water [2]	Fresh Water Old Mill Pond/Creek	Recreational User	Adult	Dermal	Off-Site	Quant	Waders may have exposed skin surfaces come into contact with surface water
						Ingestion	Off-Site	Quant	Waders may incidentally ingest surface water
					Adolescent (12-15 yrs)	Dermal	Off-Site	Quant	Waders may have exposed skin surfaces come into contact with surface water
						Ingestion	Off-Site	Quant	Waders may incidentally ingest surface water
Current / Future	Surface Water [3]	Surface Water [3]	Salt Water Harbor	Recreational User	Adult	Dermal	Off-Site	Quant	Waders may have exposed skin surfaces come into contact with surface water
						Ingestion	Off-Site	Quant	Waders may incidentally ingest surface water

TABLE 2
Selection of Exposure Pathways
Page 2

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current / Future	Surface Water [3]	Surface Water [3]	Salt Water Harbor	Recreational User	Adolescent (12-18 yrs)	Dermal	Off-Site	Quant	Waders may have exposed skin surfaces come into contact with surface water
						Ingestion	Off-Site	Quant	Waders may incidentally ingest surface water
	Sediment [3]	Sediment [3]	Fresh Water Old Mill Pond/Creek	Recreational User	Adult	Dermal	Off-Site	Quant	Waders may have exposed skin surfaces come into contact with sediment
						Ingestion	Off-Site	Quant	Waders may incidentally ingest sediment
					Adolescent (12-18 yrs)	Dermal	Off-Site	Quant	Waders may have exposed skin surfaces come into contact with sediment
						Ingestion	Off-Site	Quant	Waders may incidentally ingest sediment
			Salt Water Harbor	Recreational User	Adult	Dermal	Off-Site	Quant	Waders may have exposed skin surfaces come into contact with sediment
						Ingestion	Off-Site	Quant	Waders may incidentally ingest sediment
					Adolescent (12-18 yrs)	Dermal	Off-Site	Quant	Waders may have exposed skin surfaces come into contact with sediment
						Ingestion	Off-Site	Quant	Waders may incidentally ingest sediment
	Fish	Fish Tissue	Fresh Water Old Mill Pond/Creek	Recreational User	Adult	Ingestion	Off-Site	None	Potentially site-related chemicals in the pond/creek (i.e., VOCs) do not bioaccumulate in fish tissue.
					Adolescent (12-18 yrs)	Ingestion	Off-Site	None	Potentially site-related chemicals in the pond/creek (i.e., VOCs) do not bioaccumulate in fish tissue.
			Salt Water Harbor	Recreational User	Adult	Ingestion	Off-Site	None	Potentially site-related chemicals in the Harbor (i.e., VOCs) do not bioaccumulate in fish tissue.
					Adolescent (12-18 yrs)	Ingestion	Off-Site	None	Potentially site-related chemicals in the Harbor (i.e., VOCs) do not bioaccumulate in fish tissue.
Future	Surface Soil	Surface Soil	LAI Facility	Resident	Adult	Dermal	On-Site	Quant	Residents may have exposed skin surfaces come into contact with soil
						Ingestion	On-Site	Quant	Residents may incidentally ingest soil
					Child (0-6 yrs)	Dermal	On-Site	Quant	Residents may have exposed skin surfaces come into contact with soil
						Ingestion	On-Site	Quant	Residents may incidentally ingest soil

TABLE 2
Selection of Exposure Pathways
Page 3

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Surface Soil	Surface Soil	LAI Facility	Pedestrian	Adult	Dermal	Off-Site	Quant	Pedestrian may have exposed skin surfaces come into contact with soil
						Ingestion	Off-Site	Quant	Pedestrian may incidentally ingest soil
				Cyclist	Adult	Dermal	Off-Site	Quant	Cyclist may have exposed skin surfaces come into contact with soil
						Ingestion	Off-Site	Quant	Cyclist may incidentally ingest soil
			Outlying Parcel	Resident	Adult	Dermal	Off-Site	Quant	Residents may have exposed skin surfaces come into contact with soil
						Ingestion	Off-Site	Quant	Residents may incidentally ingest soil
					Child (0-6 yrs)	Dermal	Off-Site	Quant	Residents may have exposed skin surfaces come into contact with soil
						Ingestion	Off-Site	Quant	Residents may incidentally ingest soil
				Pedestrian	Adult	Dermal	Off-Site	Quant	Pedestrian may have exposed skin surfaces come into contact with soil
						Ingestion	Off-Site	Quant	Pedestrian may incidentally ingest soil
				Cyclist	Adult	Dermal	Off-Site	Quant	Cyclist may have exposed skin surfaces come into contact with soil
						Ingestion	Off-Site	Quant	Cyclist may incidentally ingest soil
		Air	LAI Facility	Resident	Adult	Inhalation	On-Site	Quant	Residents may inhale fugitive dust
					Child (0-6 yrs)	Inhalation	On-Site	Quant	Residents may inhale fugitive dust
				Pedestrian	Adult	Inhalation	Off-Site	Quant	Pedestrian may inhale fugitive dust
				Cyclist	Adult	Inhalation	Off-Site	Quant	Cyclist may inhale fugitive dust

TABLE 2
Selection of Exposure Pathways
Page 4

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Surface Soil	Air	Outlying Parcel	Resident	Adult	Inhalation	Off-Site	Quant	Residents may inhale fugitive dust
					Child (0-6 yrs)	Inhalation	Off-Site	Quant	Residents may inhale fugitive dust
				Pedestrian	Adult	Inhalation	Off-Site	Quant	Pedestrian may inhale fugitive dust
				Cyclist	Adult	Inhalation	Off-Site	Quant	Cyclist may inhale fugitive dust
Future	Soil[1]	Soil[1]	LAI Facility	Construction Worker	Adult	Dermal	On-Site	Quant	Workers may have exposed skin surfaces come into contact with soil
						Ingestion	On-Site	Quant	Workers may incidentally ingest soil
		Air	LAI Facility	Construction Worker	Adult	Inhalation	On-Site	Quant	Workers may inhale volatiles/particulates
	Groundwater	Groundwater (Monitoring Wells)	Tap	Resident	Adult	Dermal	On-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, additional residential wells could be in use in the future.
						Ingestion	On-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, additional residential wells could be in use in the future.
					Child (0-6 yrs)	Dermal	On-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, additional residential wells could be in use in the future.
						Ingestion	On-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, additional residential wells could be in use in the future.
		Air	Vapors in Bath	Resident	Adult	Inhalation	On-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, additional residential wells could be in use in the future.
					Child (0-6 yrs)	Inhalation	On-Site	Quant	Contamination has been found in residential wells in the past. While those wells were closed, additional residential wells could be in use in the future.
			Indoor Air - Migration from Subsurface	Resident	Adult	Inhalation	On-Site	None	Onsite water table (180 feet) is too deep for VOCs to migrate from groundwater to indoor air.
					Child (0-6 yrs)	Inhalation	On-Site	None	Onsite water table (180 feet) is too deep for VOCs to migrate from groundwater to indoor air.

[1] Includes both surface soil and subsurface soil.

[2] Surface water and sediment exposure scenarios are for waders.

Quant = Quantitative risk analysis performed.

Qual = Qualitative risk analysis performed. Risks relative to other receptors are discussed in text.

TABLE 3

Non-Cancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)	Adjusted RfD (Dermal)	Adj. Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates of RfD:
Trichloroethene	Chronic	3.0-E04	mg/kg-day	-----	3.0E-04	mg/kg-day	Liver/ Kidney/ Fetus	3000	NCEA	10/25/04
Vinyl Chloride	Chronic	3.0E-03	mg/kg-day	-----	3.3E-03	mg/kg-day	Liver	30	IRIS	06/15/05
Aroclor-1254	Chronic	2.0E05	mg/kg-day	-----	2.0E-05	mg/kd-day	Eye/Skin/ Nails	300	IRIS	06/15-05
Aroclor-1260	Chronic	2.0E05	mg/kg-day	-----	2.0E-05	mg/kd-day	Eye/Skin/ Nails	300	IRIS	06/15-05

Pathway: Inhalation

Chemical of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Inhalation RfD	Inhalation RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates:
Trichloroethene	Chronic	4.0E-02	mg/m^3	1.1E-02	mg/kg-day	CNS	1000	NCEA	10/25/04
Vinyl Chloride	Chronic	1.0E-01	mg/m^3	2,9E-02	mg/kg-day	Liver	30	IRIS	06/15/05
Aroclor-1254	-----	-----	-----	-----	-----	-----	-----	-----	-----
Aroclor-1260	-----	-----	-----	-----	-----	-----	-----	-----	-----

Key

IRIS: Integrated Risk Information System, U.S. EPA
NCEA: National Center for Environmental Assessment, U.S. EPA

Summary of Toxicity Assessment

This table provides non-carcinogenic risk information which is relevant to the contaminants of concern. When available, the chronic toxicity data have been used to develop oral reference doses (RfDs) and inhalation reference doses (RfDi).

TABLE 4

Cancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Trichloroethene	4.0E-01	$(mg/kg\text{-}day)^{-1}$	4.0E-01	$(mg/kg\text{-}day)^{-1}$	B1	NCEA	10/25/04
Vinyl Chloride	7.2E-01	$(mg/kg\text{-}day)^{-1}$	7.2E-01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	06/15/05

Pathway: Inhalation

Chemical of Concern	Unit Risk	Units	Inhalation Slope Factor	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Trichloroethene	1.1E-04	$(\mu g/m^3)^{-1}$	4.0E-01	$(mg/kg\text{-}day)^{-1}$	B1	NCEA	10/25/04
Vinyl Chloride	8.8E-06	$(\mu g/m^3)^{-1}$	3.1E-02	$(mg/kg\text{-}day)^{-1}$	A	IRIS	06/15/05

Key

IRIS: Integrated Risk Information System, U.S. EPA
NCEA: National Center for Environmental Assessment, U.S. EPA

EPA Group:

A - Human carcinogen
B1 - Probable human carcinogen - indicates that limited human data are available

Summary of Toxicity Assessment

This table provides carcinogenic risk information which is relevant to the contaminants of concern. Toxicity data are provided for both the oral and inhalation routes of exposure.

TABLE 5

Page 1

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Current/Future
Receptor Population: Off-Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation Shower/Indoor Air	Dermal	Exposure Routes Total
Groundwater	Groundwater Potable Water and Residential Air	Tap, Bath & Indoor Air	Trichloroethene	8.3 E-07	1.4E-06/1.1E-03	2.2E-08	1.1E-03
			Vinyl Chloride	-----	-----/4.6E-06	-----	4.6E-06
						Total Risk =	1.1E-03

Scenario Timeframe: Current/Future
Receptor Population: Off-Site Resident
Receptor Age: Child (0-6 yr)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation Shower/Indoor Air	Dermal	Exposure Routes Total
Groundwater	Groundwater Potable Water and Residential Air	Tap, Bath & Indoor Air	Trichloroethene	4.8E-07	5.1E-06/7.5E-04	1.7E-08	7.6E-04
			Vinyl Chloride	-----	-----/3.3E-06	-----	3.3E-06
						Total Risk =	7.6E-04

TABLE 5

Page 2

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Current/Future
Receptor Population: Lawrence Aviation Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater Monitoring Well Data	Tap & Bath	Trichloroethene	1.6E-03	2.8E-03	4.4E-05	4.5E-03
						Total Risk =	4.5E-03

Scenario Timeframe: Current/Future
Receptor Population: Lawrence Aviation Resident
Receptor Age: Child (0-6 yrs.)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater Monitoring Well Data	Tap & Bath	Trichloroethene	9.4E-04	1.0E-02	3.4E-05	1.1E-02
						Total Risk =	1.1E-02

Scenario Timeframe: Current/Future
Receptor Population: Outlying Parcel Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater Monitoring Well Data	Tap & Bath	Trichloroethene	1.6E-03	2.8E-03	4.4E-05	4.5E-03
						Total Risk =	4.5E-03

TABLE 5

Page 3

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Current/Future
Receptor Population: Outlying Parcel Resident
Receptor Age: Child (0-6 yrs.)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater Monitoring Well Data	Tap & Bath	Trichloroethene	9.4E-04	1.0E-02	3.4E-05	1.1E-02
						Total Risk =	1.1E-02

Summary of Risk Characterization - Carcinogens

The table presents cancer risks (CRs) for each route of exposure and for all routes of exposure combined. The Risk Assessment Guidance for Superfund states that, generally, the acceptable cancer risk range is 10^{-4} to 10^{-6}.

TABLE 6

Page 1

Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Current/Future
Receptor Population: Off-Site Resident
Receptor Age: Child (0-6 yrs.)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation Shower/Indoor Air	Dermal	Exposure Routes Total
Groundwater	Groundwater Potable Water and Residential Air	Tap, Bath & Indoor Air	Trichloroethene	Liver/Kidney/Fetus	0.047	0.014/2	0.0017	2.1
			Vinyl Chloride	Liver	-----	-----/0.042	-----	0.042
							Groundwater Hazard Index Total =	2.1

Scenario Timeframe: Current/Future
Receptor Population: Lawrence Aviation On-site Facility Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater Monitoring Well Data	Tap & Bath	Trichloroethene	Liver/Kidney/Fetus	39	1.9	1.1	42
							Groundwater Hazard Index Total =	42

TABLE 6

Page 2

Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Current/Future
Receptor Population: Lawrence Aviation On-site Facility Resident
Receptor Age: Child (0-6 yrs.)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil Lawrence Aviation Facility	Surface Soil Lawrence Aviation Facility	Surface Soil Lawrence Aviation Facility	Aroclor-1254	Eye/Skin/Nails	1.2	-----	0.48	1.7
			Aroclor-1260	Eye/Skin/Nails	0.22	-----	0.086	0.31
							Surface Soil Hazard Index Total=	2
Groundwater	Groundwater Monitoring Well Data	Tap & Bath	Trichloroethene	Liver/Kidney/Fetus	92	27	3.3	120
							Groundwater Hazard Index Total =	120

Scenario Timeframe: Current/Future
Receptor Population: Outlying Parcel Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater Monitoring Well Data	Tap & Bath	Trichloroethene	Liver/Kidney/Fetus	39	1.9	1.1	42
							Groundwater Hazard Index Total =	42

TABLE 6

Page 3

Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Current/Future
Receptor Population: Outlying Parcel Resident
Receptor Age: Child (0-6 yrs.)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater Monitoring Well Data	Tap & Bath	Trichloroethene	Liver/Kidney/Fetus	92	27	3.3	120
							Groundwater Hazard Index Total =	120

Summary of Risk Characterization - Non-Carcinogens

The table presents hazard quotients (HQs) for each route of exposure and the hazard index (sum of hazard quotients) for all routes of exposure. The Risk Assessment Guidance for Superfund states that, generally, a hazard index (HI) greater than 1 indicates the potential for adverse non-cancer effects.

Table 7
Preliminary Remedial Goals for Soil
Lawrence Aviation Superfund Site
Port Jefferson, New York

Chemical Name	Unit	NYSDEC Recommended Soil Cleanup Objectives[1]	NYSDEC Soil Cleanup Objectives to Protect Groundwater[2]	Risk Based Cleanup Levels for Residential Soil[3]		Risk Based Cleanup Levels for Industrial Soil[4]		Ecological Risk-Based Screening Criteria[5]	EPA Region 2 Ecological Screening Level [6]	Background Concentration	Maximum Concentration Detected depth = 0 - 1 ft bgs	Preliminary Remedial Goals
				HQ = 1	CRL = 1E-6	HQ = 1	CRL = 1E-6					
Pesticides/PCBs												
Aroclor-1254	µg/kg	1,000	10,000	4,000	200	11,000	700	NV	0.2016 [6]	147	4,100 J	1,000 [6]
Aroclor-1260	µg/kg										760 J	

Notes:

(1) New York State Soil Cleanup Objectives (TAGM #4046, January 1994)
(2) New York State Soil Cleanup Objectives to Protect Groundwater (TAGM #4046, January 1994)
(3) Based on EPA Region 9 Preliminary Remediation Goals (PRGs) for residential soil, age adjusted to cancer benchmark = 1E-6 and HQ = 1.
(4) Onsite Worker - Surface Soil
(5) SLERA values refined via Step 3A calculations.
(6) Total PCBs.

CRL Cancer Risk Level
D Recommended soil cleanup objective is based on average background concentrations and is not risk-based
ft bgs feet below
HQ Hazard Quotient
J Estimated Value
NV No Value
NYSDEC New York State Department of Environmental Conservation
PCB Polychlorinated biphenyl
µg/kg micrograms per kilogram

Table 8
Preliminary Remediation Goals for Groundwater
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Contaminants of Concern	National Primary Drinking Water Standards[1] (ug/L)	NYS Groundwater Quality Standards[2] (ug/L)	NYSDOH Drinking Water Quality Standards[3] (ug/L)	PRGs[4] (ug/L)	Maximum Detected Concentrations (ug/L)
Volatile Organic Compounds					
cis-1,2-Dichloroethene	70	5	5	5	**19**
Trichloroethene	5	5	5	5	**1200**
Tetrachloroethene	5	5	5	5	**47**
Vinyl Chloride	2	2	2	2	**9.9**

Notes:

1. EPA National Primary Drinking Water Standards (web page), EPA 816-F-03-016, June 2003
2. New York Surface Water and Ground Water Quality Standards (6NYCRR Part 703), August 4, 1999
3. New York State Department of Health Drinking Water Standards (10NYCRR Part 5)
4. The PRGs are selected based on NYS Groundwater Quality Standards, or drinking water standards when groundwater quality standards are not available.

Bold figures indicate detected concentrations exceed PRGs.
NYSDOH = New York State Department of Health.
PRG = Preliminary Remedial Goal.
ug/L = micrograms per liter.

Table 9
Preliminary Remediation Goals for Surface Water
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Contaminants of Concern	Federal Ambient Water Quality Criteria[1] (Organism Consumption) (ug/L)	NYS Surface Water Quality Standards and Guidance Values (Human Water Source) (ug/L)	NYS Surface Water Quality Standard and Guidance Values[2] (Human Fish Consumption) (ug/L)	NYS Surface Water Quality Standard and Guidance Values[2] (Wildlife Protection) (ug/L)	PRGs[3] (ug/L)	Maximum Detected Concentrations (ug/L)
Volatile Organic Compounds						
cis-1,2-Dichloroethene	NA	5	NA	NA	5	**47**
Tetrachloroethene	3.3	0.7*	1*	NA	0.7	**2.3**
Trichloroethene	30	5	40	NA	5	**340**
Vinyl Chloride	2.4	0.3 *	NA	NA	0.3	**3.7**

Notes:

1. Clean Water Act Water Quality Criteria (40 CFR 131.36)
2. New York Surface Water and Ground Water Quality Standards (6NYCRR Part 703), August 4, 1999
   NYS Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (TOGS 1.1.1)
3. The PRGs are selected based on NYS surface water Quality Standards, or ambient water quality criteria/guidance values when surface water quality standards are not available.

Bold figures indicate detected concentrations exceed PRGs.
NA = Not Available
PRG = Preliminary Remedial Goal.
ug/L = micrograms per liter.
* = Guidance value

Table 10
Cost Comparison of Groundwater Alternatives
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Item Description	Alternative GW1	Alternative GW2	Alternative GW3			Alternative GW4	Alternative GW5		
			Option 1	Option 2	Option 3		Option 1	Option 2	Option 3
	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million	$ Million
Total Capital Costs	0	0.04	4.9	6.8	11.4	15.7	5.1	7.1	7.4
Annual O&M Costs (Including sampling)	0	0.14	0.66	1.0	1.0	0.65	1.09 - 2.42	1.09 - 2.93	0.64 - 2.10
Total Present Worth of Annual Costs	0	1.7	8.2	12.7	12.0	8.0	17.8	19.9	13.5
Total Present Worth of Costs	0	1.8	13.0	19.5	23.4	23.7	23.0	27.0	20.9

Table 11
Alternative S2: Excavation & Disposal
Cost Estimate Summary
Lawrence Aviation Industries Site

Item No.	Description		Cost
CAPITAL COSTS			
Construction Costs			
1.	Civil Survey	$	2,000
2.	Mobilization/Demobilization	$	20,754
3.	Sitework	$	311,690
4.	Construction Management	$	101,390
	Subtotal Construction Costs	**$**	**435,834**
	General Contractor Fee (10% construction)	$	43,583
	Remedial Design	$	75,000
	Pre-Design Investigation	$	100,000
	Engineering During Construction	$	20,000
	Contingency (20%)	$	87,167
	TOTAL CAPITAL COSTS	**$**	**770,000**
OPERATION & MAINTENANCE (O&M) COSTS			
Annual O&M Costs		$	-
PRESENT WORTH OF 30 YEAR COSTS			
5.	Total Capital Costs	$	770,000
6.	Annual O&M Cost	$	-
	TOTAL PRESENT WORTH OF COSTS	**$**	**770,000**

Table 12
Alternative GW3: Groundwater Extraction and Treatment
Cost Estimate Summary
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Item No.	Item Description	Option 3
CAPITAL COSTS		
Construction Costs		
1.	Civil Survey	$ 50,000
2.	Mobilization/Demobilization	$ 93,000
3.	Groundwater Pump and Treat System	$ 2,752,578
4.	Enhancement via In situ Chemical Oxidation	$ 3,301,000
5.	Construction Management	$ 851,000
	Subtotal Costs	**$ 7,047,578**
	General Contractor Fee (10% construction)	$ 704,758
	Design Engineering	$ 600,000
	Pre-design Investigation	$ 1,000,000
	Treatability Study	$ 250,000
	Resident Engineering/Inspection	$ 350,000
	Contingency (20% of the project cost)	$ 1,409,516
	TOTAL CAPITAL COSTS	**$ 11,361,851**
OPERATION & MAINTENANCE (O&M) COSTS		
Annual O&M Costs		
6.	Groundwater (GW) Treatment Plant O&M	$ 885,347
7.	Long-term Monitoring (Annual GW Sampling)	$ 139,245
	TOTAL O&M COSTS	**$ 1,024,592**
PRESENT WORTH OF 30 YEAR COSTS		
8.	Total Capital Costs	$ 11,361,851
9.	O&M Costs (30 year duration)	$ 10,318,820
10.	Long-term Monitoring Cost (30 year duration) *	$ 1,727,897
	TOTAL PRESENT WORTH OF COSTS	**$ 23,400,000**

Notes:
Option 1: Install a pump-and-treat system near Old Mill Pond
Option 2: Install a pump-and-treat system each at the LAI facility and near Old M
Option 3: Install a pump-and-treat system each at LAI facility and near Old Mill Pond and enhance the treatment of the high concentration area at the
* Under Option 3, the treatment system at Old Mill Pond will be operated for 30 years, while the treatment system at the facility will be operated for 20 years.

