Department of Environmental Conservation

**Division of Environmental Remediation**

# Environmental Restoration
# Record of Decision
## 400 Block of Main Street Site
## City of Poughkeepsie, Dutchess County
## Site Number B-00148-3

**March 2000**

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

# DECLARATION STATEMENT
# ENVIRONMENTAL RESTORATION RECORD OF DECISION

400 Block of Main Street Environmental Restoration Site
City of Poughkeepsie, Dutchess County, New York
Site No. B-00148-3

## Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the 400 Block of Main Street Environmental Restoration Site which was chosen in accordance with the New York State Environmental Conservation Law.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the 400 Block of Main Street Environmental Restoration Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

## Assessment of the Site

Actual or threatened release of hazardous substances and petroleum products from this site, if not addressed by implementing the remedy selected in this ROD, presents a current or potential threat to public health and the environment.

## Description of Selected Remedy

Based on the results of the Site Investigation (SI) for the 400 Block of Main Street and the criteria identified for evaluation of alternatives, the NYSDEC has selected limited excavation and a soil cover. The components of the remedy are as follows:

- Excavation and off-site disposal of petroleum and mercury-contaminated soils located near the former Lomasney Building loading dock.
- Excavation and off-site disposal of mercury and PCB-contaminated soils from beneath the Lomasney Building.
- Placement of a soil, concrete or asphalt cover over the remaining site soils that contain low levels of contaminants.
- Asbestos abatement in, and demolition of, buildings located at the site.

- Implementation of institutional controls to control activities that could impact the cover layer or create exposures to the fill beneath it.

## New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

## Declaration

The selected remedy is protective of human health and the environment, complies with State and federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective.

Date 3/27/2000

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

# TABLE OF CONTENTS

# Environmental Restoration
# RECORD OF DECISION

**400 Block of Main Street Site**
**City of Poughkeepsie, Dutchess County**
**Site No. B-00148-3**
**February 2000**

## SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health has selected this remedy to address the threat to human health and/or the environment created by the presence of hazardous substances at the Poughkeepsie 400 Block Brownfield project.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Under the Environmental Restoration (Brownfields) Program, the State may provide a grant to the City of Poughkeepsie to reimburse up to 75 percent of the eligible costs for site remediation activities. Once remediated the property can then be reused.

The Poughkeepsie 400 Block Site is a 3.04 acre property located in downtown Poughkeepsie. The site comprises several parcels along the 400 Block of Main Street and the 300 Block of Mill Street, as shown in Figure 1. As more fully described in Sections 3 and 4 of this document, past industrial activities have resulted in the disposal of a number of hazardous substances, including fuel oil, polychlorinated biphenyls (PCBs), and mercury at the site. These disposal activities have resulted in the following threats to the public health and/or the environment:

- A threat to human health associated with potential future exposure to contaminated soils.
- A threat to human health associated with asbestos-containing materials within site structures.

In order to eliminate or mitigate the threats to the public health and/or the environment that the hazardous substances disposed at the 400 Block of Main Street Brownfield Site have caused, the following remedy was selected to allow for residential use of the site:

- Excavation and off-site disposal of petroleum and mercury-contaminated soils located near the former Lomasney Building loading dock.
- Excavation and off-site disposal of mercury and PCB-contaminated soils from beneath the Lomasney Building.

- Placement of a soil, concrete or asphalt cover over the remaining site soils that contain low levels of contaminants.

- Asbestos abatement in, and demolition of, buildings located at the site.

- Implementation of institutional controls to control activities that could impact the cover layer or create exposures to the fill beneath it.

The selected remedy, discussed in detail in Section 8 of this document, is intended to attain the remediation goals selected for this site in Section 6 of this Record of Decision (ROD) in conformity with applicable Standards, Criteria, and Guidance (SCGs).

## SECTION 2: SITE LOCATION AND DESCRIPTION

The Poughkeepsie 400 Block Brownfield Site is a 3.04 acre parcel located near the intersection of Main and Mill Streets in downtown Poughkeepsie. The site consists of properties located at 413-441 Main Street and 366, 368, 370 and 372 Mill Street, as shown on Figure 1. These properties were formerly used for retail, commercial, residential and industrial purposes, but are presently abandoned. Portions of the buildings along Main Street have collapsed. The central portion of the site is an unpaved parking area overgrown with trees and grass. The site is bordered by commercial and residential properties.