Table 13
ARARs and Other Environmental Criteria
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Regulatory Level	ARAR or Environmental Criteria	Requirement Synopsis
Federal	National Primary Drinking Water Standards-Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs)	Establishes health-based standards for public drinking water systems. Also establishes drinking water quality goals set at levels at which no adverse health effects are anticipated, with an adequate margin of safety.
Federal	Clean Water Act Water Quality Criteria (Federal Ambient Water Quality Criteria [FAWQC] and Guidance Values [40 CFR 131.36])	Establishes criteria for surface water quality based on toxicity to aquatic organisms and human health.
Federal	Toxic Substances Control Act (TSCA) (40 CFR Part 761: PCB Manufacturing, Processing, Distribution in Commerce, and use Prohibitions)	Establishes cleanup, storage and disposal requirements for PCB contaminated soil and PCB transformers.
State	Determination of Soil Cleanup Objectives and Cleanup Levels by the Technical and Administrative Guidance Memorandum (TAGM) #4046	*Soil criteria developed based on protection of human health or groundwater quality used for* developing site-specific cleanup levels (updated May 12, 1999).
State	New York Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6NYCRR Part 703)	Establish numerical standards for groundwater and surface water cleanups.

Table 13
ARARs and Other Environmental Criteria
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Regulatory Level	ARAR or Environmental Criteria	Requirement Synopsis
State	New York State Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Technical and Operational Guidance Series 1.1.1)	Provides ambient water quality guidance values and groundwater effluent limitations for use where there are no standards.
State	New York State Department of Health Drinking Water Standards (10NYCRR Part 5)	Sets maximum contaminant levels (MCLs) for public drinking water supplies.
State	New York Technical Guidance for Screening Contaminated Sediments (Revised 1999)	This guidance provides a basis for screening of sediment contamination.

Table 13
ARARs and Other Environmental Criteria, Advisories or Guidance
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Regulatory Level	ARAR or Environmental Criteria	Requirement Synopsis
Federal	Coastal Zone Management Act (16 USC 33)	The Act encourages states/tribes to preserve, protect, develop, and where possible, restore or enhance valuable natural coastal resources.
Federal	Statement on Procedures on Floodplain Management and Wetlands protection (40 CFR 6 Appendix A)	This Statement of Procedures sets forth Agency policy and guidance for carrying out the provisions of Executive Orders 11988 and 11990.
Federal	Policy on Floodplains and Wetland Assessments for CERCLA Actions (OSWER Directive 9280.0-12, 1985)	Superfund actions must meet the substantive requirements of E.O. 11988, E.O. 11990, and 40 CFR part 6, Appendix A.
Federal (Non-Regulatory)	Wetlands Executive Order (EO 11990)	Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance natural and beneficial values of wetlands.
Federal	National Environmental Policy Act (NEPA) (42 USC 4321; 40 CFR 1500 to 1508)	This requirement sets forth EPA policy for carrying out the provisions of the Wetlands Executive Order (EO 11990) and Floodplain Executive Order (EO 11988).
Federal	Clean Water Act (CWA) Section 404 (40 CFR 404)	Under this requirement, no activity that adversely affects a wetland is permitted if a practicable alternative that does not affect wetlands is available. If no other practicable alternative exists, impacts on wetlands must be mitigated.
General	National Historic Preservation Act (40 CFR 6.301)	This requirement establishes procedures to provide for preservation of historical and archeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program.

Table 13
ARARs and Other Environmental Criteria, Advisories or Guidance
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Regulatory Level	ARAR or Environmental Criteria	Requirement Synopsis
State	New York Freshwater Wetland Permit (Articles 663 and 664)	Require permits for regulated activity disturbing wetlands.
State	New York Wetlands Laws (6 NYCRR Articles 24 and 25)	This regulation requires that any hazardous waste management activity that takes place in a 100-year floodplain, wetland, or area with endangered or threatened species shall comply with the provisions of the statutes and regulations, as applicable.
State	Endangered and Threatened Species of Fish and Wildlife (Part 182)	Standards for the protection of threatened and endangered species

Table 13
ARARs and Other Environmental Criteria, Advisories or Guidance
Lawrence Aviation Industries Site
Port Jefferson Station, New York

ARAR or Environmental Criteria	Requirement Synopsis
OSHA—Record keeping, Reporting, and Related Regulations (29 CFR 1904)	This regulation outlines the record keeping and reporting requirements for an employer under OSHA.
OSHA—General Industry Standards (29 CFR 1910)	These regulations specify an 8-hour time-weighted average concentration for worker exposure to various organic compounds. Training requirements for workers at hazardous waste operations are specified in 29 CFR 1910.120.
OSHA—Construction Industry Standards (29 CFR 1926)	This regulation specifies the type of safety equipment and procedures to be followed during site remediation.
RCRA Identification and Listing of Hazardous Wastes (40 CFR 261)	Describes methods for identifying hazardous wastes and lists known hazardous wastes.
RCRA Standards Applicable to Generators of Hazardous Wastes (40 CFR 262)	Describes standards applicable to generators of hazardous wastes.
RCRA—Standards for Owners/Operators of Permitted Hazardous Waste Facilities (40 CFR 264.10–164.18)	This regulation lists general facility requirements including general waste analysis, security measures, inspections, and training requirements.
RCRA—Preparedness and Prevention (40 CFR 264.30–264.31)	This regulation outlines the requirements for safety equipment and spill control.
RCRA—Contingency Plan and Emergency Procedures (40 CFR 264.50–264.56)	This regulation outlines the requirements for emergency procedures to be used following explosions, fires, etc.
New York Hazardous Waste Management System – General (6 NYCRR Part 370)	This regulation provides definition of terms and general standards applicable to hazardous wastes management system.
New York Solid Waste Management Regulations (6 NYCRR 360)	Sets standards and criteria for all solid waste management facilities, including design, construction, operation, and closure requirements for the municipal solid waste landfills.
New York Identification and Listing of Hazardous Waste (6 NYCRR Part 371	Describes methods for identifying hazardous wastes and lists known hazardous wastes.
New York State Environmental Conservation Law Section 27-1318, Institutional and Engineering Controls	Provides requirements for institutional controls and/or engineering controls as components of a remedial work plan

Table 13
ARARs and Other Environmental Criteria, Advisories or Guidance
Lawrence Aviation Industries Site
Port Jefferson Station, New York

ARAR or Environmental Criteria	Requirement Synopsis
RCRA Standards Applicable to Transporters of Hazardous Waste (40 CFR 263)	Establishes standards for hazardous waste transporters.
New York Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities (6 NYCRR Part 372)	Establishes record keeping requirements and standards related to the manifest system for hazardous wastes.
New York Waste Transporter Permit Program (6 NYCRR Part 364)	Establishes permit requirements for transportations of regulated waste.
RCRA Land Disposal Restrictions (40 CFR 268)	Identifies hazardous wastes restricted from land disposal and provides treatment standards under which an otherwise prohibited waste may be land disposed.
New York Standards for Universal Waste (6 NYCRR Part 374-3) and Land Disposal Restrictions (6 NYCRR Part 376)	These regulations establish standards for treatment and disposal of hazardous wastes.
Clean Water Act (CWA [40 CFR 122, 125)	National Pollutant Discharge Elimination System (NPDES) permit requirements for point source discharges must be met, including the NPDES Best Management Practice Program. These regulations include, but are not limited to, requirements for compliance with water quality standards, a discharge monitoring system, and records maintenance.
Clean Water Act (Federal Ambient Water Quality Criteria [FAWQC] and Guidance Values [40 CFR 131.36])	Establishes criteria for surface water quality based on toxicity to aquatic organisms and human health.
Safe Drinking Water Act – Underground Injection Control Program (40 CFR 144, 146)	Establish performance standards, well requirements, and permitting requirements for groundwater re-injection wells
New York Regulations on State Pollution Discharge Elimination System (SPDES) (6 NYCRR parts 750-757)	This permit governs the discharge of any wastes into or adjacent to State waters that may alter the physical, chemical, or biological properties of State waters, except as authorized pursuant to a NPDES or State permit.
New York Surface Water and Groundwater Quality Standards and Groundwater Effluent	Establish numerical criteria for groundwater treatment before discharge.

Table 13
ARARs and Other Environmental Criteria, Advisories or Guidance
Lawrence Aviation Industries Site
Port Jefferson Station, New York

ARAR or Environmental Criteria	Requirement Synopsis
Limitations (6NYCRR Part 703)	
New York State Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (TOGS 1.1.1)	Provides groundwater effluent limitations for use where there are no standards.
Clean Air Act (CAA)—National Ambient Air Quality Standards (NAAQs) (40 CFR 50)	These provide air quality standards for particulate matter, lead, NO_2, SO_2, CO, and volatile organic matter.
Federal Directive – Control of Air Emissions from Superfund Air Strippers (OSWER Directive 9355.0-28)	These provide guidance on the use of controls for superfund site air strippers as well as other vapor extraction techniques in attainment and non-attainment areas for ozone.
New York General Prohibitions (6 NYCRR Part 211)	Prohibition applies to any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emissions.
New York Air Quality Standards (6 NYCRR Part 257)	This regulation requires that maximum 24-hour concentrations for particulate matter not be exceeded more than once per year. Fugitive dust emissions from site excavation activities must be maintained below 250 micrograms per cubic meter ($\mu g/m^3$).
New York Division of Air Resources DAR-1 (Air Guide-1) AGC/SGC Tables	The tables provide guideline concentrations for toxic ambient air contaminants.
Suffolk County Private Water System Standards (Suffolk County Sanitary Code, Article 4 - Water Supply, §406.4)	Require permit approval for drilling private water systems for new construction of private houses or subdivisions. Permit will not be approved if public water supply system is available.

Appendix III

Administrative Record Index

LAWRENCE AVIATION INDUSTRIES, INC. SITE
ADMINISTRATIVE RECORD FILE
INDEX OF DOCUMENTS

3.0 REMEDIAL INVESTIGATION

3.2 Sampling and Analysis Data/Chain of Custody Forms

P. 300001 - 300602 Report: Outlying Parcel Soil Sampling Results, Technical Memorandum, Lawrence Aviation Industries Site, Remedial Investigation/Feasibility Study, Port Jefferson Station, New York, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, Region 2, August 13, 2004.

3.3 Work Plans

P. 300603 - 300807 Report: Final Work Plan, Volume I, Lawrence Aviation Industries Superfund Site, Remedial Investigation/Feasibility Study, Port Jefferson Station, Suffolk County, New York, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, Region 2, April 22, 2003.

P. 300808 - 301311 Report: Final Quality Assurance Project Plan, Lawrence Aviation Industries Site, Remedial Investigation/Feasibility Study, Port Jefferson Station, New York, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, Region 2, September 24, 2003.

3.4 Remedial Investigation Reports

P. 301312 - 301675 Report: Final Remedial Investigation Report, Lawrence Aviation Industries Site, Remedial Investigation/Feasibility Study, Volume 1, Text, Tables, and Figures, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, Region 2, March 3, 2006.

P. 301676 - 302580 Report: Final Remedial Investigation Report, Lawrence Aviation Industries Site, Remedial Investigation/Feasibility Study, Volume 2, Appendix A-G, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, Region 2, March 3, 2006.

P. 302581 - 303604 Report: Final Remedial Investigation Report, Lawrence Aviation Industries Site, Remedial Investigation/Feasibility Study, Volume 3, Appendix H-L, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, Region 2, March 3, 2006.

8.0 HEALTH ASSESSMENTS

8.1 ATSDR Health Assessments

P.	800001 - 800576	Report: Revised Final Baseline Human Health Risk Assessment, Lawrence Aviation Industries Superfund Site, Remedial Investigation/ Feasibility Study Port Jefferson Station, New York, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, Region 2, February 22, 2006.

LAWRENCE AVIATION INDUSTRIES, INC. SITE
ADMINISTRATIVE RECORD FILE UPDATE
INDEX OF DOCUMENTS

3.0 REMEDIAL INVESTIGATION

3.4 Remedial Investigation Reports

P. 303605-303794 — Report: Final Screening-Level Ecological Risk Assessment, Lawrence Aviation Industries, Inc. Superfund Site, Remedial Investigation/ Feasibility Study, Port Jefferson Station, New York, prepared by CDM Federal Programs Corporation, prepared for U.S.EPA, Region 2, December 30, 2005.

4.0 FEASIBILITY STUDY

4.3 Feasibility Study Reports

P. 400001 - 400322 — Report: Final Feasibility Study Report, Lawrence Aviation Industries Site, Remedial Investigation/Feasibility Study, Port Jefferson Station, New York, prepared by CDM Federal Programs Corporation, prepared for U.S. EPA, Region 2, July 6, 2006.

10.0 PUBLIC PARTICIPATION

10.9 Proposed Plan

P. 10.00001-10.00018 — Superfund Proposed Plan, Lawrence Aviation Industries Superfund Site, Suffolk County, New York, prepared by U.S. EPA, Region 2, July 2006.

P. 10.00019-10.00019 — Letter to Mr. George Pavlou, P. E., Director, Emergency Remedial Response Division, U.S. EPA, Region 2, from Mr. Dale A. Desnoyers, Director, Division of Environmental Remediation, New York State Department of Environmental Conservation, re: Proposed Remedial Action Plan, Lawrence Aviation Industries Superfund Site No. 152016, Port Jefferson Station, Suffolk County, July 18, 2006.

Appendix IV

State Concurrence Letter

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A
625 Broadway, 11th Floor
Albany, New York 12233-7015
Phone: (518) 402-9625 • **Fax:** (518) 402-9022
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

SEP 29 2006

Mr. George Pavlou
Director
Emergency & Remedial Response Division
USEPA
Floor 19-#E38
290 Broadway
New York, New York 10007-1866

Re: Lawrence Aviation Industries
Site No. 152016
Record of Decision

Dear Mr. Pavlou:

The New York State Department of Environmental Conservation and the New York State Department of Health have reviewed the above referenced ROD. The State concurs with the selected remedy as stated in the draft ROD of September 2006.

If you have any questions, please contact Dr. Chittibabu Vasudevan at (518) 402-9625.

Sincerely,

for Dale A. Desnoyers
Director
Division of Environmental Remediation

cc: J. LaPadula, USEPA
A. Carpenter, USEPA
S. Badalamenti, USEPA
C. Vasudevan

Appendix V

Responsiveness Summary

RESPONSIVENESS SUMMARY
Lawrence Aviation Industries, Inc. Superfund Site

On July 20, 2006, the U.S. Environmental Protection Agency (EPA) released for public comment the Proposed Plan for the Lawrence Aviation Industries, Inc. (LAI) Superfund Site (Site). The time in which comments to the Proposed Plan could be submitted was initially from July 20 through August 19, 2006, but. this timeframe was extended to September 18, 2006 after a request for an extension was made. During the public comment period, EPA held a public meeting on August 1, 2006 to discuss the Proposed Plan and received comments on it. In addition, EPA received written comments on the Proposed Plan during the public comment period. This document summarizes the comments submitted by the public. EPA's response to each comment follows the comment.

The comments are grouped into the following categories:

- Site Risks
- Extent of Site contamination
- Implementation of the Selected Remedy
- Other issues

Site Risks

Comment 1: A report appeared in USA Today indicating that The National Academy of Sciences reported that trichloroethylene (TCE) is of greater concern than was previously thought. Has the EPA considered changing its TCE standards? As TCE is characterized as highly likely to produce cancer in humans, what is the status of the standards?

Response: The toxicity of TCE has been studied for a very long time and it's a very complex topic. How TCE behaves in the body and how it's metabolized in the body is still being studied. EPA prepared a draft TCE risk assessment in 2001. This document was sent to the National Research Council (NRC) in 2003 for its review, which was recently announced and received widespread news coverage. In its review, the NRC urged EPA to finalize the draft risk assessment, which it is in the process of doing. Currently, there are enforceable standards established at both the state and federal level for TCE in drinking water. The current standards are set nearly as low as the practical detection limits of the analytical methods that are currently available to measure TCE concentrations.

Comment 2: Has EPA evaluated the synergistic effect of the combination of the different Volatile Organic Compounds (VOCs)?

Response: EPA's risk assessment methodology, which was used to evaluate the risk at the LAI Site, uses an additive process for evaluating the risk associated with exposure to multiple chemicals, including VOCs. This means that the health effects of chemical A and the health effects of chemical B are added together.

Comment 3: Was EPA's assessment of TCE at the LAI Site similar to assessments done at other sites with TCE, or is this a unique case?

Response: The assessment done at LAI followed the Agency's standard practice of assessing risk associated with TCE.

Comment 4: Have there been any studies of the health of the people living in a 5-mile radius of the Site, particularly the people who used the contaminated well water? Do studies exist that compare public health before and after residents were connected to public water?

Response: The areas within 5 miles of the Site were included in the NYSDOH Coram -Mount Sinai-Port Jefferson Station follow-up investigation conducted by the New York State Department of Health (NYSDOH). This regional investigation attempted to identify possible risk factors that could have caused a higher than expected' incidence of breast cancer in the area. The investigation did not find any unusual environmental or other factors related to breast cancer or other health effects in the area. Details about this investigation, including the study area and results, are available online at http://health.state.ny.us.

In addition, a Public Health Assessment for the Lawrence Aviation Industries Site was prepared by the NYSDOH under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). The Public Health Assessment evaluated known and potential exposure pathways associated with the site. The evaluation and results are described in the report dated November 2005, which is available at two local Libraries: the Comsewogue Public Library at 170 Terryville Road and the Port Jefferson Free Library at 100 Thompson Street. You may also contact the NYSDOH at 1-800-458-1158 (Ext 27870) to obtain a copy of the report.

Because of the relatively small number of people exposed via well water, it would not be feasible to conduct a study of the health of these people, as such a small study would not be able to detect increases in disease. Similarly, a study of individuals prior, as well as after their consumption of public water is also not feasible due to the small number of people involved.

Comment 5: Has EPA surveyed local residents to assess actual, local health effects?

Response: Because of the relatively small number of people exposed via private well water, it would not be feasible to conduct a study of the health of these individuals, as such a small study would not be able to detect adverse health effects.

Comment 6: How dangerous is it to live in a 5-mile radius of this Site?

Response: People are not drinking the contaminated groundwater at or near the Site. All residents in Port Jefferson Station and the Village of Port Jefferson are connected to the public drinking water supply, which is routinely monitored for quality and must comply with drinking water standards. This has removed risks posed by drinking water. EPA is currently conducting vapor intrusion monitoring in potentially affected areas to evaluate the potential for exposure to VOCs associated with the Site via vapor intrusion. Additional evaluation of the ambient air in the vicinity of Old Mill Pond is ongoing. With respect to the contaminated soil at the Site, EPA has determined that it is limited to the soil at the LAI Facility.

Comment 7: Does EPA believe that the local cancer cluster issue is separate from the LAI Site in particular?

Response: The NYSDOH is only aware of an unusual pattern of breast cancer incidence during 1993-1997. The results of the Coram-Mount Sinai-Port Jefferson Station follow-up investigation, which investigated this pattern, are available online at http://health.state.ny.us. The investigation did not find any unusual environmental or other factors related to breast cancer or other health effects in the area. No other unusual disease patterns have been identified.

Comment 8: One commentator was concerned that his home may be impacted by vapor intrusion from contaminated groundwater.

Response: Based on the soil vapor intrusion sampling conducted by EPA thus far, no indoor air at area homes or within the Port Jefferson High School has been impacted. If you believe your home is located at or near the contaminated groundwater plume, you may contact EPA in order to be evaluated for soil vapor intrusion testing.

Extent of Site Contamination

Comment 9: What about the reclamation center located adjacent to the site? There are piles of compost thirty feet high that sit out there and leach material into the ground. These piles have a strong odor associated with them.

Response: The reclamation center in question is the Chip-It-All facility which is located to the west of the LAI Facility. According to EPA inquiry, it is a composting operation that is regulated by the State. The piles of compost are associated with the processing of trees at the Chip-It-All facility. There are groundwater monitoring wells in the area and samples taken from these wells did not show Site-related contamination of the wells. The compost material is made up of trees which have been chipped and is the type of material that is commonly used as mulch for backyards. Also refer to EPA's response to Comment 60.

Comment 10: Why haven't the electric transformers at the Site been tested yet, and when is EPA planning on doing this testing?

Response: EPA noted in the Proposed Plan for the Site that there are approximately 30 transformers remaining at the Site and as part of the Soil Remedy to be implemented during the Remedial Design (RD), EPA intends to evaluate the transformers for possible leakage and the presence of Polychlorinated Biphenyls (PCBs) in their oils. If the transformers require remediation, it will be done during future remedial actions.

Comment 11: Are some private contaminated wells still being used for sprinkler systems?

Response: There are two homes that have private wells, but they are used for sprinklers, not for drinking water. Those private wells were tested by EPA and no Site-related contamination was detected. The wells that are contaminated are wells that were specifically installed by EPA, NYSDOH, or SCDOH, to examine the groundwater at the Site for contamination. These wells are typically called monitoring wells.

Comment 12: If there is a 30-foot layer that acts as a barrier, how did TCE penetrate the soil all the way to the groundwater?

Response: There was no continuous 30-foot layer of clay or silt found beneath the Site. The layer beneath the Site that is rich in silt was not laterally continuous across the entire Site. It has areas of gravel, so it is not totally continuous and does not act as a barrier to the downward migration of TCE, which is what occurred at the LAI Site.

Comment 13: Why isn't the methyl tertiary butyl ether (MTBE) contamination found in groundwater samples at the Site being addressed?

Response: A very high percentage of groundwater samples from most sites in NY have been found to contain MTBE ever since it was added as a gasoline additive. The MTBE found at downgradient monitoring wells is not Site-related. EPA is working with the State to implement state wide remediation of MTBE. However, the State has the lead on petroleum-related releases, of which the MTBE found at the Site is a common constituent. NYSDEC has indicated it will monitor the MTBE concentrations as necessary and attempt to identify its source.

Comment 14: Did the sampling of the indoor air at the Port Jefferson High School show any high results of TCE?

Response: Results of all indoor air sampling within the Port Jefferson High School indicated no detections above EPA's screening levels for any of the Site-related contaminants of concern, including TCE. Two subslab locations beneath the school will be retested in the next round of EPA's continuing vapor intrusion investigation.

Comment 15: What is the significance of the red dotted line drawn on one of the maps shown at the public meeting? My house is just a little to the left of that red dotted line. Is it considered to be in a safe area?

Response: The red dotted line is an approximation of where EPA believes the groundwater plume is. If you're near that area, please contact EPA about testing your home for vapor intrusion. As already stated in the response to Comment 8, the current indoor air sampling results conducted by EPA at homes in the plume area have shown no impacts to indoor air from volatilized TCE.

Comment 16: Were any air samples taken near Old Mill Creek? Many people in town spend time sitting around the creek. Students have their physical education outdoors and they spend quite a bit of time in that area.

Response: Initially, air by the pond was tested, and some elevated concentrations of TCE were noted at the pond. Additional air sampling around Old Mill Pond was conducted on August 28, 2006 and the results, when available, will be evaluated by EPA and provided to the Village.

Comment 17: It seems that the contamination is limited to the industrial Site. The Outlying Parcels are about 90 acres. Can one assume, based on your findings, that that acreage is clean?

Response: EPA studied the Outlying Parcels as part of the Remedial Investigation. Sampling of that area found soil concentrations which exceeded the screening criteria for metals, including arsenic. Based on the sampling results, EPA performed Human Health and Screening Level Ecological Risk Assessments. The Human Health Risk Assessment concluded that human health risks are below or within the acceptable EPA risk range. The Screening Level Ecological Risk Assessment concluded that although several metals have the potential to increase the risk to ecological receptors, the metals are common elements in soils and are likely not Site-related. Given the results of the remedial investigation, the human health and ecological risk assessments, and the history of the Site, it appears that the Outlying Parcels do not contain elevated concentrations of Site-related materials.

Implementation of the Selected Remedy

Comment 18: Several commentators indicated their support for the selected remedy.

Response: Comment acknowledged.

Comment 19: Is it certain that funding will be available for the cleanup, or is that questionable depending on presidential elections?

Response: Funding is an issue and it cannot be guaranteed prior to the selection of a remedy. EPA makes every effort to complete the remediation of Superfund sites that are found to require cleanup.

Comment 20: Shouldn't additional institutional controls such as fencing be put in place at the pond? Please comment on the current health risk to children who may inadvertently play in the creek and the pond.

Response: Fencing is not an institutional control. It is actually a type of engineering control used by EPA as part of a remedy, as would be the sign that is currently at the pond. Due to the presence of TCE in samples taken at Old Mill Pond, as a precautionary measure, signs were posted by NYSDOH in 1993 warning against any prolonged contact with the water. In 1997, and again in 2003, new signs were posted as replacements for signs missing or in disrepair. The human health risk assessment conducted by EPA for the Site showed that there were no unacceptable risks from recreational exposure to the surface water.

Comment 21: The Civic Association for Setauket supports the Selected Remedy for the LAI Site. However, it is the hope of the Civic Association that the remediation of the LAI Site does not delay the completion of the Setauket Port Jefferson bike path. Some of the recommended excavation is on the site of the planned bike path. The Civic Association will submit more details and written comments to the appropriate committee before the deadline.

Response: EPA will work with local officials to coordinate remedial activities at the Site and to minimize any impacts to the community. This would include any remedial activities in the area of the proposed bike path.

Comment 22: Please elaborate on the type of chemical proposed to be added groundwater as part of the groundwater remedy. Are there any risks associated with this method of breaking down the VOCs?

Response: Among others, two oxidants, hydrogen peroxide, or potassium permanganate, which is an oxidant similar to hydrogen peroxide, are being considered for use at the Site to treat the TCG contamination in the groundwater. A final determination regarding which oxidant to use will be made during the RD phase. The introduction of either of these oxidants to the groundwater will not increase the risk associated with the Site and it will not leave a toxic residue in the groundwater.

Comment 23: The Proposed Remedy states that excavated soils will be transported to off-site facilities. What and where are these facilities?

Response: Any contaminated material removed from a Superfund site is required by law to go to a permitted facility. Those facilities are located throughout the country. They are commercial operations and are regulated by the states to accept waste within certain engineered disposal areas. Approvals are required before sending any materials off-site. Once the Remedial Action is begun, the appropriate off-site facility will be selected to receive the excavated soils from the Site.

Comment 24: Under the groundwater remedial alternatives, the one being proposed, Alternative GW3, Option 3, will take 30 years to implement. Is the S2 alternative for the soil remediation immediate?

Response: Alternative S2 will take a much shorter period of time than GW3, Option 3 to implement. However, prior to soil cleanup, EPA will refine the delineation of the area of soil to be excavated. Mobilization of the needed earth moving equipment also will take some time. EPA anticipates that the soil remedy can. be completed within six to twelve months after construction of the soil remedy is initiated.

Comment 25: Will the groundwater cleanup start at the location with water beneath the Site or closer to the harbor?

Response: At this time, EPA is unsure at which location the groundwater cleanup will begin. During the RD phase, EPA will determine where remediation should start or if both areas should be remediated simultaneously.

Comment 26: Disrupting the on-Site soil seems like it could make matters worse.

Response: The soils that will be removed at the LAI Facility area of the Site are contaminated with PCBs, which are located mostly in the upper portions of the soil. These materials do not migrate in the1 same way that as VOCS do. PCBs tend to sorb to soils and have limited mobility. The PCB-contaminated soils are not co-located with VOCs, so VOCs will not be disturbed during excavation. Air monitoring will be conducted and measures to control and suppress dust will be taken during soil excavation activities.

Comment 27: The National Contingency Plan (NCP) requires that the remedy be cost-effective. The $24 million cost of the Selected Remedy seems prohibitive of the property being put to any kind of productive use in the near future.

Response: The cost-effectiveness criterion in the NCP requires that EPA consider whether the costs of a remedial alternative are grossly excessive compared to the overall effectiveness of that remedial alternative in considering whether to eliminate a remedial alternative from consideration for selection. The cost criterion also requires EPA to consider, when comparing one remedial alternative against another, whether similar effectiveness and implementability may be achieved at a lesser cost when similar methods or controls are being employed. However, the cost requirements of the NCP do not call for an evaluation of the remedial cost against the ultimate value of the real property being remediated. EPA complied with the requirements of the NCP in comparatively evaluating costs of the various remedial alternatives in selecting the remedy for the LAI Site.

Comment 28: What will happen if, during the cleanup, the source material of the TCE contamination is not found? Could it take 70 years to clean up the Site if the location of the source cannot be determined?

Response: The TCE groundwater plume will be better defined during the pre-design investigation, after the issuance of the Record of Decision (ROD). The design will incorporate the additional information related to the source material. EPA does not anticipate that it will take 70 years to clean up the Site. EPA has projected the estimated time frame in the Proposed Plan and the ROD to be 30 years based on preliminary modeling conducted.

Comment 29: Only 1.2 parts per million (ppm) of TCE was detected in groundwater samples. Why is $24 million being spent to remediate 1.2 ppm, a level that decreased since the last time groundwater was sampled? The only thing at risk seems to be the habitants in the pond.

Response: TCE was detected at 1,200 micrograms per liter (or parts per billion (ppb)) , which is 240 times higher than the drinking water standard of 5 ppb. Although no one is currently drinking the contaminated groundwater, State regulations require New York State groundwater to be considered as a drinking water source. The Federal regulation states that EPA must remediate all groundwater to its most beneficial use. Risks were identified during the HHRA under the potential future use scenarios, and that is what the Selected Remedy is designed to mitigate.

Additionally, EPA evaluates the impacts to human health and the environment, which does include nonhuman receptors, from site contamination. Ecological receptors, are also evaluated and considered in EPA's remedial decision-making.

Comment 30: Is there any consideration being given to dredging contaminated sediments once the contaminants are removed from groundwater?

Response: During the RD, EPA will consider whether or not surface water sediments should be dredged and removed once groundwater is no longer contaminating surface water and sediments. The residual VOCs in the sediment are expected to attenuate soon after the operation of the groundwater remedy is initiated. Surface water and sediment will be monitored during the remediation.

Comment 31: Is there any kind of long-term, remedy that's being considered for soil vapor across the entire area?

Response: The best approach to solving soil gas problems is on a property-by-property basis. There are some sites with extremely high levels of soil gas where EPA can sometimes use systems to extract gases, from the soil, but this is most effective when the contamination is in a localized area. EPA has not found these conditions at the Site. The most efficacious remedy for the LAI Site would be to install individual mitigation systems in affected homes, which EPA will do if necessary, and remediate the groundwater.

Comment 32: Is there a risk of generating vinyl chloride during the degradation of the TCE, and how does that affect soil vapor?

Response: Natural processes in groundwater (usually naturally occurring bacteria)) can sometimes degrade TCE and produce by-products such as vinyl chloride, which is more toxic than the TCE itself. This process is not occurring in the groundwater plume at the LAI site. The type of oxidation proposed as part of the Selected Remedy. would be strong enough to destroy the TCE and any of the breakdown products. In this case, a strong oxidant will break down the contaminants on contact. In addition, groundwater will be monitored throughout the process.

Comment 33: Has the location for the pump station at the Old Mill Pond been determined, or will that be part of the design? How much area will it take up? It's a wetland area; is that typically located in a wetland area?

Response: Those decisions will be made during the RD. EPA will work with the local community to make sure that any impacts to wetlands, floodplains or coastal zones associated with the final location of the pump and treatment system are assessed and minimized.

Comment 34: Who is going to be paying for the cleanup? Is there some mechanism by which a developer would pay for some or all of those costs?

Response: Superfund has a reimbursement mechanism for any costs that are spent by the Agency when the Agency takes action to respond to a release or a threat of a release. LAI and Gerald Cohen, the president of LAI, have both been sued by the United States who alleged that they are liable for the costs EPA has incurred in cleaning up the Site. The lawsuit also seeks a declaratory judgment as to their liability for future costs incurred by EPA in cleaning up the Site, including implementing the Selected Remedy. However, EPA anticipates funding the Selected Remedy with money from the Superfund and then seeking to recover that money from LAI and Cohen. In its lawsuit, the United States has sought to foreclose a Superfund lien in favor the United States on properties included within the LAI Site that are owned by LAI and Cohen (see Response #60(b), below) to reimburse EPA for its past costs. The Superfund law provides that, among the parties who are liable for response costs at a site, are the current owners and the current operators of the site. Thus, if the LAI Site were to be developed by a party who was already an owner or an operator, such developer might have Superfund liability. Further, a future developer might also become liable for the costs associated with the LAI Site unless that future developer was entitled to an exemption from Superfund liability or unless that developer had reached a settlement agreement with the United States before becoming an owner or an operator of the site. There is an exemption from Superfund. liability for a bona fide prospective purchaser ("BFPP") who complies with the provisions of the Superfund law regarding BFPPs in connection with its acquisition and its ownership of the subject property, although in the case of BFPPs, EPA may have a lien for any windfall that may accrue to the BFPP as a result of EPA's cleanup.

Comment 35: At the nearby Kings Park psychiatric hospital site, there was concern that a developer would come in and clean up the site, but that it would lead to increased density in that area to make the cleanup financially feasible. Is that typical at Superfund sites?

Response: EPA remediates sites in accordance with current and reasonably anticipated future uses. Once remediated, decisions on future property usage are made by the property owner in conjunction with the local government. The hospital site is not a Superfund site.

Comment 36: Could the clean Outlying Parcels be developed while the Site is being modified or cleaned up?

Response: Yes. Although EPA's Proposed Plan evaluated future uses of the Outlying Parcels, development is a local issue to be determined by local regulatory authorities and the property owner.

Other Issues

Comment 37: How will the Site affect future building and permit processes? Will venting systems be required underneath cement slabs and driveways or will any other new technologies be required? Will we be made aware of any new requirements?

Response: EPA does not make local planning or construction decisions. If vapor intrusion is found to be a problem, installation of a venting system in any new structure is a typical solution. EPA will continue to. keep the community updated through fact sheets, updates, public meetings and availability sessions.

Comment 38: Are VOCs related to the radon issue that was brought up years ago?

Response: No, radon is a radioactive gas that is a by-product of natural decay from radium which

is naturally contained in some soils and rocks. Acetone is an example of a VOC. The two are not related.

Comment 39: Is titanium TCE?

Response: No, titanium is a metal and TCE is a volatile organic compound.

Comment 40: What's TCE and where would you find it?

Response: TCE is used commonly as a degreasing solvent at industrial facilities. It is also used in a variety of consumer products. Years ago, TCE was used as a degreasing agent in septic systems. It is one of the most common chemicals found at Superfund sites.

Comment 41: Where are the public water supply wells?

Response: The closest wells are located approximately one mile to the northeast of the LAI Facility. This would be sidegradient of or off to the side of the location of the groundwater plume and its migration pathway.

Comment 42: The Stony Brook University Earth and Space Science Department has a good team of people studying this area. EPA might want to consider employing their expertise in creating a model.

Response: EPA will consider this option.

Comment 43: Please elaborate on the timing of the VOC samples collected in classrooms and surrounding homes. Were samples taken for a short period (e.g., 10 minutes) at each sampling location? Was the air conditioning on during the sampling?

Response: Each sample was collected over a 24-hour period; short sample times are not representative. Sub-slab and indoor air sampling at the school was done when the students were off during Presidents week. The samples were collected over a 24-hour period and then sent to the lab for analysis. A trace atmospheric gas analyzer (TAGA) mobile laboratory was also used to measure VOCs at the school for instantaneous screening results.

Comment 44: Multiport wells installed by EPA to delineate the plume did not provide sufficient data to map the extent of contamination north of the Pond and Creek to the harbor. More test wells need to be installed where your own maps on Figure 1-24 and 1-24A show question marks. As you are aware, there are always projects proposed in the active Village. Some of these projects are already impacted by the uncertainty of defining the contamination levels and depths of TCE and PCE in this area.

Response: The overall objective of the Remedial Investigation (RI) is to define the nature and extent of contamination associated with a site in sufficient detail to develop remedial alternatives in the feasibility study (FS) and select a remedy. The results of the RI were sufficient to meet those objectives. EPA recognizes that additional groundwater data may be needed to define groundwater conditions between Old Mill Pond/Creek and Port Jefferson Harbor to support design of the groundwater remedy selected in the Record of Decision. The need for additional groundwater

monitoring and hydrogeologic data in this area was acknowledged in the RI and the FS reports. The additional data will be collected during the pre-design investigation phase of the RD.

While any potential exposures to construction workers would be short term, if groundwater were encountered during construction of new building projects above the TCE plume within the Village of Port Jefferson (Village) , where groundwater is expected to be relatively shallow, appropriate health and safety measures should be implemented by contractors to protect construction workers.

Comment 45: The eastern extent of the plume, as shown on Figures l-24b and 1-24A, maps the apparent edge of the plume running from Sheep Pasture Road to the north (over 4,000 feet) using MPW-08 and MPW-6 only. This is not a reasonable extrapolation from limited data.

Response: EPA considered a number of factors in selecting monitoring well locations to define the nature and extent of groundwater contamination associated with the LAI Site.

Prior to installing the wells, EPA reviewed existing groundwater data and conducted additional activities to assist with selection of locations for monitoring wells. A summary of these activities is provided below:

- Review of existing groundwater data from wells installed by Suffolk County and the New York State Department of Environmental Conservation (NYSDEC) and from existing residential wells ("PJ" and "MW" wells)
- Review of existing information on potential contaminant sources on the LAI Facility and the Outlying Parcels
- Review of groundwater modeling results prepared for NYSDEC as part of a previous limited RI
- Redevelopment and resampling of older, pre-existing wells that were still functional
- Groundwater screening (Membrane Interface Probe [MIP]) at 10 separate locations to depths of up to 100 feet below the ground surface in downgradient areas to define the approximate lateral and vertical boundaries of the groundwater plume

These data were evaluated and the results used to locate the new multi-port monitoring wells installed during the RI. The location of and rationale for the RI monitoring wells were documented in an EPA technical memorandum which provided the rationale for placement of monitoring wells. The MIP groundwater screening showed the plume to be fairly narrow within the Village.

EPA conducted extensive groundwater, soil, and hydrogeologic investigations on the LAI Facility and downgradient areas. Hydrogeologic investigation activities provided data to determine groundwater flow in the area between the LAI Facility and the Old Mill Pond/Creek. area. Extensive soil investigation activities were conducted on the Outlying Parcels, located east of the groundwater plume.

In addition to data from MPW-08 and MPW-06, MPW-03 also establishes the eastern plume boundary. Although it does not penetrate the full thickness of the aquifer, data from residential well RW-201SPR, is also relevant to the establishment of the eastern boundary of the plume.

Multiple lines of evidence including groundwater flow data, sampling data from new and existing monitoring wells, historical groundwater sampling data, and groundwater screening data indicate that the groundwater plume has been sufficiently defined to meet the objectives of the RI. Additional

groundwater characterization will be performed during the pre-design investigation. EPA will consider additional groundwater characterization along the eastern boundary of the plume at that time. Specific monitoring locations will be determined based on the specific data needs of the RD.

Comment 46: With respect to the western extent of the plume as one comes into the Village, EPA's map (dotted line) relies on MPW-05, northward over 2200 feet ending in question marks on your maps. One and preferably two wells, should be installed on this western side. The concern in points 1, 2, and 3 here is that there could be a fanning of the plume as it approaches the downtown area of the Village. We do not believe the health and safety of our residents can be protected without additional test wells.

Response: Please also refer to the response to comment No. 45 above. As part of the RI, EPA conducted groundwater screening with a membrane interface probe (MIP) at 10 separate locations at depths up to 100 feet below the ground surface to estimate the approximate eastern and western boundaries of the plume in the downtown area of the Village of Port Jefferson. Results of the MIP groundwater screening showed the plume to be fairly narrow in the Village area. The MIP screening results do not indicate that the plume is "fanning out" in the downtown area of Port Jefferson. In addition, groundwater level data collected at multiple locations show a fairly linear flow toward the north. The data do not indicate any flow anomalies that would suggest significant flow toward the east or west. For the reasons cited above, EPA believes that the current monitoring well network provides a reasonable estimate of the plume boundary.

In addition to MPW-05, sampling results from existing wells (PJ-11, PJ-12, and PJ-05) installed by Suffolk County are also useful for establishing the western boundary of the plume. The PJ wells, however, do not penetrate the entire thickness of the aquifer and, therefore, do not provide data on the deeper portions of the aquifer. The levels of VOCs detected in these wells were below applicable drinking water standards.

EPA recognizes that during the RD additional groundwater data may be needed to define groundwater conditions between Old Mill Pond/Creek and Port Jefferson Harbor to support design of the groundwater remedy described in the proposed plan. The need for additional groundwater monitoring and hydrogeologic information in this area was acknowledged in the RI and FS reports. As discussed in the previous comment, additional groundwater characterization will be performed during the pre-design investigation. EPA will consider additional groundwater characterization along the western boundary of the plume at that time. Specific monitoring locations will be determined based on the specific data needs of the RD.

Comment 47: The plan to remove soils at the LAI facility that are contaminated with metals such as cadmium, chromium, titanium, zinc, arsenic, mercury, and lead is commendable.

Response: The comment is acknowledged. Based on the human health risk assessment, EPA is planning to remove soils contaminated with PCBs as these soils present unacceptable risk. Although some metals will be removed from the soils along with the PCBs, the soil remediation is focused on the removal of PCBs, not metals.

Comment 48: EPA needs to address all the cesspools at the LAI Site, test them and clean up those found to be contaminated. If source or "hot spots" are not fully explored, then contaminants will continue to feed the plume.

Response: During the pre-design phase, EPA plans to characterize all the cesspools and catch basins that were not evaluated during the RI, and, if necessary, remove any contaminated materials that exceed cleanup objectives.

Comment 49: Provide additional soils testing to assure that no pockets of TCE or PCE remain on the LAI Site.

Response: EPA conducted an extensive and thorough soil investigation during the RI. Membrane interface probe (MIP) screening was conducted at 90 locations on the LAI Site to depths of up to 100 feet below the ground surface. The MIP screening was conducted in a way that allowed additional points to be screened near locations with positive results, ensuring that any contaminated areas would be thoroughly screened. The MIP screening covered all of the waste storage/disposal areas identified from historical aerial photographs and reports. The MIP screening investigation identified small areas with elevated levels of VOCs. To confirm the MIP results, these areas were sampled and tested during the subsequent soil sampling investigation. The soil sampling investigation included collection of soil samples from 74 separate locations on the LAI facility.

Over 260 soil samples were collected on the LAI Facility, from the surface to depths of up to 200 feet. Samples were collected below buildings and from all waste storage/disposal areas identified from historical information. VOCs (including TCE and PCE) in soils were detected at low levels in only a few samples. Although no major sources of TCE in soil were identified, EPA concluded that the soil investigation results adequately define the nature and extent of soil contamination at the LAI Facility.

Additional borings to investigate further the potential presence and location of residual soil contamination will be conducted during the pre-design investigation in the area of high TCE groundwater contamination.

The proposed plan also describes additional soil sampling that will be conducted to further define areas of PCB contamination on the LAI facility. This sampling will be conducted during the pre-design investigation.

Comment 50: EPA should move quickly to cleanup soils contaminated with PCBs from leaking transformers.

Response: EPA will evaluate the possibility of accelerating portions of the remedy.

Comment 51: The proposed pump and treat plan for the LAI Facility and the Pond area are acceptable. However the lack of any plans to clean up the sediment of the Creek and Pond, which are contaminated with VOCs, is unacceptable.

Response: The groundwater and hydrogeological data collected during the RI indicate that the VOCs in pond and creek sediments are a result of discharge of contaminated groundwater to those water bodies. The VOCs are volatile, do not adsorb strongly to sediments, and, in some case's, may be degraded through natural processes. The residual VOCs in the sediment are expected to attenuate soon after the operation of the groundwater remedy is initiated. Periodic surface water and sediment sampling will be conducted to monitor the effectiveness of the operation of the groundwater treatment system on VOC levels in the pond and creek surface water and sediment.

Comment 52: The Village should be consulted on the design of the groundwater extraction and treatment system at the Pond. The building should have some architectural details and fit as best as it can into the area.

Response: EPA will provide details of the design for review by the Village of Port Jefferson.

Comment 53: Injecting of oxidants into the groundwater is intended to accelerate the breakdown of such VOCs as PCE and TCE. However, some residents have concerns that the injection of chemicals could make the situation worse. The presentation did not identify the chemical oxidant that would be used.

Response: Chemical oxidation is a proven technology for treating VOCs in groundwater and has been used at numerous sites across the country. There are a number of oxidants available for this purpose. Potential oxidants considered in the FS included Fenton's Reagent, potassium permanganate, activated persulfate, and catalyzed percarbonate. These oxidants have been used to treat TCE plumes and all have relatively short lifetimes in the environment. The choice of oxidant and oxidant concentration and dosing are determined based on the type and concentration of the chemical (s) to be oxidized, the nature of the aquifer materials, and other design considerations. The oxidant must remain active in groundwater for a period of time to ensure destruction of contaminants. However, the oxidants quickly react with the contaminants and aquifer matrix and break down into natural constituents typically found in soil and groundwater. Oxidant injection will be limited to a small area below the LAI Facility. It is expected that the oxidant will not migrate significantly from the source area during the relatively short time frame of treatment.

The specific chemical oxidant will be selected during the design process, based upon treatability studies, as indicated in the feasibility study.

Comment 54: Alternative S2 will remove the soils that may pose an ecological threat, and should be sufficient if the Site is used for industrial/commercial purposes only; however, other contaminated soils will remain onsite (e.g., in unsampled areas and below buildings) that would not be compatible with residential use.

Response: The LAI facility is currently privately held, reported by the owner to be active, and is currently zoned for industrial/commercial use. The cleanup goals established for soils under alternative S2 are compatible with the current use of the property and the reasonable anticipated future use of the property for industrial/commercial usage.

It is noted that during the remedial investigation soil boring was conducted at the LAI Facility and samples were taken below most of the LAI Facility buildings.

The selected soil remedy also includes institutional controls consisting of an environmental easement/restrictive covenant to be filed in the property records of Suffolk County that will limit the use of the industrial area of the site to commercial and/or industrial uses only.

If there is a proposal to use any portion of the property previously used for industrial purposes (LAI Facility), EPA would reevaluate the protectiveness of the selected remedy. Also the Outlying Parcels were not found to have evidence of contamination from industrial activities and are currently suitable for reuse subject to State and local requirements.

Comment 55: Can the current owner can be forced to file a restrictive covenant on the property that would limit its use to commercial and/or industrial activities only; this would effectively make the property unusable should the Town of Brookhaven rezone the property to residential.