The site is served by storm sewers, sanitary sewers and public water. No surface water is present at the site. Fall Kill Creek is located approximately 200 feet north of the site, and the Hudson River is located approximately 1 mile west of the site.

## SECTION 3: SITE HISTORY

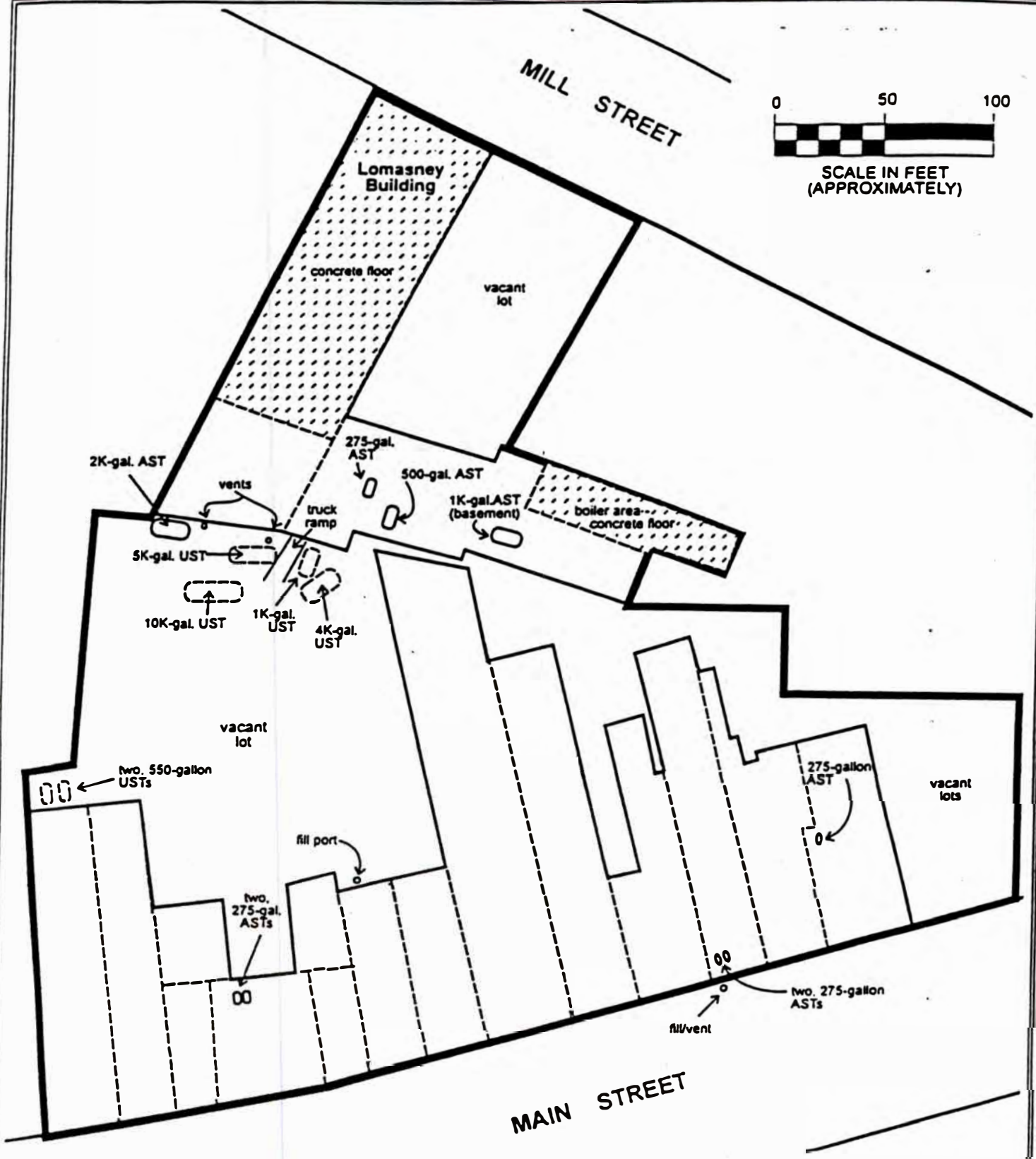
### 3.1: Operational/Disposal History

The properties comprising the site have a history of commercial and industrial uses dating prior to 1900. Manufacturing uses prior to World War II include the production of carriage mountings, fur hats, clothing, sheet metal and brass. During the period 1950 - 1980, portions of the site were used for automotive repair, a machine shop, wholesale electrical supply, clothing manufacture, and residences.