Response: The Industrial parcels are currently, zoned for light industrial/commercial use and the clean-up proposed by EPA anticipates continuation of such use. EPA will endeavor to get the property owner to file deed, restrictions such as restrictive covenants and/or easements on the property limiting its use to light industrial/commercial. In the unlikely event that the property owner is unwilling to do so, the United States has authority under Section 104 (j) of CERCLA to condemn the property interest to file such deed restrictions.

Comment 56: The USEPA should clearly outline what work would be required to evaluate and remediate on-Site soils in the event that the property is used for residential purposes. This is a significant concern, since interest in using the Site for residential purposes has already been expressed by at least one developer.

Response: Please also refer to comment no. 54 above. The HHRA indicated that the soils on the Outlying Parcels will fall within or below acceptable EPA values for residential use. However, with regard to the LAI Facility, while a significant number of soils samples were taken during the RI it is possible that there may be limited areas of the site (e.g., under buildings) where residual contamination may exist. Therefore, EPA believes that it would be prudent to restrict future use of the property to commercial/industrial through the use of an environmental easement and/or restrictive covenant.

Comment 57 : What is the groundwater treatment methodology that was assumed (air stripping or liquid-phase granular activated carbon) to determine the estimated project costs? If air stripping is used, will the off-gas be treated with carbon or cat-ox?

Response: As indicated in the feasibility study, the groundwater treatment system for Alternative GW-3, Option 3 consists of the following major components: 1) influent flow equalization; 2) green sand or bag filtration; 3) air stripping; 4) vapor phase carbon adsorption (if needed); and 5) permanganate treatment for vinyl chloride (if needed). Initial air stripper performance simulations indicate that VOCs would be removed to non-detectable levels from groundwater before discharge. The need for off gas treatment will be evaluated during the remedial design. Estimated project costs are presented in Appendix C of the feasibility study.

Comment 58: The Village is currently applying for a grant to restore Old Mill Creek. How will the EPA's remedial efforts affect restoration work in the creek? What will be the risk to workers performing work in the creek? Based upon the creek sediment data, how will the dredged sediments be classified for disposal?

Response: A number of design parameters including the placement and configuration of extraction wells, pumping rates, effluent discharge options, and other design parameters will be evaluated during the RD using a 3-D groundwater model. As discussed in the FS, one of the groundwater treatment system discharge options being considered is discharge to Old Mill Pond/Old Mill Creek. The groundwater treatment system effluent will meet NYSDEC discharge permit requirements.

Since the scope and schedule of the Village's restoration activities are unknown, it is difficult to determine whether the groundwater remediation activities will affect any restoration work in Old Mill Creek. It is anticipated that if the Village undertakes restoration activities, coordination between EPA and the Village and their contractor(s) will be necessary to minimize any potential conflicts between the remedial action and the restoration effort.

As indicated in the FS, the selected remedy does not include removal and disposal of creek sediments (Refer to comment no. 8 from the Village of Port Jefferson). Therefore, risks to workers performing creek restoration activities and classification of dredged sediments were not evaluated as part of the selected remedy. Existing sample results can be made available to the Village for independent evaluation of risk to workers. It is the responsibility of the contractor performing the restoration activities to make the appropriate inquiries and develop appropriate health and safety procedures and practices to protect workers.

Comment 59: Several commentors indicated that EPA should do whatever it can to shorten the time to begin the remedial action as well as its duration.

Response: The comment is acknowledged. EPA will take the necessary actions to implement the proposed remedy in a timely manner.

Comment 60: The designation of the Outlying Parcels as part of the LAI Site is improper, since there is no soil or groundwater contamination on the Outlying Parcels. Regulatory standards have not been exceeded in soil samples taken from the Outlying Parcels and only indicated the presence of metals, which have been documented to be naturally occurring and not related to prior operations at the LAI Site. EPA is not proposing to undertake any response action on the Outlying Parcels, and there is no support in the RI and PRAP for a conclusion that a release of hazardous substances occurred on them. Moreover, there is also no legal basis to support inclusion of the Outlying Parcels in the definition of the LAI Site, since they were never used or operated as part of the LAI Facility, a different entity then the Outlying Parcels. Courts that have looked at the issue of dividing a facility have almost uniformly looked at the history of the parcels to determine whether a noncontaminated property should be included in the definition of a facility See United States v. Township of Brighton, 153 F. 3d 307,313 (6th Cir. 1998) (a facility should be defined at least in part by the bounds of the contamination). Based on the above, we respectfully request that EPA redefine the Site to exclude the Outlying Parcels or de-list the Outlying Parcel.

Similarly, any prospective purchaser of the Outlying Parcels is impacted by the EPA lien placed on the Outlying Parcels, which makes them less marketable, if at all. Section 107(1), 42 U.S.C. § 9607 (1) provides that a lien in favor of the United States arises on property that is "subject to or affected by a removal or remedial action". The plain facts are that the Outlying Parcels are not subject to any remedial or removal action. For many of the same reasons stated above, the lien was improperly placed on the Outlying Parcels and we request that it be removed with respect to the Outlying Parcels.

EPA Response: a) Inclusion of the Outlying Parcels within the LAI Site: Section 105(a) (8) (B) of CERCLA, as amended, requires that the statutory criteria provided by the Hazard Ranking System (HRS) be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. Sites are listed upon satisfactory completion of screening, public solicitation of comments about the proposed

site, and after all comments have been addressed. This list, which is Appendix B of the National Contingency Plan, is the National Priorities List, or the NPL.

When EPA first proposed the LAI Site for listing on the NPL in 2000, it was based on known releases of hazardous substances at the LAI facility. At that time, the public was duly notified pursuant to EPA regulations and the public was advised of its right to submit comments within sixty (60) days of the publication of the notice. No comments were received regarding EPA's proposal of the Site for listing on the NPL, and the listing was finalized in March 2003. The RI/FS was then commenced to determine the areal extent of these releases that led to the NPL listing. At the time that EPA was determining the scope of the RI, EPA examined the history of the Outlying Parcels, which included the following: (1) allegations from nearby residents of dumping of wastes and the burying of drums on the Outlying Parcels; (2) historical aerial photographs which showed roads leading off the LAI Property to the Outlying Parcels as well as disturbed ground on the Outlying Parcels; (3) these same historical aerial photographs which showed that one of the Outlying Parcels had a large sand and gravel pit containing fill from unknown locations and another parcel, adjacent to the LAI Property, which housed old chicken coops formerly operated by a previous owner of the LAI; and (4) a title search which revealed that, dating back at least 60 years, both the LAI Property and the Outlying Parcels had been under common control, in that the Outlying Parcels had been owned by either an individual or corporate entity related to Gerald Cohen, the president and chief executive officer of LAI. EPA thus determined that it was necessary to investigate the Outlying Parcels as part of the RI/FS conducted at the Site. Soil samples taken during the RI revealed elevated levels of metals, including arsenic, lead and titanium in the soil of the Outlying Parcels.

b) EPA's Lien on the LAI Site, including the Outlying Parcels: Under Section 107(1) of CERCLA, 42 U.S.C. § 9607(1), a lien in favor of the United States arises on real property and rights to such property upon the latter of EPA incurring response costs at a facility and upon sending notice of potential liability to the owner of such facility. The CERCLA lien secures the costs and damages for which the property owner may be liable to the United States under CERCLA. The priority of the CERCLA lien as against other holders of "security interests" (as defined in CERCLA), future "purchasers" (also as defined), and judgment lien creditors is determined by the timing of when such interests arose as compared to the timing of the filing of a notice by EPA of the CERCLA lien in the property records in accordance with state law. The CERCLA lien continues against the affected property until the CERCLA liability is satisfied or the statute of limitations has expired. By policy, EPA affords a property owner an opportunity to a hearing on the appropriateness of a particular. lien. A hearing was held concerning the LAI liens. Following that hearing, the Regional Judicial Officer of EPA Region 2 determined that EPA had a sufficient basis to proceed with the LAI lien in that the lien met the statutory bases and the Regional Judicial Officer issued a written opinion. A copy of that opinion will be provided to any member of the public upon request to EPA Region 2.

Comment 61: No VOCs were identified in any on-site soil at the LAI Site (including the outlying parcels). PRAP at 3. Therefore, there does not appear to be a source of VOCs on the LAI Site. This raises the question as to how the groundwater plume can be attributed to the LAI Site without the identification of an on-Site source. More importantly, it raises a question of whether further investigation should be undertaken to determine the source of the VOCs before implementation of any remedy.

Response: EPA conducted a thorough groundwater investigation that included background well samples and other upgradient groundwater samples. None of these samples indicate an upgradient

source. The RI meets the requirements of the NCP and has defined the nature and extent of contamination in sufficient detail to develop remedial alternatives and select a remedy. EPA does not expect that any further RI activities will required at the LAI Site.

A summary of the points relevant to the comment is provided below. The RI report includes all of the data.

- There are known sources of TCE on the LAI Facility. Historical information from Suffolk County Department of Health Services (SCDHS) documented TCE spills on the LAI Facility, at a location just upgradient of MPW-02, the most contaminated well, and near MPW-07, which also had high levels of TCE contamination.

- Groundwater samples were collected from multiple locations including background sample locations MPW-01 and MW-01, and other upgradient locations within the LAI Facility including MPW-07A, SBD-03, SBD-13, and SBD-14. Samples from these upgradient locations did not show any significant concentrations of TCE. (See RI Figures 4-17 and 4-17A) Samples collected at multiple depths within the aquifer (MPW-01 and MPW-07A, do not show any significant concentrations of TCE.

- TCE was not detected in groundwater screening samples collected during the drilling of background well MPW-01. Screening samples from MPW-07A, located upgradient of the most highly contaminated wells (MPW-02 and MPW-07), also had no significant detections of TCE. (See RI Figure 4-15).

- The highest TCE concentrations were detected in the shallowest sample intervals of MPW-02 and MPW-07, located directly below the LAI Facility property. TCE was detected at deeper levels in downgradient wells. This contaminant distribution is characteristic of TCE plumes, where the highest concentrations are found at the groundwater surface near the source and at deeper levels downgradient. This is also consistent with the vertical groundwater gradient observed in monitoring wells which show a downward hydraulic gradient near the LAI Facility (refer to RI Figures (3-11 and 3-11A).

The information cited above supports that LAI is the source of the TCE groundwater contamination identified at the LAI Site.

Comment 62: Evidence of contributor(s) to the groundwater plume is identified in the RI. This evidence includes the occurrence of MTBE in monitoring well MPW-1. Additionally, pesticides and Semi Volatile Organic Compounds (SVOCs) have been detected in groundwater beneath the LAI Site and down gradient of the LAI Facility at concentrations exceeding regulatory standards. These pesticides and SVOCs have not been attributed to the LAI Facility. Therefore, it appears that all potential upgradient contributor(s) have not been properly identified, investigated, and characterized. An additional upgradient well would further define the groundwater flow direction at and upgradient of the LAI Facility. Furthermore, the presence of pesticides and SVOCs could hinder the proposed remedial option due to the chemical makeup of these chemicals as compared with the VOCs.

Response: (see also response to comment 13 above) MTBE, a fuel oxygenate added to gasoline, is widely distributed in the environment. It marginally exceeded ' groundwater quality standards in two samples from MPW-01, the background well, and is not related to the LAI Site. A few pesticides

and SVOCs were detected at concentrations exceeding regulatory levels in wells on the LAI Facility (Dieldrin at MPW-02 and MPW-07) and in downgradient monitoring wells. Overall, these compounds were detected sporadically or not at all in many of the downgradient monitoring wells. The RI results do not show a plume consisting of these compounds, in contrast to the TCE plume found below and downgradient of the LAI Facility. The RI results (See response to previous comment) are sufficient to develop and evaluate remedial alternatives in the FS and select a remedy for the Site.

The presence of pesticides and SVOCs does not exclude the use of the selected remedy at the LAI Site. All air and water discharged from the treatment systems will comply with applicable regulatory discharge limits.

Comment 63 : The RI and PRAP state that fluctuations in VOC levels in groundwater between the 2 rounds of data, especially beneath LAI, and the areal extent of the plume (at monitoring wells MPW-5 and MPW-6) suggest that the extent of the plume has not been fully defined. Therefore, selected remedial alternative(s) may not be appropriate.

Response: (see also response to Comments 45 and 46 above) The fluctuations referred to in the comment occurred only at two locations (MPW09 and MPW-02). Although there were some differences in TCE concentrations between the two sampling rounds, the TCE concentrations in both rounds exceeded groundwater quality standards. The RI defined the groundwater plume sufficiently for EPA to develop and evaluate remedial alternatives and select an appropriate remedy for the Site. The extent of contamination at the limited monitoring locations identified in the comment will be refined during the pre-design investigation.

Comment 64: Under the NCP, EPA is required to evaluate each proposed remedy identified in the FS against a number of enumerated factors. Some of those factors include short term and long term effectiveness and cost. In this case, EPA simply selected the most expensive remedy without considering the costs or long and short-term effectiveness. For the reasons set forth below, Alternative GW-3, Option 1 will provide substantially the same level of protectiveness and in the substantially the same time period for significantly less costs. We therefore recommend that EPA select this alternative for its final remedy.

Response: In accordance to the NCP and appropriate guidance,, the FS assessed remedial alternatives with respect to each of nine criteria (as listed in Section 4.1 of the FS. With respect to long-term effectiveness and permanence, Alternative GW3 Option 1 would be effective and permanent, since the contaminants would be removed from groundwater and treated ex-situ. GW3 Option 3 would curtail continuous off-site migration of contaminants via hydraulic containment, in addition to remediating contaminants in-situ. The containment and in-situ destruction of contaminants at the LAI Facility would provide a greater degree of certainty that' the remedy will ultimately be successful (i.e., be more protective), as only those contaminants which have already migrated past the capture zone at the LAI Facility would be able to migrate toward the downgradient treatment system near Old Mill Pond. This containment effectively achieves one of the RAOs established for the Site groundwater: Minimize the potential for off-Site migration of groundwater with VOC concentrations greater than PRGs.

There are no major differences to be noted between Alternative 3 - Option 1 and Alternative 3 - Option 3 with respect to short term inconveniences to nearby residences. Appropriate equipment would be used to protect the community and workers during remedial actions and to measure any

potential environmental impacts. The time until remedial action installation is completed is similar among these remedies.

EPA's RI/FS guidance document recommends that O&M costs be determined for a maximum of 30 years. As such, a duration of 30 years was used to develop present value costs for comparison purposes. However, the projected operational durations of Option 1 and Option 3 presented under Alternative GW3 are not equal. While the continued long-term operation of a lone groundwater extraction and treatment system at Old Mill Pond (Alternative GW3 Option 1) could eventually treat all contamination migrating from the Site, the operational duration is greater than the operational duration of Alternative GW3 Option 3 by the amount of time required for TCE to no longer be released from the LAI Facility. The additional extraction and treatment of contaminants at the location of their release (Alternative GW3 Option 3) effectively reduces the operational duration of the Old Mill Pond treatment system to the time required for the contaminants to migrate to the downgradient treatment system. Reducing the total duration represents an effort to "restore groundwater to levels which meet PRGs within a reasonable time frame" - another RAO established for site groundwater. Again, Alternative GW3 Option 3 is also more protective than Option 1 based on greater certainty, and elimination of migration.

Comment 65: Two separate "slugs" represent the extent of the groundwater plume. Therefore, the operation of a pump and treat system will remove each slug and then have nothing else to recover. This is especially true for the system at the Old Mill Pond (which has been designed for the maximum operation duration of 30 years) , where the apparent size of the slug is smaller compared to the slug beneath the LAI Facility. Additionally, with vapor intrusion studies ongoing and all residents connected to public water, the ingestion and inhalation pathways of exposure to groundwater have been eliminated. Furthermore, documented flow models of the recovery well at the pond (pumping at 150 gallons per minute) show that the system would capture the entire plume. As such, one pump and treat system at the Pond (Alternative GW-3/Option 1) should be sufficient to capture the entire plume.

Response: While the FS noted that high concentrations near MPW-09 could be the result of a significant on site release that occurred in the past and migrated as a slug, a continuous plume with monitoring wells located on the edges of the plume and an area of higher contamination present between the wells was also noted to be a plausible scenario. Adding to the complexity is the fact that VOC concentrations generally decrease as the plume moves north and increase again near Old Mill Pond and Port Jefferson Harbor - which could be the result of the fact that the plume moves toward the surface under a significant upward hydrologic gradient in this area, and not be evidence of two distinct slugs. With respect to 'effectiveness', the notion that the two distinct slugs have been delineated and contaminant: concentrations at the LAI Facility represent a larger 'slug' support the extraction of groundwater from and treatment at the facility (Alternative GW3 Option 3).

ENVIRONMENTAL PROTECTION AGENCY

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PROPOSED PLAN FOR THE

LAWRENCE AVIATION INDUSTRIES

SUPERFUND SITE,

PORT JEFFERSON, NEW YORK

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Port Jefferson High School
350 Old Post Road
Port Jefferson, New York

Tuesday, August 1, 2006

A P P E A R A N C E S :

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Brendan McDonald, Project Engineer

Sal Badalamenti, Project Manager

Joseph Mayo, Remedial Investigation Task Mgr.

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MS. ECHOLS: Good evening, we're ready to begin.

I want to thank everybody for coming out tonight. I know you could have been somewhere else but they probably have a lot of cool air in here.

I would like to begin and introduce myself. I'm Cecilia Echols, I am the community involvement coordinator for the Lawrence Aviation Industries Superfund Site in Port Jefferson.

The purpose of our meeting is to discuss the proposed plan of clean up for the soils and groundwater that has been contaminated at that site. I hope everyone has had an opportunity to sign in as well as take the handouts that were on the table in the back because we will be going through them tonight.

I want to go over our agenda and I hope everyone is able to pick

one up. As I said, I'm Cecilia Echols. Next to me is Angela Carpenter, she's the Chief of the Eastern New York Remediation Section. She will discuss the Superfund program and the Lawrence Aviation site. She's also the EPA.

Next to her -- I'm sorry, number three is Demetrios Klerides and he's the project manager for CDM Federal. Then we'll have Mike Sivak, he's a risk assessor, he's also with EPA. He will discuss the human health and screening level, ecological risk assessments. Then we'll have Brenden McDonald, he's a project engineer, also a CDM Federal. He will discuss the feasibility study, then we'll open up to Sal Badalamenti, he's the project manager for EPA. He will discuss the proposed remedy as well as the vapor intrusion study.

Then we will open up for questions and answers. Other EPA

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representatives here are Elizabeth Leilani Davis, she is our regional counsel and we have Joseph Mayo, he's the remedial investigation task manager with CDM.

I just want to talk a little bit about community relations, that is a program to help communities get involved in the decision making process when it comes to cleaning up the Superfund site in your community. We don't come up with a plan by ourselves, we look for public input and we hope that we get a lot of feedback from you all tonight about how you see the site should be cleaned up and how you are interested in seeing the site to be cleaned up.

We have three. information repositories; one is at the Port Jefferson Public Library, the other one is at Comsewogue Library in Port Jefferson Station, and then we have the third one at the EPA office in

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Manhattan. Those three libraries have all of the documents related to this site. You can go there to visit at their office hours.

Just wanted to let you know, in addition, we mailed out nearly 700 proposed plans to the community. That's a lot of people and I hope that everyone has signed in tonight so we can -- you can also be included on the mailing list so you can receive future mailings from our office.

The public comment period began for this project on July 20 and it ends on August 19. There was a public notice placed in Newsday on August 28 -- I'm sorry, July 28.

As part of the record of decision, we will be putting together a responsiveness summary. We also have a stenographer here. We would appreciate that when you are asking a question, you please announce your name clearly so she can annotate that

in the transcript.

Just really one ground rule:

We would like for all questions to be asked after the last presentation.

That's pretty much it for me and now we'll have Angela speak.

MS. CARPENTER: Good evening and thank you again for coming out. I know it's pretty toasty out there so we appreciate you coming out. I am going to briefly go over the Superfund process with you so you know where we are in this project and where we have left to go.

As many of you know, the site actually got oh the National Priorities List, that's the Federal Superfund list. We'll go over a little bit about the history of the site in the presentation on the remedial investigation.

What we have been conducting and what you have seen around town is the remedial investigation portion of

the process; that's where we take the actual samples, collect data, we compile that into a remedial investigation report -- that's available at the libraries -- and that details our findings in terms of what was in the groundwater, what was in the soil, what was in. the sediments.

Our next step is then to compile all of the information and try to figure out how do we address whatever problems we come up with; that's done through the feasibility study that's also available at the library.

In the feasibility study are more detailed descriptions of the alternatives that you have in the preferred plan, the proposed plan, that gives a lot more details, so if you are interested in the details that led up to the alternative development, you can find that in the feasibility study.

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Once the feasibility study is completed, EPA, in conjunction with the state and the Department of Health, and the local Department of Health look at the alternatives and try to come up with what is the best alternative for this site. We put that out in the proposed plan for your review and comment.

This does not represent the ultimate remedy selection. We will do that after we get your feedback. That's the point where we're at tonight. We are here for the public meeting so we can get some feedback from you.

We also welcome written comments, e-mail and fax. All of that information is in the proposed plan.

The next step as Cecilia mentioned is the issuance of the record of decision. That's where EPA details what the remedy is and how we think that we're going to undertake.

implementing that remedy. The other part in that record of decision is the response to the comments, so that's where we will actually go on record and answer any comments that we will receive.

Once that's done, you think we're home free. We're not. There is a design that has to be undertaken. These remedies are kind of complicated and we can't grab something off the shelf and put it in place, so we will go through the remedial design process. It's only once that design is completed -- and there are many things we can do while we're doing the design -- we will have to look at that, that we then start to implement the remedial action and you will see the -- whatever action is chosen start to be implemented in the community.

So there is quite a bit of process left. There are some early actions we may be able to undertake,

that will be under evaluation, but, again, the first step is to select the actual remedy and that's what we're here to discuss tonight.

So with that, I will turn you over to the people who are going to give you a lot more detail on what we found and what we're proposing to do. I am going to turn that over to Demetrios.

MR. KLERIDES: My name is Demetrios Klerides. I will be presenting to you tonight the work that has been done for the remedial investigation at this site. I will be presenting to you tonight the work that has been done during the remedial investigation at this site and also the results, you know, that we've reached after this investigation.

Before we start our official presentation here, I need to provide you with a couple of geographical definitions so that everybody

understands when we refer to a specific location, you understand what we mean. These definitions is will be used not only by me, but other people during this presentation and, also, they are used throughout our reports.

On our screen right here, we have an area photograph of the Port Jefferson area and the Port Jefferson Station, part of it. Here is the LAI facility and the Port Jefferson Harbor. When we refer to the site, we mean the entire area stretching from the LAI facility all the way to Port Jefferson Harbor where we have contaminated groundwater.

Now, closer to the LAI property, the property that is within the black lines, we refer to that as the LAI Industrial Facility or the "facility." The area that is within the red lines, we refer to them as the outlying parcels and these are the wooded areas adjacent to the

industrial facility.

The area within the blue lines, we refer to it as the New York State DOT right of way and, as you can see, that right of way crosses also the industrial facility and the outlying parcels.

Now, let's go through some of the highlights of the history at the site.

The first highlight came in 1980; that was as a result of complaints that the Suffolk County Department of Health received from residents in the area, so they decide to document the conditions at the site by taking a helicopter and riding over the site and this is what they saw. This is the southeast corner of the facilities.

This is another picture of the same area. This is a picture looking at the distant part of the facility looking south and this is the western

part of the facility and here you can see some lagoons where water was allowed to discharge into the groundwater.

Now, following this photographic presentation, Suffolk County Department of Health documented these applications in an affidavit in 1981 and in 1987. The EPA emergency response connected residents that their wells were contaminated to the public water supply system.

Following that, in 1997, EPA - - the New York State DEC connected another residential area to the public water supply system and also they began a remedial investigation, but that remedial investigation was limited due to access issues and it only focused, on areas outside of the LAI property and in the New York State DOT right of way.

In 2000, the limited RI was finished and, at that point, EPA

placed the site on the NPL list. The next major milestone that we have in the history of the site is 2003 and that's where we start this investigation that we're here to present. you with the results tonight.

Now, in 2003, when we came out, conditions were different at the site. This is the southeast corner of the facility. You can still see some drums in there and here. This is the western part, southwestern part, of the facility. This is where the lagoons used to be and, again, those drums that I pointed out before right there.

Now, as part of this RI/FS, the major steps of the RI/FS where the EPA removed those drums, we performed field work to collect the information so that we can determine the nature and extent of the plume and also come up with alternatives on how to treat this problem. Also, we prepared a

human health risk assessment. We prepared a screening level ecological risk assessment and based on the human health risk assessment and the ecological risk assessment and the field work, we prepared our RI report and following that, the feasibility study and EPA compiled all of the information into the proposed plan that you guys have copies in your hands tonight.

Now, many of you never been to the site, so you don't know what it looks like at the site right now, so the next few photographs are intended to just explain or to show you what the site looks like right now, okay. This is part of the facility, okay, the eastern part of the facility. This is a picture looking west of the area of the southeast corner where the drums used to be in the past.

This is another picture of the same area looking south. This is one

of the industrial buildings around the site.

Now, let's go back to our remedial investigation. The objectives of the remedial investigation were to define the nature and extent of the contamination. What that does mean? Find out where the contamination is and where it's going, how to take care of it.

As part of the investigation, we looked into groundwater, we looked into surface water and we looked into soils.

As you can see from the numbers on the screen, this was a significant effort. We collected 277 groundwater samples, 392 soil samples, we collected 27 S. W. samples and 25 sediment samples.

Now, let's start with the groundwater investigation. Many of you saw our equipment downtown in the

fall of 2003 towards Thanksgiving of 2003 and just before Christmas, they were in the parking lots and around Main Street collecting samples. That part of the work gave us an initial indication as to where we should be looking, where we should be focusing.

Following that investigation, we performed stratigraphic borings that allowed us to see what kind of soils and what particular soils are in this area. Also, as part of the investigation, we sampled the old wells that were installed over the years by Suffolk County Department of Health and New York State DEC.

We sampled two residential wells that we know that are still in the area and I should mention to you right now that neither one of those residents are using this for drinking purposes, only for gardening.

We also sampled the public water supply wells that we found in

the area. We installed multi-port monitoring wells and at some of these wells, we did hydraulic testing so we can collect information to use later on during the feasibility study and design.

Now, I mentioned before multi-port wells, what these wells are. They are wells that they have four and up to five ports at the same location and it allows us to collect samples from different intervals in the groundwater so that way we know at that location what's going on; we know how the water is moving, is it moving downwards, upwards, is it moving horizontal. We also know where the contamination is at that location; is it shallow, deep, immediate. We know what the concentrations are; are they high, where are they high parts of the concentrations, the high parts of the plume and the low parts of the plume.

Now, based on our

investigation, we now know that the facility lays over what's called the upper glacial aquifer. We also know that at the LAI facility, the separation between the ground surface, the groundwater table, is about 180 feet.

That separation -- as you move towards the harbor, it drops and at the harbor it pretty much disappears and, also, we know that the groundwater movement over the -- under the LAI facility moves north and slightly west and just about below the railroad tracks it starts moving northward towards the Port Jefferson Harbor.

Now, the results of our groundwater investigation, we know that the public water supply wells and the residential wells are not impacted by site contaminants.

We know that the older existing monitoring wells that were installed

previously by the Department of Health and New York State DEC, they were installed at the groundwater table or just slightly below the groundwater table and those wells did not show any contamination above our drinking water standards and the new wells installed showed a contamination plume that starts from the southwest corner of the facility and it moves northward towards the Port Jefferson Harbor.

Also -- part of the investigation was surface water. Many of you know this surface water is Old Mill Pond, Old Mill Creek and the harbor. Before getting into this, the work that was done, I need to explain to you about a condition that. exists there and it was documented long before we came out here to do this investigation, it was documented by the U.S.G.S. and, basically, what the condition we have is about the groundwater movement.

In the northeastern part of

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Long Island, as the groundwater approaches the shoreline, it doesn't longer move horizontally as some would expect, it starts moving upwards towards the surface. The Old Mill Pond is a result of that upward movement so it exists there because of the groundwater moving to the surface and discharging it at that lower location.

Now, the picture to our right, right there shows the locations where we collected samples as part of the investigation. We know that the Old Mill Pond and the Old Mill Creek are contaminated with site related contaminants. We also know because of the upward movement that you have, that that contamination is related to groundwater and that the contaminants from the Old Mill Pond and Old Mill Creek are moving towards the harbor, but I should point out to you that these two samples that we have right

here and collected in the harbor do not show any contamination that is exceeding the New York State standards.

Now, using all of this information that we collected, we went on to develop what we called our conceptual site model. What does this model do is it gives us an idea as to how the contamination is moving and how it's entering the soils, how it's moving through the soils, how it's reaching the groundwater and where it's going.

In developing this model, we looked at our background well. Our background well is behind the facility; that well is clean, so that means that the contamination starts somewhere around the facility and we believe that it starts around the area of monitor well number seven and monitor well number two because those two wells show contamination.

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Now, the contamination enters the site soils from spills, releases and poor housekeeping practices that took place at the facilities over the years. The metals and the PCB's adhere themselves to the surface soils and sub surface soils and they stay there.

On the other hand, the VOC's or the solvents, they move downward with gravity and with precipitation. As rainfall infiltrates through the soil on the way down to the groundwater, it carries the contamination with it.

Once the contamination reaches the groundwater, it starts moving with the direction of the groundwater and, as I explained to you before, based on the results that we have, it shows that it moves northwest and then north.

Once it reaches -- the contamination reaches the general area of the Old Mill Pond and Old Mill

Creek, it gets -- starts getting pushed upward and surface into the Old Mill Pond and then there flows through the Old Mill Creek.

The ultimate findings of our investigation are the VOC plume extends from the southwest part of the facility and it's moving toward the Port Jefferson Harbor. The contaminated groundwater is discharging into the Old Mill Pond and creek and the surface water and sediments in those water bodies are contaminated with site related contaminants.

Thank you, and now Mike Sivak will talk to you about the human assessment and ecological assessment.

MR. SIVAK: I'm Michael Sivak, the EPA risk assessor and I am here to explain to you all the risk assessments that have been performed here at the Lawrence Industries Superfund site.

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We are going to start with the human health risk assessment. Basically, we are conducting a human health risk assessment, we are trying to answer questions and those questions are whatever the risks now as they currently exist that people are exposed and what are the risks in the future if no clean up is taken to people who might be exposed to that.

As part of trying to answer those two questions, we need to assume what are the potential exposure pathways and receptor scenarios and we are going to get into that right now.

Potential exposure pathways is how you would contact potential contaminated areas, so we would look at things like incidental ingestion of soils or dermal contact with soils or inhalation of dust. Again, you can go through the whole list here for groundwater, ingestion of groundwater, even though nobody is currently

drinking the groundwater right now it is classified by the state as part of the water supply, so in the future, we do look at that, what happens in the future if someone would be drinking the water because the state says it will -- should be cleaned up to drinking water standards and we look at the other groundwater pathways that are up there.

In indoor air, we did come out and do some testing for the exposure pathway of inhalation of VOC's. We talked about having this group of chemicals in the groundwater and we have been out here before talking to you about how that phenomenon occurs, how these contaminants migrate up from the groundwater and possibly collect underneath the house and other things and percolate inside.

We look at exposure to freshwater sediments and surface water and salt water sediments in surface

waters. Receptor scenarios that we looked at included in the populations that are involved in those scenarios included current future workers, specifically adults to the LAI facility. We know the site is divided into two main parts; we have the LAI facility and the outlying parcels. We looked at the future residents for on-site, as well as the outlying parcels.

We did include the on-site resident to the LAI facility just as a comparison measure, so we looked at scenarios that would involve people walking along as well as bikes, of course, that would access that area and then we also looked at the future construction worker because we know it's pretty likely there are going to be some construction activities that would occur.

Again, I kind of talked about this as well already. We looked at

the future resident to the outlying parcels and then, again, access to the right of way, the off site receptor; these are people that aren't on either the LAI facility and wouldn't have exposure to the contamination or outlying parcels, so this would include those folks that may access drinking water in the future or have possible exposure to VOC's from the groundwater as well as recreational in the ponds and harbor.

What were the findings that we came up with? Basically, we identified that there were risks that exceeded acceptable levels for on-site residents due to use of impacted groundwater, that would be future on-site residents drinking water that would be used as part of the water supply.

We identified that there were future risks to outlying residents' parcels due to contamination in the

groundwater that would be used in the future in the drinking water that would be of concern to us, but we found that there is the potential for possible impacts from vapor intrusion to current on-site users.

We have done some initial sampling to try to fill in that gap a little bit. We've released some results back to the residents and have spoken to you as well about that, but the findings were this particular current and future off site residents due to vapor intrusion.

In the risk assessment -- it's important that everybody understand this -- in the risk assessment, we did a modeling exercise, we didn't actually include the data that we collected when we come out and collect samples from underneath people's homes, so this is just sort of a modeling exercise that led us to that next step that, yes, we did estimate a

potential for this.

Now, for the ecological risk assessment, it's a little bit different the approach than the human health risk assessment, but you have some various similar themes going on; you look for exposure pathways.

We looked for existing receptors. We include both plants and animals in our ecological assessments and then we start the risk assessment. This is a screening level which includes the use of very conservative screening levels where we compare maximum detected concentrations from our remedial investigation. All of the samples that Demitrios has collected as part of what we've identified were then compared to screening levels, very, very conservative screening levels, that were selected because this is a very preliminary step in the screening process.

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For those chemicals where we found they exceeded these very conservative screening levels, we then go to the next step of the risk assessment and that's what happened here. That step involves refining this list of chemicals of potential concern incorporating a site's specific information, meaning what animals are we actually seeing at this site or what plants are we actually seeing at this site, what, specifically, forms of contaminants are we seeing at this site.

So the results of the risk assessment identified that there was some potential risks to receptors at Old Mill Creek and Pond due to VOC' s in the groundwater as well as the potential risk to ecological receptors in some various PCB contaminated surface soils at the LAI facility and I now turn it over to Brenden McDonald to discuss the next step in the

process which is the feasibility study.

MR. McDONALD: I'm Brenden McDonald.

The feasibility study is the step in the process where on a conceptual basis -- we're going to think about what's possible here in terms of cleaning up the site. In the RI (what Demitrios explained to you,) we talked about what the contaminants are at the site and how they're distributed and Michael spoke about potential risks and exposure pathways, we have that, we will consider what technologies are appropriate to achieve our clean up goals at the site.

We'll talk about the clean up goals. These numbers you might see up on the screen are established to be protective of human health and the environment. The soil value is based on ecological risk; that's just what

the soil -- like Michael said -- they're very small areas at the LAI facility. Groundwater values are based on Federal and state maximum contaminant levels for drinking water. The surface water goals are based on New York State surface water quality standards.

Now we are going to look at potentially appropriate technologies here and try to build remedial alternatives. Some of the technologies might amount to a stand alone alternative, other ones may need to be pieced together to develop alternatives.

Once we have all of our alternatives together, we will evaluate them with respect to criteria established under Superfund. We have two potential alternatives for soil as a result of our feasibility study. The first one is no action, that is always retained

as an alternative as part of the Superfund process, basically, it doesn't meet our remedial objectives or goals, it just leaves conditions as they are right now, it doesn't prevent potential exposure and such.

The next alternative is excavation, off site disposal and backfill of the existing soils. The two key components are a pre-design investigation, the point of which the contaminants at the site will be refined as well as the distribution contaminants, and following the excavation, samples will be collected to verify that clean up goals have been achieved at the site.

In the feasibility study, we developed nine groundwater alternatives; you'll see five here. Groundwater three and five have three options apiece. I will describe all of them in limited detail. As you can see that they are pieced together by

certain technologies which allow me to mention that we look at containment technologies, treatment, removal technologies, and retain those, which are going to be potentially applicable to the containments and pathways associated with the site.

Groundwater one is no action: Conditions will stay the same, it provides a baseline against which the rest of the alternatives can be compared.

Groundwater two, institutional controls and engineering controls and long term monitoring. Long term monitoring amounts to the collection of groundwater samples and surface water samples, to track the potential migration of site contaminants. Institutional controls would prevent the use of groundwater as drinking water and the engineering controls might be something you all have seen fencing and signage to actually

prevent exposure to potential receptors.

Groundwater three, that has three options. Groundwater -- all of them will include the institutional controls, long term monitoring of groundwater and surface water. All of them actually include a pump and treat system at Old Mill Pond.

This is a system by which groundwater would be extracted from the subsurface and treated and the location of it at this point is in the site plume. It basically will intercept groundwater and it will eliminate the migration past Old Mill Pond and creek and it will also eliminate the infiltration of groundwater into the surface water bodies, Old Mill Pond and Old Mill Creek.

The second option here is very similar to option one, but a groundwater extraction and treatment

system is added at the LAI facility. This attacks the contaminant plume in the high concentration area. Since we're attacking higher concentrations here, it has the potential to reduce the volume of groundwater that's required to be treated.

Option one's duration is currently estimated to be 30 years or more. Option two -- I'm sorry -- is actually also. estimated to be 30 years. Option three includes the two systems, Old Mill Pond, also the LAI facility, and it also includes the enhancement via chemical oxidation. That's a process by which a mixture can be injected into the sub surface; it's a more aggressive approach to break down contaminants in place. By doing that it would' lower the mass of contaminants that would be required to be treated through groundwater extraction at the site and, also, potentially off site.

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Implementing chemical oxidation at the site would potentially cut back the duration of the alternative by ten years, so it's currently estimated to be 20 years.

Groundwater four is also chemical oxidation and it includes a pump and treat system down at Old Mill Pond cutting off the plume, stopping it from migrating past the pond, stopping groundwater from entering the pond, but this application of chemical oxidation would be without a pump and treat system; that is the difference here between G. W. 4 and three, it's maybe a more extensive application of the mixtures.

Groundwater five also has three options.

One thing I failed to say about these groundwater pump and treat scenarios is that there's a predesign investigation that will be performed associated with all options.

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Groundwater modeling will also be performed to provide us with a better handle of the state of groundwater contamination and, also, the behavior and movement of groundwater in the sub surface.

Groundwater five has three options; basically, they all involve biodegradation. The first option includes an injection of the different type of mixture; it would be delivery of nutrients to the sub surface which will, stimulate naturally occurring breakdown processes.

Option two is similar to option one and that would be two areas that would be -- which we will focus on and it actually will include a recirculation system or pump and treat system of the LAI facility extracting groundwater. Under this option it will be treated and additional nutrients could be added to the groundwater prior to the reinjection.

Option three involves the biodegradation at the facility. It's just another -- here we piece together the elements in a different way by degradation at the facility and the pump and treat system at Old Mill Pond. Again, all of these options include groundwater modeling and predesign investigation.

Here we end up with nine alternatives for ground water and two for soil and at this point here is where we evaluate them with respect to the criteria under Superfund.

At this point I will turn it over to Sal Badalamenti who will present the proposed remedy.

MR. BADALAMENTI: Based upon all of the remedies we have heard, EPA consultation with the New York State DEC and New York State DOH and local Suffolk County Health Department are recommending alternative S-2 as to the soils and alternative groundwater

three, option three, of the groundwater as the components of the preferred remedy.

Alternative S-2 involve excavation of the PCB soils on-site, alternatives as to the excavation of the PCB soils on-site in these two particular areas here, this one here and here, okay, the groundwater three, option three, which involves a groundwater pump and treatment system at the Old Mill Pond and at the LAI facility with chemical oxidation enhancement at the LAI facility.

In the background, you'll see this is typical of what a groundwater pump and treat system building might look like and these are other photographs here of what they might look like.

The injection of the in-situ chemical oxidation at the site would be in this area here and we've had an extraction well in this area and, as

you can see, that would affect the pumping influence of that extraction well.

This treatment system here would extract it and recharge it into a recharge basin in this area and it would be recycled and treated.

At Old Mill Pond, this is a graphic of the kind of influence of the extraction system which would be located in this area and the treatment system would be located along the creek or near the pond in that area.

The estimated cost of the proposed remedy for soils option S-2, which is the excavation off site disposal and backfill of the PCB soils is approximately 2000 cubic yards, soil, and about another 25 cubic yards from the catch basins is estimated to cost approximately $770,000.

The groundwater option three is estimated to cost 23 and almost a half million dollars and 30 years of

pumping, so the total cost of the remedy is about $24.2 million.

I want to go on to the vapor intrusion studies that we've performed in the past.

We gave vapor intrusion evaluations this past February for those of you who heard our public presentation on this matter in January, I would like to again review some of that with you.

The phenomenon of vapor intrusion has to do with organics that migrate from the subsurface to the indoor air and this is what happens: The groundwater is contaminated, there's evaporation of these contaminants and particularly in the winter time when you have the furnace going, it causes negative pressures in the house. and if there's cracks in the slabs of the buildings, it can draw these gases into the home. We like to do this testing in the winter time,

it's the worst case scenario where everything is buttoned up and that's why we were here last January and our next round will probably be in the next heating season as well.

At this time, we focused on buildings that are located over the groundwater contamination and where groundwater is within a hundred feet of the ground surface and that's the area within the green line that was previously presented.

This is the area we're concerned about. Again, this is how that green line overlies where we think the plume is and the green line is the area within a hundred feet of the ground surface. Next slide. The areas that we've already done some testing on are, of course, the high school right here. We've looked at areas on Carol, Oaks and Randall Streets in this area and we looked at Brooks and Beech areas here. We would

like to, in the future, test the area near Broadway and the homes in these areas that have not been tested yet. We would like to focus on those as well and there's some areas along Dark Hollow Road here that we missed and would like to cover as well.

Again, the past results for the high school has been distributed to parents by the school board and with regard to those results, EPA brought out the mobile analytical laboratory. We deployed that in February to conduct the preliminary and instantaneous the screening of indoor air quality inside almost every classroom in this building and office in the basement and first floor levels of the school and some of the residents got to observe this amazing equipment. There's only three or four of these pieces of equipment in the country.

It allows us to bring a long

hose in, as we did, and sample the air instantaneously outside after it went through the bus. We got the results on the computer screen, so it kind of gave us a focus on where we should look further and that was followed by our confirmatory sampling where we took the actual samples and sent them off to a laboratory of indoor air.

We took two samples right here in this auditorium; one in that corner . and one over there,, as well as locations below the school on sub slab locations. You know, this is the type of bus.

We tested results after school and it had indicated that the indoor air inside the school has not been impacted. All testing results also indicate that indoor air has not been impacted so, to date, EPA has not identified any building acquiring a mitigation to be installed.

All sampling results have been

supplied to the school and village officials, as well as the residents in the area. We do plan on continuing the testing we conducted in the near future and in the above areas. We'll have a sign up list at the rear table of any property owners within these areas that have not been tested and would like to be or you can all even call or e-mail me directly.

I'll also be reaching out to property owners not previously tested. It's likely the sampling parts for this effort will be installed this summer and fall and the sampling will be conducted in the next winter heating season. That would be about December through March.

So with that, I think we're going to open it up to questions and answers.

MS. ECHOLS: We are going to set up some microphones so we can actually hear you and the rest of the

audience. Just bear with us so we can get some microphones into the aisles and when you do come up, please kindly give your name for the stenographer and speak a little slowly so she can get it.

MR. CAREER: Good evening, my name is Don Garber. I'm representing the Civic Association for Setauket. Our Civic Association is in receipt of a recently issued Superfund proposed plan regarding the Lawrence Aviation site.

As you know, the site has been a concern to our association for many years. The remedies described as alternatives S2 and alternative G.W.3, option three, are necessary for the long term safety of our community and the environment. They are fully supported by our association.

The plan's benefits to our residents and the future generations certainly justify the costs related to

the clean up of this Superfund site. Also of interest to our Association is the Setauket Port Jefferson bike path which is targeted to occupy or to show in New York State the right of way. This is targeted to start construction in 2007 and while we realize that some of the remediation excavation is really right on that site, it is our hope that the remediation effort will not slow up the completion of the bike path more than it probably will, but, anyway, our association will submit more details and written comments to the appropriate EPADEC committee before the deadline. Thank you.

MR. FORBES: My name is Larry Forbes and we've been dealing with this site for about 30 years. 1 want to know what's going to happen with a ll of the stuff buried on the site. It only covered a small area. I've been threatened by

security guards and I tried to take pictures of things. You haven't even covered half the area of where the stuff is buried and there's an area right now that the state is allowing what the EPA. calls a reclamation center. They're running composted piles right on top of the plume and nobody said anything about that and I want to know what's going to happen with all of that.

MR. BADALAMENTI: Our remedial investigation was pretty extensive. I don't think we showed all of the soil sample areas and all the boring locations but we also did certain tests and we reviewed historical photographs and where disturbances and that sort of thing might be. We have not been able to identify --

MR. FORBES: You don't show the right of way along the side of property, that is a LIPA right of way. I myself have seen them burying things

for almost 20 years and I don't see you picking up that area at all. I mean, you have the pictures, drawings, or anything else.

MR. BADALAMENTI: Again, our remedial investigation was very thorough.

MR. FORBES: They've been burying things there for 20 years.

MR. BADALAMENTI: What do you mean?

MR. FORBES: 55-gallon drums, industrial machines, they come in there with a bulldozer, open up a pit about 20, 30 feet deep, run it over with the bulldozer three or four times and then come cover it. Those drums are in the ground.

MR. KLERIDES: Somewhere in October of 2003, we met with a few of the citizens of Port Jefferson Station, actually, one of them right now my memory fails their name, but they invited us to their house and

they invited some neighbors and they lived right up against that right of way.

These people lived there since the '70s. They were describing incidents through the '70s. They pointed out to us a location where they saw supposedly some discharge was taking place. We went out there, we looked at that. We did find a PCV pipe basically going out that way. We documented it, took a sample right in that area and the sample was basically a detailed sample taking a sample every 10 feet all the way down to the table and it did not show any contamination. It showed some stuff, but nothing really of significance that it should be addressed.

MR. FORBES: I can tell you I live right in the corner of that thing. I went through at night when we used to complain about it. They would fill the area with dust,

asbestos, whatever it was, We went through all of that and people who were involved -- 30 years ago no one lived there and I can tell you that three or four of the neighbors have already died from cancers that are – who knows what they are and we went through a rash of miscarriages and things in the '80s.

So I don't know what you guys have found or not, but I think you're a little late doing the testing because it's already happened and I myself have seen it. I couldn't get pictures of it because I can tell you the security guards chased me away with rifles.

MR. KLERIDES: If you can give me their names, please provide your name to Sal and EPA will look into that in the future.

MR. FORBES: What about this thing being allowed to run now? The EPA calls it a reclamation center?

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MR. BADALAMENTI: Are you referring to the chip --

MR. FORBES: Yes. What's going on with that?

MR. BADALAMENTI: It's a legitimate composting operation.

MR. FORBES: I know. They've been contacted by the councilmen about it. They've had issues with the groundwater and 30 feet piles of compost that sit out there and leach this stuff into the grounds.

MR. MAYO: Those are associated with composting.

MR. FORBES: That's only now.

MR. MAYO: We have wells in that vicinity of that facility and we are not seeing those kinds of chemicals in the groundwater or those kinds of residuals.

MR. FORBES: They just started last year. Are we going to wait 20 years for this to happen?

MR. FERNANDEZ: The compost I

have seen are ground up trees. There is no construction there. I go there to buy my nursery stuff. There is mulch which everybody uses in their backyard.

MR. FORBES: But it stinks.

MR. FERNANDEZ: It's a different story, I think you're off on that basis.

MR BADALAMENTI: This is a permitted facility by New York State and I'm sure there are inspection reports on what's going on there and we will take a look at that.

MS. ECHOLS: Who was just talking, sir?

MR. FERNANDEZ: Eugene Fernandez.

MS. ANCHOR: Sarah Anchor, Community Health and Environmental Coalition, we're based in Mount Sinai and we started with the breast cancer cluster issue in New York State.

I want to thank you for coming

here and trying to take care of this issue. $24.2 million or whatever the quote is a lot of money to invest in your time and efforts and so I'm familiar with what's involved in the remediation and it's a lot and it's a shame and 1970 is a long time for people to file a complaint for something to be done about it to straighten it out, but my question is this: I was away with the family and I picked up a newspaper of USA Today and they had a report on Friday and, basically, it caught my eye because it's about TCE and the National Academy of Sciences on Friday basically had said that the TCE is more of an issue than what we thought it was.

The question is have you considered the idea to raise your standards? I know the EPA proposed in 1996 to 1999 cancer guidelines, it's characterized as highly likely to

produce cancer in humans, so where are we with the standards; that's the first question?

MS. CARPENTER: That's a national issue, but we will try to give you what we know.

MR. SIVAK: I will actually answer this question. As far as setting those standards in groundwater all systems from the issue of the toxicity of the chemical and that was what was a concern in that report that you cite that was on USA Today and pretty much every newspaper in the country.

The toxicity of TCE has been studied for a very long time and it's a very controversial topic how it's very complex, how it behaves in the body and how it's metabolized in the body and it's very complex, and because of that and because it is such an important chemical, it is found in lots of sites. It's used regularly in

industries right now.

We need to be pretty certain of what's happening with it before we start to regulate it and before we change the existing standards, so, like I said, the study of the toxicity of it has been under review for a very, very long time now.

What happened was EPA was in the process of reviewing the toxicity of TCE elements and came out with a draft assessment in the early 2000' s and it was sent to these agencies for review of it. They actually then looked into case assessments and said there are some things that need to be done with it, you need to go back and look at additional work, but you do need to kind of expedite this and you need to put a lot of resources in that and the agency has certainly committed to devoting a lot of resources into evaluating the toxicity of TCE.

That means the evaluation of

the standards that are out there, the drinking water standards, groundwater standards, things like that, right now they are set at a very, very high detection levels using analytical methods that are out there, so there is a high level of confidence, both at the state level, as well as the Federal level, that the existing standards are protective.

MS. ANCHOR: Again, this report said that the standards actually were not -- needed to be raised as far as, you know, again, we thought just as in the lab, we thought, we were doing the right thing 30, 40, 50 years ago; unfortunately, it's time to remediate. So right now you're not going by any new set standards but what is the older standards of TCE?

MR. SIVAK: The changing of a standard is a promulgated process. There is a lot of processes that's involved with it, a lot of processes

involved with changing the drinking water standard or changing a groundwater standard or something like that.

As I said, the existing standards that are in place at the state for water and groundwater, those are standards that are set at very, very low levels of detection levels, analytical detection levels, so if that needs to be recognized as well, that we're setting these standards at the lowest levels that can typically be evaluated regularly.

We are continuing to look into the toxicity of TCE, but we have a very high level of confidence that the existing standards are protected.

MS. ANCHOR: What about the synergistic effect of the combination of the different VOC's, have you looked into that?

MR. SIVAK: EPA's methodology is doing a mixture of samples, is

doing an additive process meaning that the health effects of chemical A and health effects of chemical B are added together. Because of the synergism or antagonism, as well competing mechanisms, are very viable options to consider, but additive approach is the standard policy that the EPA has used.

MS. ANCHOR: You haven't looked into the combination of different chemicals put together because if salt is salt, but when you pull those chemicals apart, it's deadly and that's the science of it.

MR. SIVAK: EPA process is to look at an approach used all over the country.

MS. ANCHOR: Again, I want to state my concern with chemicals in general because it seems like -- and I admire EPA, you are an Environmental Protection Agency, you are protecting us, but with the breast cancer issue, the issue in general, it just seems

like chemicals have more respect than ourselves; in other words, true or false, does it take less time to approve a chemical to come on the market than it does to take it off the market?

Again, I'm just throwing it out. I don't mean to put you guys on the spot, but it's frustrating, again, reading this article, this National Science Academy says it's a lot worse than we thought, it's highly probable carcinogen and you're still saying you are using the same standards as before.

MR. SIVAK: But, again, you have to understand that those standards are also set at the lowest levels that could be detected using the analytical methods that are available to us.

We are -- the agency has committed to absolutely looking at the toxicity of that chemical and once we

go through the Peer Review on that quota, the extensive Peer Review of those values, which is the way the agency creates toxicity values or develops them, then we'll have a much better picture of how toxic it is.

MS. ANCHOR: Is this one of the first or I guess one of the basic or first places that you're doing this or is this pretty much being done all over the country because I know it's a pretty common contaminant throughout the country?

Is this like a model to do more studies or is this just a standard?

MR. SIVAK: You mean the assessment of TCE that we presented here today?

MS. ANCHOR: Yes.

MR. SIVAK: This is our Agency's standard and practice of assessing TCE.

MS. ANCHOR: Just two more things I want to mention.

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I think there are two things you need to consider and that is that many years ago we didn't understand how chemicals affected people and now we seem to understand more and I wish I do know how Government works and, also, the issue of illegal developing, you know, Brookhaven is notorious for illegal dumping and please consider that when you do testing.

I know the Department of Health recently came out with its report about breast cancer clustering., they outsourced a lot of the information they found, unfortunately, they didn't go into the area, so even like this man says, there could be some illegal dumping that might not be on your computer as part of your data, but please consider that when you do your testing and, again, the last question -- and you mentioned a chemical being added to break it up and I'm always concerned, I'm very

cautious with new ideas, especially chemicals being added to groundwater.

Can you explain a little bit about this type of chemicals or compound being added?

MR. MCDONALD: I guess you are referring to the chemical oxidation we discussed.

At this point, it is not that. We have a chemical identified for that, already several that could be used and, you know, any application of that is not going to increase the risk associated with the site. It would be a pilot investigation, studies done prior to the application of this at the site.

MS. ANCHOR: Is there any other information; is it organic, is it --

MR. BADALAMENTI: Most of them are oxidants that will break down.

MS. ANCHOR: They dissipate after awhile, they're no longer in the groundwater?

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MR. KLERIDES: It's hydrogen peroxide, it's a high concentration that goes into the ground. It burns the contaminants right away, so it' s like that kind of material that will be placed down, you know.

MS. ANCHOR: Again, my concern is are you making it better by breaking it down or making it worse by adding something, so as long as you're comfortable with this particular chemical.

MR. MAYO: By the way, what Demitrio is talking about with hydrogen peroxide will eventually breakdown to water, primarily water so that it doesn't really leave a residual that is toxic.

MS. ANCHOR: Thank you.

MR. MAYO: It takes a little time to do that, but it will react with the things in the ground.

MS. ANCHOR: Thank you.

MR. SCOLIO: My name is John

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Scolio, I own the property north of the Old Mill site.

My question is how will this affect future building, future permit processes? The Village of Port Jefferson takes a stand, it's waiting to see what comes out of this meeting and your determinations, but for anybody that wants to build on the fringe of that site or on that site, not the Superfund site, but the surrounding sites, houses, building projects, how will we be affected?

Is there new technology that we need to know about before building; venting systems that have to go underneath these cement slabs or driveways? Will we be made aware of that or the Village Building Department be made aware of that and how soon will we be made aware of that and the last question is how is that going to affect, you know, we're looking at multi-use projects, high

density projects, how will that be affected by this site?

MR. BADALAMENTI : We don't want to get involved in the local planning decisions or construction decisions on buildings, but there have been some discussions.

What are the prudent steps that should be taken if vapor intrusion is a problem and one of those is putting a venting system below the slabs so that if there are vapors coming up in the buildings, they can be exhausted.

That's typically a solution to this type of problem and it's going to affect everywhere and I would assume that's what builders would like to do. They should be prudent and acceptable to the local building officials.

MR. SCOLIO: Thank you very much.

MS. WELDING: I'm Doris Welding. I am a fairly new resident here. This was an unpleasant surprise

that was put upon us recently and my major concern, of course, is I have two very young children and I'm curious since this site has been discovered, the 5-mile radius and the people living there, particularly the people using that well water initially, has there been any type of test studies as far as their health, cancer studies for these people and, also, not only the before, but the after, like since the public water has been installed, has the health of this area improved? Has there been less incidents of cancer?

I have two questions, if I may, that was my first question.

MS. CARPENTER: Those studies are handled by the New York State Department of Health in conjunction with the state and we do have some representatives here from the Department of Health, but I am not sure if they are familiar with any

studies that might have been done, so this is Deanna Ripstein.

MS. RIPSTEIN: My name is Deanna Ripstein. I didn't help to prepare any of the health consultations and I wasn't part of the breast cancer investigation, but I do manage this site and I am familiar with the health consultation that was prepared to look at the potential risks for those residents that consumed impacted drinking water from their private wells and we do have a health consultation available. I can get your address and I can send you that information.

Basically, we, in the whole consultation, we looked at the -- what were the concentrations that people could have been exposed to. The major contaminant was TCE in drinking water and over what duration.

When we did our health risk calculations, we did conservative

calculations, so we looked at the highest concentration that was detected and then we projected that people could have been potentially exposed to that concentration for 30 years.

The results of that showed that there may have been a moderate increased risk for people developing cancer if they were exposed to that highest level of TCE for 30 years; it's a very conservative calculation and there was also an increased risk of other health effects.

When we did calculations to look at the next highest concentration of TCE that was detected in a private well and we did calculations for 30 years, we assumed or we concluded that there was a low increased risk of developing cancer.

MS. WELDING: Did anybody actually go to the residential area and just actually kind of take an

example block and say how many people have gotten sick or have neurological issues?

MS. RIBSTEIN: It is challenging when you're dealing with a smaller population to find statistically elevated incidents and to do a study that just focuses on a small population.

I would say that I know we have a registry called the VOC registry that we track people we know have been exposed to various volatile organic compounds and we can track their health history and we track them even if they moved to other locations; that's one of the challenges when we're doing a health study, especially when you're dealing with exposures that have happened 20, 30 years ago.

People don't necessarily live in the area, but we do have that registry and I know that that was talked about in the health

consultations that we can, you know, pursue that and track these residents.

MS. WELDING: I'm still not getting it. I am a layman in all of this. I'm still trying to figure out how dangerous it is to live in a 5-mile radius of this site is what I'm trying to figure it out.

MS. RIBSTEIN: I would say from the whole Department's perspective, we do know of these past exposures associated with groundwater. People are not drinking contaminated groundwater anymore. People are drinking public water connected to the public drinking water supply which is routinely monitored for quality and it must comply with the drinking water standards, so we no longer have the concern about people drinking impacted private well water.

In terms of people living 5 miles away, we don't know of any exposures at this point. The major

concern was the soil vapor intrusion concern and EPA is still looking into that, but based on their investigations to date, we're really not seeing exposures that -- through that pathway.

MS. WELDING: You think this whole cluster thing is kind of a side issue from the LAI site in particular?

MS. RIBSTEIN: Yes.

MS. WELDING: Thank you very much. I have a second question which is very brief.. I know they found 30 electric transformers that are still going to be tested and I was just curious why it hasn't been tested yet considering all of the issues on the site as it is, why it hasn't been done to see what's going on with that?

MR. BADALAMENTI: One of the problems is it's been a semi-active facility. There's no production going on of what was going on in the past, so we've tried to focus on the site

grounds and the groundwater below it to see what the past releases of chemicals in the area are, so we did note that there are things on the site that we check for leakage and the presence of PCB's and if they do turn out to be a problem, we will address them as well.

MS. WELDING: Is that something you plan on doing in the near future or years up the road?

MR. BADALAMENTI: As part of the design process, we were doing an initial investigation and it will be in the near future, within a year approximately.

MS. WELDING: Thank you very much.

MR. KIRSCHNER: My name is Hal Kirschner. I recently moved into the area in a senior citizen area and this project is kind of close to that area so, you know, I have a few questions. One is when that study you did,

the VOC's you did it in the classrooms and surrounding homes, was that done over a period of time, was it done like ten minutes here, ten minutes there, was it done with the air conditioning on, without the air conditioning on, because you have ventilation systems.

How was the study done where you got such a perfect record?

MS. CARPENTER: I will answer that and you can go on to the next question.

MR. KIRSCHNER: Then another thing you said was that there was some contaminated wells that you found; is, that correct, contaminated wells that they were using as sprinklers systems they're not drinking it, right?

MS. CARPENTER: There are two residential wells.

MR. KIRSCHNER: Why would you let them use the contaminated water to sprinkle the ground?

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MS. CARPENTER: They were not contaminated. The wells that we are talking about that are contaminated are wells that we specifically installed to examine the groundwater for contamination.

MR. KIRSCHNER: I thought or I was sure that you said that there were some homes that were using wells --

MS. CARPENTER: There are two homes that have private wells, but they are not their drinking water wells. Those private wells were tested and they were not found to be contaminated.

MR. KIRSCHNER: Okay.

MS. CARPENTER: But you are right, we did mention other wells which are contaminated. They are not drinking water wells. They are what we call monitoring wells. They were installed by us or by the state as part of the investigation activity.

MR. KIRSCHNER: These VOC's

that you are talking about, is that the same kind they were talking about years ago that were radon or something. is that different or is that the same?

MS. CARPENTER: Radon is a radioactive gas that's a buy product of natural decay from the radium which is -- it naturally could be contained in soils and rocks and things.

What we are looking at when we say volatile organic chemicals, the easiest one for most people to think of is nail polish remover. You know when you open the cap, even guys who don't use it, you know somebody opens it in the house, you know it throughout the house and that's because it is volatilizing into the air and you can smell it; that's acetone which is a volatile organic chemical or compound.

So this TCE that we have been talking about tonight is also a volatile compound.

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MR. KIRSCHNER: I'm a layman in the chemical world; is that titanium TCE?

MS. CARPENTER: That is a metal.

MR. KIRSCHNER: What's a TCE?

MR. BADALAMENTI: That would be in liquid Wrench.

MS. CARPENTER: It's used commonly as a solvent to degrease. Years ago people even used to put it down their septic when you had your own septic system, you know, it would get gunked up, pour some of this down, it took the grease right now, okay out; it is a common degreasing agent.

It is probably one of the most common chemicals that we find on all of these Superfund sites.

MR. KIRSCHNER: You would find it in garages?

MS. CARPENTER: Yes. Gun cleaners where people hunt upstate we can detect it with that TAGA bus you

saw even before you actually ever open the package, that's how volatile some of this is. It is in the stuff that you waterproof your boots with, some of that has it.

I was recently informed that fake snow, you know, I know when I was in school, we used to put the fake snow on the windows, that has it.

Silly string.

It is one of those chemicals that is pretty much very widely used, that's why testing for it in indoor air extremely difficult.

To answer your question that you had earlier about the air testing, you will actually see that there are ports, little testing ports in the corner over here. There is one over there. We take the sample from underneath the slab in multiple locations because this is a big building, that sample is drawn over a twenty-four hour period, so we don't

just come in for ten minutes or 15 minutes because that's not representative.

The issue for us usually is if it's not under the slab, then it's not in the building from site related activity.

This being a school, we had a little bit more concern that we wanted to get out here. We did it the week the kids were off, President's Day week. We came out and did the sub slab and also tested the indoor air. They are a little alarming, they look like giant silver bowling balls.

We put those down and they draw air in over a very slow period of time. They are calibrated for 20 hours. We take that sample that is sent to the lab for analysis. We also have what's called a trace atmospheric gas analyzer, that was that mobile laboratory and that was -- we literally went around sniffing

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This is a canister or a device that we collect the air in. That is actually collecting a sub slab sample. As you might guess, the last thing I want to do is collect an air sample in there because I will not know if it's from the contamination in the groundwater or all the stuff in the garage. There are a number of sources; engines, cleaners, chemicals. As you can see, there are a number of things that could complicate this.

MR. KIRSCHNER: I have another 1 question.

On the screen you said that contaminated soil will be taken away to off site facilities. What are these off site facilities? Where will they put the contaminated soil?

MS. CARPENTER: Any contaminated material that we remove from a Superfund, by law, is required to go to a permitted or licensed facility. Those facilities are –

they're throughout the country. They are commercial operations and they are permitted by the state that they are to accept this waste within certain engineered disposal areas. There are very strict regulations on how this can be disposed of now because nobody wants to become the next Superfund site at 24.2 million dollars, it's an expensive process.

So we are required to get approval before we send anything off site and we do that through our various EPA regions if we're not sending it to a facility like New York.

MR. KIRSCHNER: This last S2, G3 option, they didn't say how long -- it was 30 years right, S2 was immediate, is that right?

MS. CARPENTER: That is what's going to take us an estimate delineation of where we need to go. We need to refine that a little bit

and how long it takes us to get whatever earth moving equipment is necessary, so that is a shorter period of time, you are right.

MR. KIRSCHNER: From the draft you had, it showed the lines going lower and lower towards the port. Doesn't it make sense to start at the port where everything is going like north to northwest, you know, like start at that point? Also, at the same time, you are working at the LAI plant because if everything is migrating in that direction, it seems like you want to get down there first.

MS. CARPENTER: That's one of the things during design what we will try to do is look at should we start here, there, should we try to do both simultaneously? Those will be the kinds of issues in terms of design that we need to try to come up with.

MR. KIRSCHNER: It seems if you disturb the soil up here, you are

going to make it worse down here.

MS. CARPENTER: If you recall, the soils that we are removing are called PCS contaminated soils and those are located mostly in the upper portions of the soils. They don't really migrate in the same way that the volatile chemicals do. They stay put where they sort of go. They ooze into the soil and then they tend to stay put.

The volatile chemicals which we don't have sources on-site anymore except right below the groundwater, we won't be disturbing, you know what I mean? There is not -- the PCS soils are not going to be disturbing volatile soils. We will be sort of scraping those off the surface areas.

MR. BADALAMENTI: The preferred remedy recommended does address both areas.

MS. WRIGHT: My name is Lynn Wright and I have more of a comment

than a question.

I represent an adjacent property owner who is also a developer, but the company has an option to purchase the site, and to show the company's good faith, the company has been working with DEC to clean up the site, not the hazardous wastes, but scraps. They are doing general housekeeping at the site.

While I understand that EPA does not want to and should not get involved in local development, I think that the policy of EPA is to encourage on sites like this to be put back into beneficial use and that is what this developer would like to do and they would like to do it -- the plan is not firm, but it will definitely be non commercial, non industrial use and it will be developed with the input of the community, the town and the public.

Now, one of the things that the

NCP requires is that the remedy be cost effective and I have to say we were really surprised when we saw the remedy selection or preferred remedy at $24 million. I think $24 million almost assures that this property is not going to be put into any kind of productive use in the near future and I didn't get all of your definitions at the beginning, but I think that 36 acres were actually used as part of Lawrence Aviation and the remaining acres are pretty much forested and not used, so it seems like we need to encourage a reasonable and cost effective remedy at this site and, in that regard, when taking a look at the RI and my colleague here has some comments with respect to that.

MR. HANIAN: My name is Gustov Hanian and I am the principal geologist at Hydrotechnoponics and I also represent a prospective buyer for the property as well.

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I have a few questions which is the first conceptual map that you have up there, you had shown us some drums all over the property and it looks all messy and then you have demonstrated that the volatile organic compounds that is leaking from the property, which is poor housekeeping, traveled all the way down deeper into the zone and then migrate into the pond.

You have also indicated that you took almost 392 soil samples.

Among the 392 samples, there is not one sample indicated that there is no TCE, so now, additionally, there is also a layer about 50 feet thick. The thickness of the layer that plays as a barrier that is not going to penetrate very easily the contaminant, the volatile organic all the way down to the water table, so how would you get those assumptions that the volatile organic compound, the TCE, did penetrate down deeper and had left

everything in the soil all the way to the groundwater?

MR. KLERIDES: First of all, the soil samples that we took with the exception of the borings from the well that we saw the massive boring operations at the facility, they went up to 200 feet. There are ways of doing it that not allows us to do further than that. We're not a hundred feet.

The borings that have been done for our wells, we took samples and screened them with instruments every 10 feet along the way during the course.

Now, the reason why we believe the contamination starts is because the highest concentrations that we have seen throughout our investigation here, it's right at M. P. W. 7 which is right between these two buildings, it's 1200 parts per billion is the highest that we've seen anywhere.

Now P. M. P. W. 2 which is on the other side where the lagoons used to be, it showed about 980. Those are the highest numbers that we've seen anywhere in our investigation and they are at the groundwater interface right there, right there, that's where you see it, okay.

So if it was - - it came from somewhere else because M. P. W. 7A right behind there, it was an unsuccessful attempt for us to install a well there, we got stuck, we had to basically abandon it. We went down to the groundwater table and it showed no contamination at all and then 200 feet or probably less further downstream at P. M. P. W. 7, there it is at the interface right there, that's --

MR. MAYO: We found no continuous 30-foot layer of clay or silt that you have talked about. We found a zone that was leaching silt, but it was not continuous, meaning

laterally continuous, across all of the area, so this is what we are looking at here which is a general invasion of a silty zone, but it has areas of gravel zone, so it is not totally continuous, so the bottom line is we don't see it as a barrier to downward migration.

MR. HANIAN: The well that you put out the readings what. you are seeing is clean, the monitoring well from the site. If you take a look at the result of the well and you see that you have MT there, where is that chemical?

MS. CARPENTER: Speaking for somebody who covers all of eastern New York, central New York and almost out through the west, we have on almost every site since MTBE was added as a gasoline additive, we have a very high percentage of samples in groundwater that come back with MTBE contamination.

It is not site related. It is a gasoline additive and it has been for a number of years and we have found it is , in the groundwater and, unfortunately, it is one of those chemicals that are becoming more and more indicative in the samples that we are collecting.

MR. HANIAN: Other question regarding now you say you have determined the source and you have indicated you are speculate willing that the source is right there because you found the numbers. You are speculating, you're not really sure where this source is.

As a matter of fact, if you started doing the remediations, what is going to happen is if you're not going to find really the source, it's going to be an ongoing source, so if you are telling me it's going to put the time off of the remediation of 30 years, it may take 70 years if you

cannot find this ongoing source, so before you do the remedy, can we determine where in the source it is?

MR. BADALAMENTI: We will try to do that and will be doing that.

MS. CARPENTER: Any testing that we do would be during the design process which would be post the issuance of the record of the decision.

That is a very common process in the Superfund world where we try to refine the information that we have on the site in order to optimize the design and I think you probably are fairly familiar with the fact that when we call something a predesign investigation, we are not talking about delaying the selection of a remedy because as people have expressed here, there is some concern about the length of time that it has taken to get to this point.

We know that there is a

groundwater problem of fairly high concentration levels immediately below the site. We know that needs to be addressed because we do know that it is continuing to flow down towards the harbor and so an action needs to be taken.

MR. HANIAN: As you know, then we only detected 1.2 parts per million. We are talking here not thousands parts per million, we are talking one, two parts per million, are we going to spend $26 million on remediating 1.2 parts per million and has been decreasing since the last time we have sampled the last time.

Secondly, you have indicated that the pond was sampled and when the pond was sampled, there is also other compounds that is not related to the projects at all such as I think herbicides, pesticides, you have also some semi volatile with all of the -- all of the stuff is -- where is it

coming from? Have you identified where they are coming from?

Third of all, I think you have indicated that the health risk there is no health risk as far as the deep groundwater which is not going to harm any human being at all. The only thing you have is the habitants which is in the pond, not on the other stuff at all.

SPEAKER: It's not under your house, it's under mine.

MR. SIVAK: First of all, getting back to the concentrations that were detected, the 1,200 milligrams per liter that you mentioned, the drinking water standard is five, that's over 200 times higher than the drinking water standard.

EPA and the state certainly feels, yes, that does warrant a clean up. We also have detectable levels of these volatile levels in the surface water. The groundwater is discharging

into Old. Mill Pond, okay.

When -- if any of you would ever spill nail polish remover in your home, you know that it would volatilize very quickly; one minute it's there and the next couple of seconds it's going to be gone. As this plume of contaminated groundwater is discharging into that surface water body, it's staying there long enough for us to actually detect it, okay.

The groundwater is very deep and nobody is currently drinking it right now, you are correct. We are sure of that because the levels are so high, but, however, there is a state regulation that requires groundwater to be treated as a drinking water and that's solid gold. The Federal regulation states that we must remediate all groundwater to its most beneficial us, e, so it's consistent with the law and we are trying to get to that point.

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We have identified risks under potential future use scenarios and that is what our remedies are proposing to mitigate.

MS. CARPENTER: The other point I would like to raise is we are an Environmental Protection Agency and our charter says we protect human health and the environment, which does include non human receptors from site contamination. It does include water and any kind of ecological receptors, so we do evaluate both and consider both in our remedial decision making.

MR. KLEEGAN: It used to be they had gas pumps and gas tanks on that site as well. Kevin Kleegan, resident.

You talked about the groundwater that we ultimately do drink as being clean. Could you show us where exactly the water supply wells are?

MR. KLERIDES: Can I point out

some areas? If I'm not wrong, about probably about half mile or maybe a quarter mile further down this direction, okay, then there is one past this area right here.

MR. KLEEGAN: There was a well field right on the harbor, West Broadway, with shallow wells. I don't think they are in operation anymore, but during the time they were in operation, they were being closely monitored.

SPEAKER: You mentioned that the sediment was increased or impacted. Is there any consideration in dredging that material once we stop the contaminants?

MR. BADALAMENTI: Once we stop the contaminants from coming up into those sediments, they will affect the VOC, but we will take a look whether or not those sediments in the creek should be dredged out and removed. We will be looking at that during the

design process.

MR. MAYO: If you would like to come up later, I can show you exactly where those public supply wells are sampled.

SPEAKER: One more question I have concerning the vapor issue.

We discussed looking at specific locations. Is there any kind of long term remedy that's being considered for vapor and shooting across the area and I know you go in home by home if there is an impact, but how about soil guides across the entire area?

MS. CARPENTER: The easiest fix is actually home by home because the long term environment still is through contamination in the groundwater which, as you heard from the presentations, is not going to be a short term process.

There are in some areas not on this site but on other sites we have

extremely high levels of soil gas present we can sometimes do systems but again they're in a very localized area to extract those gases from the soil, so the most efficacious way is to put in individual systems which we would do if necessary and then a long term fix is to clean up the groundwater.

No, it's not a global fix that we can do.

SPEAKER: But was the soil extraction considered at the site?

MR. KLERIDES: It was considered and screened out.

SPEAKER: The excavation that you are considering, I'm not familiar with what chemical you are planning to use, but the degradation of the TCE, is there any risk to the compound fluoride that would become more prevalent as a result of that process and how does that affect soil vapor?

MR. MCDONALD: I think the

question was, yes, natural processing does occur sometimes in groundwater in which TCE is degraded which produces chloride which is not more toxic than the TCE itself. The type of oxidation we are talking about would be strong enough that they would get destroyed with the TCE and any of the breakdown products, so it would be a complete oxidation for it.

SPEAKER: What kind of time frame would that be because for some period of time there will be vinyl chloride that will exist?

MR. McDONALD: It's pretty much on contact. The problem is sometimes you have to apply it more than once and this is going to be used in conjunction with the groundwater extraction and treatment system, so it's a way to enhance it. It's not the end or single remedy itself, it's a way to enhance the remedy of the pump and treat system.

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MR. KLERIDES: The vinyl chloride is generated when you have a complete breakdown of the TCE. In this case, right here the oxident is going to break the contaminants right away.

MR. McDONALD: The groundwater will be monitored during this process to make sure something like that is not occurring.

SPEAKER: The table that you had up there concerning the air sampling in school, there was one number up there that you didn't reference. I think in the certain room there were 420 parts –

MR. BADALAMENTI: It was quite low the indoor air level. We would like to come back the next heating season to check out that number for that location again.

Again, the indoor air numbers are showing no impact. As long as the indoor air is not impacted, we're

pretty comfortable with it.

SPEAKER: Concerning funding, that end of things, are we certain that funding will remain in place for this or is that questionable depending on presidential elects; how does that work?

MS. CARPENTER: Funding is, let's face it, it's an issue. I mean, there's no going around it.

What I can tell you is, historically, region two, which is the New York, New Jersey portion of EPA, maybe it's that New York thing, but every year we take the lion's share of national dollars and we have a pretty aggressive group of people who go to Washington every year and play them up and say we need the money, we have all of these sites.

Region two has one of the dubious distinctions of having the most Superfund sites in the nation. Once a site is under remedial action,

we have not had a problem in getting the funding to continue that remediation.

We've already started the process, you know, with our headquarters component to let them know this is what we're looking at and this is how much money we're going to need. Keep in mind that the money we need up front is the capital costs. Some of the costs in that $24 million is the annual operation cost, so we don't need that money like today.

Can we guarantee funding? There's never a guarantee that I can give you other than to say like, historically, and once we start our sites in this region, we have continued them and they are ongoing. We have a lot of sites in what's called "long term remedial action," you know, hopefully budgets will get a little lighter, but I don't see that happening in the near future, but we

will certainly keep everybody up to date and let you guys know how we're making out.

MR. McCAFFREY: My name is Brian McCaffrey, I am an environmental engineering consultant with the Village of Port Jefferson.

First comment, I think your approach to the remediation or clean up actually is a pretty good one, so we will be submitting formal written comments by the end of your comment period of August 19 with a. number of our observations.

The first more likely comment feeds upon the question about the sediment in the creek that goes back to the risk assessment health assessment of the current creek condition. Given what you're seeing in the waters of the creek, given its limited institutional controls of one silly sign, no fencing currently, we were interested in seeing a fencing

issue up there, so I would like to hear your comment as to current health risk to children who may inadvertently play in the creek, play in the pond. What is your assessment? What did you see in the F. S. or R. I?

You had some assessments. I don't remember the conclusions.

MR. SIVAK: The human health risk showed that there were no unacceptable risks from recreational exposure to the surface water. The issues were primarily associated with potential ecological risks to the surface waters in Oak Mill Pond and creek, so those were the two issues associated with that.

I think another factor we need to keep in mind is those VOC's we are talking about aren't likely to bind to the segments either. We analyze the sediments because we were looking for an entire group of chemicals. Some of them do like to hang out as sediments.

Others like to stay more dissolved in water or with the groundwater, but we ended up finding, as a result of this remedial investigation, is the contamination that is of greatest concern which is the reason we are talking about this action.

This group of contaminants are called VOC's which doesn't necessarily like to partition to the sediments, so it's kind of percolating up through the sediments and as Sal said, once we treat the groundwater contaminants that are discharging we are pretty confident that contamination we detect in the core water in the sediments is going to continue to be volatile and not be residual.

MR. McCAFFREY: It will be interesting to see if that really happens. I still think you need to target potential remediation of the sediment in the creek and take a look at this and I'm also concerned about

what you said about stopping the TCE. I don't buy that. I'm assuming you have some bypasses, that's the real world, I am going to say you will continue to have some feeding. You don't see any institutional controls that you recommend today to that pond?

MR. SIVAK: There is an advisory on there now.

MR. MCCAFFREY: Other than the sign?

MR. SIVAK: That is correct.

MR. MCCAFFREY: That's all I want to know.

MR. SIVAK: The sign that's in effect right now, that sign is up because of a surface water violation. It's the limit that was the recommendation by the state Health Department.

MR. MCCAFFREY: The other comment is about the plume in general as it moves toward the harbor, just as an observation, I think the east side

of the plume for extensive length downgrading from Morris needs more delineation. I think the extrapolation is a reach, so I'm not sure sitting here how far east it really goes and then downtown north of the pond and creek kind of under the Village Hall area and all of that is largely defined on some of your earlier maps and then you heard questions tonight from potential builders and we chatted about that and groundwater is a couple of feet down, you dig and you are there, so you see comments from the Village about encouraging further delineation into these and I thank you.

MR. BADALAMENTI: We will responds to your comments when we get them.

MR. GORG: My name is Walter Gorg. I live on Longfellow Lane. You say the further down the hill, the closer the water comes to the surface.

Proceedings

I'm on an equal level with the school. I just want to know how toxic is it in my basement?

MS. CARPENTER: Did you allow --

MR. GORG: I don't drink the water, I got city water, but I want to know am I sitting on a love canal?

MS. CARPENTER: We haven't seen that kind of data. What I can say to you is did you allow us to test your home ?

MR. GORG: I just heard about this in the paper the other day there was a map.

MS. CARPENTER: Then we can certainly, if you want to give us your name and address, when we come out to test, we will certainly test your home for you and we can answer that question for you.

Based on what we've seen so far, we haven't seen a big problem, but that is, as you know, no guarantee

Proceedings

for an individual property, so we would be happy to come test your property.

MR. GORG: Give my name to who?

MS. CARPENTER: To Cecelia and if you don't mind, we do need to take a brief break so we can get your information.

For anybody else who has questions, we will be happy to stay and answer your questions.

(Whereupon, a recess was taken.)

MS. ECHOLS: Are there anymore questions?

MR. SCHWARTY: I have one further question. My name is Michael Schwarty.

My question is has the location for the pump station at the Mill Pond been determined or will that be part of the design and how much area will it take up?

MS. CARPENTER: That's all going to be part of the design. We

Proceedings

haven't picked a specific location, so we will have to balance that with how much space is available and how big a system we need. We will work with the local folks to make sure that we're not too negatively impacted in that area. It's going to be there.

MR. SCHWARTY: It's a wetland area. Will that be located in the wetland area typically?

MR. BADALAMENTI: We will look at the options available, but it's going to have to be near the pond somewhere and you have the park on one side and residents on the other side, there's not too many options.

MR. SCHWARTY: Thank you.

MR. SINELNIKOV: My name is Igor Sinelnikov, I am a physicist myself. I want to make a suggestion to you.

At Stony Brook, they have a good team of people studying this area. You may consider employing

their expertise in creating a model and I know that as students, they go into the Stony Brook area, so they may provide you with their good expertise.

MS. CARPENTER: Are you referring to the U. S. G. S.?

MR. SINELNIKOV: I am referring to the Stony Brook University Earth and Space Science Department. They have a hydrology lab and environmental science. I can give you the contacts if you're interested; it's just a suggestion because they did study this area and they may be able to give you a good insight.

MS. CARPENTER: We appreciate any contacts you might have.

MR. SINELNIKOV: Thank you.

MS. CARPENTER: Don't forget to give it to us.

Are there any other questions?

MS. SHOPING: I'm Marianne Shoping.

Proceedings

What is the significance of the red dotted line on I guess the exterior of that area? My house is almost just a little to the left of that red dotted line. Is that considered safe outside of that area or what?

MS. CARPENTER: The red dotted line is an approximation of where we think the groundwater plume might be, okay. If you're near that area, we certainly -- you can sign up for us to do the testing. We will do that first.

MS. SHOPING: If I'm just outside that area, that red dotted line, I'm still eligible if I want to have my home tested?

MS. CARPENTER: The easiest thing would be for you to show us on the map in a few minutes when we wrap up and we can let you know whether we think you're in that area that we need to get into and if you are, we will be

happy to provide testing.

MS. SHOPING: I have one more question about the surface water at Mill Creek. Were any air samples taken around there? I spend so much time in town sitting, seeing people sitting around the creek, were any air samples taken?

MS. CARPENTER: We tested by the creek -- not by the creek, but the pond and we did notice there are some elevated concentrations there, so one of the areas we would like to re-test because outdoor air fluctuates quite a bit, as you know, between temperature and winds and everything, so we want to get out and do additional testing there to see if that's just a like a very local phenomenon because we were on top of the pond or perhaps go a little further out to see what's going on.

MS. SHOPING: I know the kids have their physical education outdoors

and they spend quite a bit of time with the breezes. I am wondering if that should be a consideration to test the area?

MS. CARPENTER: One of the things we would like to do is do some additional testing in and around the pond area and trying to get soccer fields, get something there and hopefully not have these samples -- it's something we need. It's probably not a problem out there.

MS. WEISBERG: My name is Maria Weisberg, I am representing some women from this district and I want to thank you all for coming and spending time with the community.

I have one question about who is going to be paying for the clean up, the Superfund? The representatives from the potential developers seem to be surprised that it costs so much as if they might pick it up; that's a little confusing.

Proceedings

MS. DAVIS: My name is Elizabeth Leilani Davis, I am the site attorney at EPA. I can answer that a little bit.

The Superfund has a reimbursement mechanism for any costs that are spent by the agency on any clean up or, more precisely, when the agency takes action to respond to a release or a threat of a release, so the Lawrence Aviation has been notified of the potential liability at the site and we have had some preliminary negotiations with them regarding costs already spent by the agency with respect to who will be paying, that is something we will be looking to as those costs are spent by the agency.

Did that answer your question?

MS. WEISBERG: Is there some mechanism that a developer would pay for some of those costs or all of those costs?

Proceedings

MS. DAVIS: We have these documents, it's getting a little more technical now. We do have -- several years ago developers and municipalities were coming to the agency and saying, "Hey, we would like to purchase or develop this site, could you help us out?"

We created these documents called "perspective purchaser agreements" and, in addition, a few years ago, Congress also passed another section of Superfund which allows for instant owner provision if a potential owner takes following actions, so currently any developer has no liability at the site, but they wouldn't be held responsible for any costs, but I don't know.

MS. CARPENTER: If your question is could somebody else decide to take on the costs? I don't know why. You know, we would have to hear from them and see a proposal from

them, whether they would be willing to take on some portion of the work, for example.

MS. DAVIS: That would be probably any kind of. VPA that involves a developer, sometimes they will settle with us for certainly costs that we will put into a special account to allocate towards clean up and that's less money that the taxpayer has to pay, sometimes they agree to do some of the work in exchange for not being pursued for some of the other costs.

MS. WEISBERG: In another part of our local area, there was a Kings Park psychiatric hospital site, there was concern that a developer would come in and clean up that site, but there would be increased density for that area to come and make it financially feasible for them and I guess I was wondering if that is or happened with, you know, any of the

Superfund sites?

MS. DAVIS: Density type issues are for the local government to decide and that's separate from any type of settlement they would enter into with the U.S. and we wouldn't -- I don't recall and we have -- never would have, it's two separate issues.

MR. GROSSMAN: My name is Lou Grossman. I have a question.

It seems that the contamination is limited to the industrial site. There was outparcels around 90 acres, also one assumed, based on your findings, that that acreage is clean?

MR. BADALAMENTI: Yes, the answer is yes.

MR. GROSSMAN: Would that be able to be developed while the industrial site is being modified or cleaned up?

MR. BADALAMENTI: I think it would have to be de-listed and separated from the main industrial LAI

site.

MR. GROSSMAN: Thank you.

MS. CARPENTER: We have time for one or two more questions.

In that case, if anybody wants to ask a question and didn't want to get up to the mike, we will be here for a few more minutes.

We want to thank all of you who came and stayed and we thank you all for coming and we look forward to issuing the record of decision for this site very shortly.

(Whereupon, the hearing ended at 9:50 p. m.)

C E R T I F I C A T E

STATE OF NEW YORK)

) ss.

COUNTY OF NEW YORK)

I, Dawn M. Spano, a Shorthand (Stenotype) Reporter and Notary Public of the State of New York, do hereby certify that the foregoing Hearing, taken at the time and place aforesaid, is a true and correct transcription of my shorthand notes.

I further certify that I am neither counsel for nor related to any party to said action, nor in any wise interested in the result or outcome thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this 6th day of September, 2006.

_____

Dawn M. Spano

Community Health & Environment
<chec@optonline.net>
09/17/2006 10:19 PM

To Sarah Anker <sanker@optonline.net>
cc
bcc
Subject Lawrence Aviation comments

Lawrence Aviation EPA response.doc

Salvatore Badalamenti, Project Manager
US Environmental Protection Agency
290 Broadway, 20th Floor
New York, NY 10007-1866

September 17, 2006

RE: Comments to EPA- Lawrence Aviation Industries, Inc remediation

Dear Mr. Badalamenti,

I am writing to express my concerns with Lawrence Aviation Industries (LAI) contaminated site. Forty-seven years ago Lawrence Aviation began producing titanium sheet metal for the aviation industry. The production involved the use of many toxic chemicals including Trichloroethylene (TCE).

The National Academy of Science (NAS) reported that since 2001, evidence has strengthened showing that exposure to TCE is more of a carcinogenic risk than previously considered, and can cause other health related issues. NAS evaluation committee recommends federal agencies finalize their risk assessment with *current* available data. The committee stated that the biggest threat is kidney cancer, but TCE can also cause liver cancer and reproductive and developmental problems, neurological damage and immune system disorders.

Suffolk County Department of Health Services (SCDHS) and New York State Department of Environmental Conservation (NYSDEC) began investigating the site 1971. In 1980 SCDHS ordered Lawrence Aviation to remove drums containing toxic chemicals. Lawrence Aviation cleaned up the site by dumping thousands of gallons of chemicals into the ground, which has ended up in Pt. Jeff's groundwater. The plant continued to operate until March 2004. The $24 million question is, why has it taken so long to address remediation at this toxic site? There are two important lessons to learn from this: EPA must provide over site when allowing companies to clean up after themselves; and if it is known that there is a problem, correct it as soon as possible or it may become more of a problem.

According to EPA's remediation plan Alternative GW3/option 3, the EPA is considering the oxidizing agent permanganate. Additional technologies should be reviewed to determine the best oxidizing agent to be used at this site. Permanganate's hazard concerns include: spontaneous fire ignition and it is harmful if swallowed. There is also concern with increased toxicity in sea life from potassium permanganate.

I appreciate the Environmental Protection Agency's current proactive initiative however, more must be done to protect the health of the residence in the area. The EPA should take an aggressive stand and remediate the site as soon as possible. TCE is a serious public health threat that needs strong regulation

by the EPA. It's imperative the EPA consider the consequences of the effect chemicals have on human health and in doing so, be proactive in remediating environmental toxic sites in a timely manner.

Sincerely,
Sarah Anker
Community Health and Environment Coalition
Mt. Sinai

631-474-1783
12 Eagles Landing, Mt. Sinai, NY 11766

Salvatore Badalamenti, Project Manager
US Environmental Protection Agency
290 Broadway, 20th Floor
New York, NY 10007-1866

September 17, 2006

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Sincerely,
Sarah Anker
Community Health and Environment Coalition
Mt. Sinai

631-474-1783
12 Eagles Landing, Mt. Sinai, NY 11766

Trichloroethylene (TCE), MTBE and many other toxic chemicals are in our ground water, soil and air. Long Island's past history of industrial plants, agricultural pesticide application and indiscriminate dumping, has led to, what I call "the unknown factor". The unknown factor place blame on environmental effect of chemicals and the theory based on the idea of what you don't know won't hurt you.

Proactive steps you can take to reduce your risk to chemical exposure includes: reducing your use of chemicals, supporting legislation to increase chemical standards and participating in the remediation process.

Town of Brookhaven
Long Island

Brian X. Foley, Supervisor

September 15, 2006

Salvatore Badalamenti
US Environmental Protection Agency
290 Broadway 20th Floor
New York, New York 10007-1866

Dear Mr. Badalamenti:

Re: Lawrence Aviation Industries, Port Jefferson Station

The Town of Brookhaven has reviewed the Final Feasibility Study and Site Recommendations for Lawrence Aviation and supports the findings for the following cleanups:

1. Removal of the surface soils within the LAI facility in the former lagoon areas and the former drum crushing areas. The alternative is identified as Alternative S-2 at a cost of approximately $700,000.00.

2. Groundwater extraction and treatment systems option 3 (GW-3) installed at both the LAI facility and within the plume near Old Mill Pond.

The Town of Brookhaven concurs with Suffolk County's determination that the LAI facility should maintain a industrial (or other non-residential) zoning category and that residential redevelopment be eliminated as a future possibility. However, it is important that the USEPA establish a Work Plan outlining the work necessary to remediate onsite soils. For this property, specifically soils under existing foundations and unsampled areas.

The Town of Brookhaven is in the process of evaluating the site, its zoning and open space configurations. The Town is currently developing a consensus among its experts as to the best usage of the LAI facility and the surrounding parcels. Additionally, my staff is working with USEPA staff to develop mitigation measures for future land development that may be affected by the LAI plume.

Department of Planning, Environment and Land Management
Division of Planning
One Independence Hill • Farmingville • NY 11738 • Phone (631) 451-6400 • Fax (631) 451-6419
www.brookhaven.org

In addition, please consider the use of a restrictive covenant that acknowledges the USEPA Remediation Plan and the potential for unforeseen impacts from the LAI contamination that would require additional analysis and remediation.

Thank you for allowing the Town of Brookhaven this opportunity to respond to your Final Feasibility Study and Site Recommendations. Please feel free to contact me if you have any further questions.

Sincerely,

David W. Woods, AICP
Commissioner

DWW:DC:jz
Cc: Steve Fiore-Rosenfeld. Councilman
Diane Mazarakis, AICP, Sr. Planner
Dennis W. Cole, Chief Environmental Analyst

40 BAYLISS AVENUE
PORT JEFFERSON STA. N.Y. 11776
SEPTEMBER 16, 2006

SALVATORE BADALAMENTI, PROJECT MANAGER
U.S. ENVIRONMENTAL PROTECTION AGENCY
290 BROADWAY, 20TH FLOOR
NEW YORK, NEW YORK 10007-1866

DEAR SIR:

I AM A HOMEOWNER FIVE HUNDRED FEET EAST OF LAWRENCE AVIATION INDUSTRIES, FOR OVER FIFTY YEARS.

THE CONTAMINATION FROM THAT AREA HAS MADE NUMEROUS PERSONS SICK; AND THE CONTAMINATION HAS BEEN A FACTOR IN THE DEATHS OF THREE INDIVIDUALS WHO LIVED WITHIN THE FIVE HUNDRED FOOT AREA OF THE INDUSTRIAL SITE, ONE OF THE PERSONS WAS MY WIFE ELLA GREEN.

YOURS TRULY
Thomas E. Green

Environmental Management Group, Inc.

"Consultants for a better tomorrow."

10 Janet Court, Suite 504, Nesconset, NY 11767
Phone: (631) 863-3331 • Fax: (631) 863-3332 • Email: emgeast@att.net

September 18, 2006

Mr. Sal Badalamenti
Remedial Project Manager
Eastern New York Remediation Section
US Environmental Protection Agency
290 Broadway, 20th Floor
New York, New York 10007-1866

Dear Mr. Badalamenti

Enclosed please find our written comments on the Proposed Plan for the Lawrence Aviation Industries Superfund Site. These comments were prepared on behalf of Mr. Eugene Fernandez of Global Homes, who still retains an interest in the project and the property. We hope to be able to meet with you and your team to discuss the project before the selected remedy is formalized in the Record of Decision, as well as to further discuss the possibility of de-listing the Outlying Parcels.

Please feel free to contact me should you have any questions and/or if you require any additional information.

Sincerely,

Michael J. Fiscina Jr.
Vice President
Director of Operations

Hydro Tech Environmental, Corp.
www.hydrotechenvironmental.com

MEMO

2171 Jericho Turnpike, Suite 345 | Commack, NY 11725 | T: (631) 462-5866 | F: (631) 462-5877
1111 Fulton Street, 2nd Floor | Brooklyn, NY 11238 | T: (718) 636-0800 | F: (718) 636-0900

LAWRENCE AVIATION INDUSTRIES SUPERFUND SITE, SUFFOLK COUNTY, PORT JEFFERSON, NY

Hydro Tech Environmental, Inc. (HTE), on behalf of a prospective purchaser and developer, submits the following comments on the Proposed Remedial Action Plan (PRAP), dated July 2006 and the underlying Remedial Investigation (RI) and Feasibility Study (FS) Reports for the Lawrence Aviation Industries (LAI) Superfund Site in Port Jefferson, NY.

Outlying Parcels

The PRAP defines the LAI Site as encompassing "approximately 126 acres and consists of the LAI Facility and the northeastern and eastern portions of the property, hereinafter referred to as the "Outlying Parcels". PRAP at 2. The LAI Facility includes 10 industrial buildings in the southwestern portion of the property, an abandoned unlined earthen lagoon which formerly received liquid wastes situated west of the buildings and a former drum crushing area to the southeast *Id.* Significantly, the PRAP describes the Outlying Parcels as "mostly vacant wooded areas and include a few small single family homes and three access roads" *Id*

The designation of the Outlying Parcels as part of the LAI Site is improper. Both the law and EPA's own RI and PRAP support such a conclusion. A " facility" is defined as a "building [or] structure...where a hazardous substance has been deposited, stored, disposed of or placed or otherwise comes come to be located. 42 U.S.C. § 9601(9). Further, the National contingency plan defines "on site" as the "areal extent of contamination and all suitable areas in the very close proximity to the contamination *necessary for implementation of the response action*" (emphasis supplied).

As bulleted below, there is no soil or groundwater contamination on the Outlying Parcels. The Outlying Parcels were never used or operated as part of the Lawrence Aviation Facility. Significantly, the Lawrence Aviation Facility is owned by a different entity then the Outlying Parcels. Most significantly, EPA is not proposing to undertake any response action on the Outlying Parcels. Indeed, as set forth below, there is no support for a conclusion that a release of hazardous substances occurred on the Outlying Parcels as supported by the following findings in the RI and PRAP:

- Regulatory standard exceedences in soil samples taken from the Outlying Parcels only indicate the presence of Metals. The RI and PRAP concluded that the Metals have been documented to be naturally occurring and not related to prior operations at he LAI site. No exceedences for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Polychlorinated Biphenyls (PCBs) or Pesticides were identified in any of the soil samples from the Outlying Parcels – PRAP Page 3. Therefore, based on this information, the LAI Facility has not adversely impacted the environmental quality of the Outlying Parcels.

- As documented in the RI and PRAP (Page 5 – PRAP), the only reported future cancer risk associated with the Outlying Parcels is documented to be limited to the Trichloroethene (TCE) groundwater plume. However, based on the RI, the areal or vertical extent of the groundwater plume does not extend beneath the footprint of the Outlying Parcels. Therefore, the risk associated with the TCE plume should not exist.

In addition to the factual deficiencies to support inclusion of the Outlying Parcels in the definition of the LAI Site, legal basis is also lacking. A different party owns the LAI Facility then the owner of the non-impacted Outlying Parcels. Courts that have looked the issue of dividing a facility have almost uniformly looked at the history of the parcels to determine whether a non-contaminated property should be included in the definition of a facility, i.e., were the parcels operated as one facility or historically transferred on one deed. None of these factors apply here. As Judge Boggs stated in *United States v. Township of Brighton,* 153 F.3d 307,313 (6th Cir. 1998), "a facility should be defined at least in part by the bounds of the contamination". Judge Boggs further explained if an area can not be reasonable divided into multiple or functional parts, then the area should be defined as a single facility, even if it contains parts that are not contaminated. *Id* at 313. **Conversely, where property is reasonably and naturally divisible into contaminated and noncontaminated parts, a court can limit the facility to the contaminated portions of the property.** *Id (emphasis supplied).*

In this case, the Outlying Areas is easily divisible as it is not legally a part of the LAI Facility and is not contaminated. Indeed, no division would be necessary had EPA not described the Site so broadly.

Based on the above, we respectfully request that EPA redefine the Site to exclude the Outlying Parcels, de-list of the Outlying Parcel or take in other steps, which the EPA deems appropriate to exclude the Outlying Areas from its definition of the LAI Site.

Similarly, any purchaser of the Outlying Parcels is impacted by the EPA lien placed on the Outlying Parcels. The and is significantly less marketable, if it is marketable at all. Certainly banks may be unwilling to make loans for purchase or improvements on the land or will only do so at a very high cost. For many of the same reasons stated above, the lien was improperly placed on the Outlying Parcels. Section 107(l), 42 U.S.C. §9607(l) provides that a lien in favor of the United States arises on property that is "*subject to or affected by a removal or remedial action*". The plain facts are that the Outlying Parcels are not subject to any remedial or removal action. Moreover, the owner of the Lawrence Aviation Facility is LAI and the owner of the Outlying Parcel is someone other than LAI. The statue simply does not allow EPA to lien property, eliminating it from any marketable use, unless the statute specifically authorizes the lien. In this case, the lien is not authorized. To establish the liability of property in an *in rem* action under Section 107, 42 U.S.C. §9607, the United must show that (1) the property is owned by a person who is liable to the United States pursuant to Section 107(a)(1)-(4) of CERCLA and (2) the property is subject to or affected by removal or remedial action. *United States v. Glidden Company,* 3 F.Supp.2d 823 (N.D. Ohio, 1997). In the instant case, due to the difference in ownership of the LAI Facility and the Outlying Parcels and the lack of contamination or remedial action on the Outlying Parcels, the lien is invalid as to the Outlying Parcels. We, therefore, request that in addition to re-defining and or delisting the Outlying Parcels as a part of the LAI Site, that EPA also remove the lien form the Outlying Parcels.

LAI Facility and Proposed Pump and Treat Systems

The following comments relate to the proposed remedy recommended in the PRAP at 8.

- No VOCs were identified in any on-site soil at the LAI Site (including the outlying parcels). PRAP at 3. Therefore, there does not appear to be a source of VOCs on the LAI Site. This raises the question as to how the groundwater plume be attributed to the LAI Site without the identification of an on-site source. More importantly, it raises a question of whether further investigation should be undertaken to determine the source of the VOCs before implementation of any remedy.

- Evidence of contributor(s) to the groundwater plume is identified in the RI. This evidence includes the occurrence of Methyl tertiary-butyl Ether (MTBE) in monitoring well MPW-1. Additionally, pesticides and SVOCs have been detected in groundwater beneath the LAI Site and down gradient of the LAI facility at concentrations exceeding regulatory standards. These Pesticides and SVOCs have not been attributed to the LAI Facility. Therefore, it appears that all potential upgradient contributor(s) have not been properly identified, investigated, and characterized. An additional upgradient well would further define the groundwater flow direction at and upgradient of the LAI Facility. Furthermore, the presence of pesticides and SVOCs could hinder the proposed remedial option due to the chemical makeup of these chemicals as compared with the VOCs.

- The RI and PRAP state that fluctuations in VOC levels in groundwater between the 2 rounds of data, especially beneath LAI, and the areal extent of the plume (at monitoring wells MPW-5 and MPW-6) suggest that the extent of the plume has not been fully defined. Therefore, selected remedial alternative(s) may not be appropriate.

- Under the NCP, EPA is required to evaluate each proposed remedy identified in the FS against a number of enumerated factors. Some of those factors include is short term and long term effectiveness and cost. In this case, EPA simply selected the most expensive remedy without considering the costs or long and short-term effectiveness. For the reasons set forth below, Alternative GW-3, Option 1 will provide substantially the same level of protectiveness and in the substantially the same time period for significantly less costs. We therefore recommend that EPA select this alternative for its final remedy.

- 2 separate "slugs" represent the extent of the groundwater plume. Therefore, the operation of a pump and treat system will remove each slug and then have nothing else to recover. This is especially true for the system at the Old Mill Pond (which has been designed for the maximum operation duration of 30 years), where the apparent size of the slug is smaller compared to the slug beneath the LAI Facility. Additionally, with vapor intrusion studies on-going and all residents connected to public water, the ingestion and inhalation pathways of exposure to groundwater have been eliminated. Furthermore, documented flow models of the recovery well at the pond (pumping at 150 gallons per minute) show that the system would capture the entire plume. As such, one pump and treat system at the Pond (Alternative GW-3/Option 1) should be sufficient to capture the entire plume.

END OF COMMENTS

Joan Blanthorn
<joanb631@verizon.net>
09/17/2006 09:15 PM

To Salvatore Badalamenti/R2/USEPA/US@EPA
cc
bcc
Subject Lawrence Aviation Port Jefferson NY

Hello
I am a Port Jefferson resident, living near Lawrence Aviation.
Is our tap water safe to drink ?

Thank you

Joan Blanthorn
38 Leeward Lane
Port Jefferson NY 11777

Sheila Pomann
<sdpomann@hotmail.com>

09/15/2006 06:29 PM

To Salvatore Badalamenti/R2/USEPA/US@EPA
cc
bcc
Subject Lawrence Aviation site

Apathy is more toxic than TCE. However, right now we are concerned with TCE. I sometimes wonder if EPA officials have families. Please please please! Do something to clean up the Port Jefferson polluted Lawrence Aviation area before more people become ill and die from chemical toxicity.
Sheila Pomann

Civic Association of the Setaukets
PO Box 2432
Setauket, NY 11733
Established May 1942
Serving Setauket, Stony Brook & Old Field

Date: July 25, 2006

Re: Superfund Proposal Plan - Lawrence Aviation

Dear Mr. Badalamenti:

The Civic Association of the Setaukets is in receipt of the recently issued Superfund Proposed Plan regarding the Lawrence Aviation site. As you know, this site has been a concern of our association for many years.

The remedies described as *Alternative S2* and *Alternative GW3-Option 3* are necessary for the long-term safety of our community and the environment, and are fully supported by our association. The plan's benefits to our residents, and to future generations, certainly justify the costs related to the cleanup of this Superfund site.

Please note that the construction of the Setauket-Port Jefferson Station Multi-Use Trail is to begin in the spring of 2007. It is hoped that the remediation plans will not delay or interfere in this long planned project.

Sincerely,

Herb Mones
President – Civic Association of the Setaukets

cc: Steve Englebright - NYS Assemblyman
Vivian Viloria-Fisher – Suffolk County Legislator
Steve Fiore-Rosenfeld - Town of Brookhaven Councilman
Subimal Chakraborti – Regional Director - NYSDOT

COUNTY OF SUFFOLK

STEVE LEVY
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF HEALTH SERVICES

BRIAN L. HARPER, M.D., M.P.H.
COMMISSIONER

August 16, 2006

Mr. Salvatore Badalamenti
U.S. Environmental Protection Agency
290 Broadway – 20th Floor
New York, NY 10007-1866

Re: LAWRENCE AVIATION INDUSTRIES, PORT JEFFERSON STATION

Dear Mr. Badalamenti:

On behalf of the Suffolk County Department of Health Services (SCDHS), I have reviewed the Proposed Plan dated July 2006 for the Lawrence Aviation Industries Site, Port Jefferson Station, New York, and offer the following comments:

- The SCDHS concurs that a pump-and-treat system is needed at Old Mill Pond to prevent contaminated groundwater from entering the pond, thereby minimizing the potential for human contact.

- The SCDHS also concurs that a pump-and-treat system with in-situ chemical treatment at the LAI facility may reduce the time needed to reach groundwater quality objectives downgradient, including at Old Mill Pond.

- Alternative S2 will remove soils that may pose an ecological threat, and should be sufficient if the site is used for industrial/commercial purposes only; however, other contaminated soils may remain on site (e.g., in unsampled areas and below buildings) that would not be compatible with residential use.

- The SCDHS questions whether the current owner can be forced to file a restrictive covenant on the property that would limit its use to commercial and/or industrial activities only; this would effectively make the property unusable should the Town of Brookhaven rezone the property to residential.

DIVISION OF ENVIRONMENTAL QUALITY • 360 YAPHANK AVE., SUITE 1C • YAPHANK, NY 11980
OFFICE OF WATER RESOURCES
PHONE (631) 852-5810 FAX (631) 852-5787

The SCDHS suggests that the USEPA clearly outline what work would be required to evaluate and remediate onsite soils in the event that the property is used for residential purposes. This is a significant concern, since interest in using the site for residential purposes has already been expressed by at least one developer.

If you have any questions concerning these comments, or would like to discuss them further, please contact me at (631) 852-5772.

Very truly yours,

Sy F. Robbins, C.P.G., Acting Supervisor
Bureau of Groundwater Resources

Cc: Brian L. Harper, M.D., M.P.H., Commissioner, SCDHS
Vito Minei, Director, Div.of Env. Quality, SCDHS
Michael Deering, Commissioner, SCDEE
Steve Scharf, NYSDEC
Deanna Ripstein, NYSDOH

August 16, 2006
104 Longfellow Lane
Port Jefferson, New York 11777

United States Environmental Protection Agency
290 Broadway
New York, New York 10007-1866

Attn: Angela Carpenter

Dear Ms. Carpenter:

I attended the public hearing held at the Port Jefferson High School on August 1st, 2006 and wanted to write you and say thanks for greeting me when I arrived and for answering my questions and addressing several of my concerns.

Although much of the reports presented were technical in nature , I quickly realized that there has been a lack of cooperation on the part of Lawrence Aviation for the past thirty odd years.

It must also be noted that from 1970 to the year 2000 the people who held the public trust and who were responsible for following through did not respond to this horrendous abuse of the land by Lawrence Aviation.

My husband and I took title to our new home at 104 Longfellow Lane, Port Jefferson, New York January 1966. Now in 2006 I have learned that it may be another thirty years to clean up the damage.

Needless to say, that this 80 year old widow will not be around when the job is done. Perhaps you too will move on and never see its completion. I will say, however, that after attending the public hearing and glancing at some of the material at the library there seems to be a light at the end of the tunnel. Let us hope that future generations will benefit by the action the EPA is now taking. (Hopefully you are all able to speed it up a little.)

Very truly yours,

Alice Edberg

Alice Edberg

P.S. Just wanted to personalize this whole issue a bit. It's unbelievable that it has taken so many years to get to this point.

Comments on Proposed Plan
Lawrence Aviation Site
August 7, 2006

1. Based upon the inferred lines on the western and eastern edges of the plume and the downtown area, it appears that the plume is not well defined. It is believed that additional monitoring wells are required to better delineate the plume.

2. I support Alternative S2 to remediate the PCB soils at the LAI site and Alternative GW3 – Option 3 to remediate the source of the plume and the downgradient portion of the plume. What groundwater treatment methodology was assumed (air stripping or liquid-phase granular activated carbon) to determine the estimated project costs? If air stripping is used, will the off-gas be treated with carbon or cat-ox?

3. The Village is currently applying for a grant to restore Old Mill Creek. How will the EPA's remedial efforts affect restoration work in the creek? What will be the risk to workers performing work in the creek? Based upon the creek sediment data, how will the dredged sediments be classified for disposal?

Brian M. McCaffrey
137 Windward Drive
Port Jefferson, NY 11777

INCORPORATED
VILLAGE OF PORT JEFFERSON

Michael Lee
Mayor

Robert J. Juliano
Administrator/Clerk

Trustees
Joseph Erland
Harry Faulknor
Brian Harty
Barbara Ransome

August 15, 2006

Mr. Sal Badalamenti, Remedial Project Manager
Eastern New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 20th floor
New York, N.Y. 10007-1866

Re: Lawrence Aviation Industries - Superfund Site

Dear Mr. Badalamenti:

The Village of Port Jefferson hereby submits its comments on the Remedial Investigation Report (RI), Feasibility Study (FS) and the Proposed Plan, all issued in the June/July, 2006 time period. Our village unfortunately lies directly in the path of the contaminated groundwater plume that flows from underneath LAI northward to the Old Mill Pond and Creek and then into Port Jefferson Harbor. A number of residential wells were contaminated and those people hooked up to public water over the years. We have been living with this contamination problem for over 30 years. While we are disappointed that it has taken this long for these environmental issues to be addressed, we are pleased that the EPA seems poised to proceed with a realistic and appropriate cleanup plan. We encourage an expeditious design phase, including addressing what we believe are shortcomings in the RI.

We should say at the outset that communications between the Village and EPA have been excellent in recent years and we are in agreement on the proposed cleanup remedy. The sub slab and indoor air testing performed in buildings over the plume went a long way to easing fears of imminent health concerns. The commitments made by EPA at the August 1 Public Meeting to re-test the high school, a number of residences (including those that requested testing that night) and the waters and air space above Old Mill Pond and Creek is a good next step. Testing at the Pond and Creek should be done in warm weather as compared to the planned indoor testing during the winter heating season.

The following constitutes specific comments from the Village:

1. The multi-point wells installed by EPA to delineate the plume did not provide sufficient data to map the extent of contamination north from the Pond and Creek to the harbor. More test wells need to be installed where your own maps on Figure 1-24 and 1-24A show question marks (????).As you are aware, there are always projects proposed in this active Village. Some of these projects are already impacted by the uncertainty of defining the contamination levels and depths of TCE and PCE in this area.
2. The eastern extent of the plume, as shown in Figures 1-24b and 1-24A, maps the apparent edge of the plume running from Sheep Pasture road north (over 4,000 feet) using MPW-08 and MPW-06 only. This is not a reasonable extrapolation from limited data.
3. We have a similar comment on the western extent of the plume as you come into the Village. The map (dotted line) relies on MPW-05, northward over 2200 feet ending in question marks (???) on your maps. One and preferably two wells should be installed on this western side. The concern in points 1,2 and 3 here is that there could be a "fanning" of the plume as it approached the downtown area of the Village. We do not believe the health and safety of our residents can be protected without additional test wells.
4. The plan to remove soils at LAI contaminated with metals such as cadmium, chromium, titanium, zinc, arsenic, mercury and lead is commendable.
5. The EPA needs to address all the cesspools at the LAI site, test them and cleanup those found to be contaminated. If source or "hot spots" are not fully explored then contaminants will continue to feed the plume.
6. Provide additional soils testing to assure no pockets of TCE or PCE remain on the LAI site.
7. Move quickly to cleanup soils contaminated with PCB's from leaking transformers.
8. As previously stated, we find the proposed pump and treat plan for LAI and the Pond to be acceptable. What we find unacceptable is the lack of any plans to cleanup the sediments in the Creek and Pond, which are contaminated with VOC's.
9. We would like to be included in your design of the groundwater extraction and treatment system at the Pond. The building should have some architectural details and fit as best as it can into the area.

In summary, we encourage the EPA to move swiftly to design the cleanup system and to come back to the Village to discuss the proposed chemical injection process for LAI. We understand that injecting oxidants into the groundwater is intended to accelerate the breakdown of such VOC's as PCE and TCE. As you heard during the meeting on August 1, residents have concerns that the injection of chemicals could make the situation worse. Your presentation was vague on the chemical of choice.

Thank you for considering this input from the Village of Port Jefferson. We trust that our concerns and comments will be incorporated into the Record of Decision.

Sincerely,

Michael Lee
Mayor
Inc. Village of Port Jefferson

Appendix VI

Transportation and Cost Details

Table 12
Alternative GW3: Groundwater Extraction and Treatment
Cost Estimate Summary
Lawrence Aviation Industries Site
Port Jefferson Station, New York

Item No.	Item Description	Option 3
CAPITAL COSTS		
Construction Costs		
1.	Civil Survey	$ 50,000
2.	Mobilization/Demobilization	$ 93,000
3.	Groundwater Pump and Treat System	$ 2,752,578
4.	Enhancement via In situ Chemical Oxidation	$ 3,301,000
5.	Construction Management	$ 851,000
	Subtotal Costs	**$ 7,047,578**
	General Contractor Fee (10% construction)	$ 704,758
	Design Engineering	$ 600,000
	Pre-design Investigation	$ 1,000,000
	Treatability Study	$ 250,000
	Resident Engineering/Inspection	$ 350,000
	Contingency (20% of the project cost)	$ 1,409,516
	TOTAL CAPITAL COSTS	**$ 11,361,851**
OPERATION & MAINTENANCE (O&M) COSTS		
Annual O&M Costs		
6.	Groundwater (GW) Treatment Plant O&M	$ 885,347
7.	Long-term Monitoring (Annual GW Sampling)	$ 139,245
	TOTAL O&M COSTS	**$ 1,024,592**
PRESENT WORTH OF 30 YEAR COSTS		
8.	Total Capital Costs	$ 11,361,851
9.	O&M Costs (30 year duration)	$ 10,318,820
10.	Long-term Monitoring Cost (30 year duration) *	$ 1,727,897
	TOTAL PRESENT WORTH OF COSTS	**$ 23,400,000**

Notes:
Option 1: Install a pump-and-treat system near Old Mill Pond
Option 2: Install a pump-and-treat system each at the LAI facility and near Old M
Option 3: Install a pump-and-treat system each at LAI facility and near Old Mill Pond and enhance the treatment of the high concentration area at the

* Under Option 3, the treatment system at Old Mill Pond will be operated for 30 years, while the treatment system at the facility will be operated for 20 years.