In 1979, several parcels along Mill Street were acquired by Lomasney Combustion Inc. for the installation and service of oil-fired boilers. This operation included the storage and use of fuel oils, machine lubricants, hydraulic oils, and, possibly, waste oils. This operation may have also been associated with the handling of mercury switches and thermostats, as well as other electrical equipment containing PCBs. These activities continued until 1986.

In 1998 the site was acquired by the City of Poughkeepsie for construction of multi-family homes.

### 3.2: Environmental Restoration History




All feature locations are approximate.
Map based on Sanborn Fire Insurance Company Map, dated 1990.

# Tank Location Map

"400 Block"
Main Street, City of Poughkeepsie
Dutchess County, New York

N

subject property border

AST (aboveground storage tank)

UST (underground storage tank)

| |
|---|
| ESI File: CP9920.20 |
| August 1999 |
| Scale as shown |
| Appendix A |

A preliminary environmental site assessment was conducted on behalf of the City of Poughkeepsie in 1998. This assessment identified the presence of unregistered above-ground and underground petroleum storage tanks, and the potential for asbestos- and lead- containing building materials. Test pits and soil borings confirmed the presence of subsurface petroleum contamination in the area of underground storage tanks, and identified lead, cadmium, PCBs and Polycyclic Aromatic Hydrocarbons (PAHs) in the soil floor of the Lomasney Building. The Environmental Assessment Report was finalized in January 1999.

## SECTION 4: SITE CONTAMINATION

To determine the nature and extent of any contamination by hazardous substances of this environmental restoration site, the City of Poughkeepsie has recently completed a Site Investigation (SI) Report. Copies of the SI and Environmental Assessment Reports are available for review at the document repositories.

### 4.1: Summary of the Site Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site.

The SI was conducted in one phase between April and June 1999. A report entitled "Summary of Subsurface Investigation" has been prepared which describes the field activities and findings of the SI in detail. The SI included the following activities:

- Geophysical survey to determine the possible presence of unknown Underground Storage Tanks (USTs).
- Excavation of test pits to locate possible underground tanks or drainage structures.
- Installation of soil borings and monitoring wells for chemical analysis of soils and groundwater.

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the Site Investigation analytical data were compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the Poughkeepsie 400 Block site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of New York State Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 provides soil cleanup objectives for the protection of groundwater, background conditions and health-based exposure scenarios. In addition, for soils, background concentration levels can be considered for certain categories of contaminants.

Based on the site investigation results, in comparison to the SCGs and potential public health and environmental exposure routes, certain site soils require remediation. These are summarized below. More complete information can be found in the SI Report.

Chemical concentrations are reported in parts per billion (ppb), and parts per million (ppm). For comparison purposes, where applicable, SCGs are provided for each medium.

### 4.1.1: Site Geology and Hydrogeology

The upper layer of site soils was found to be urban fill consisting of sand, silt and cobbles, but also including cinders, coal and brick fragments. At depths ranging from 4 to 6 feet, a thin layer of organic soil was encountered, followed by a layer of silt containing varying amounts of clay and sand. Shale bedrock was encountered at depths ranging from 13 to 17 feet beneath the site. Groundwater was generally found at depths ranging from 3 to 6 feet beneath the site, flowing in a westerly direction toward the Hudson River.

### 4.1.2: Nature of Contamination

As described in the SI and Environmental Assessment Reports, many soil and groundwater samples were collected at the site to characterize the nature and extent of contamination.

Soils in the courtyard area were found to be contaminated with petroleum-related volatile organic contaminants (VOCs) and semivolatile organic contaminants (SVOCs). The VOCs were benzene, ethylbenzene, and xylene, which are common fuel-related contaminants. The SVOCs found at the site were polycyclic aromatic hydrocarbons (PAHs) such as benzo(a)anthracene, and benzo(a)pyrene, which are associated with petroleum, coal and ash. PAHs are a group of over 100 different chemicals which are formed during incomplete combustion of coal, oil and other organic substances.

Other contaminants found in soils in the courtyard and beneath the Lomasney Building are the metals lead, mercury and arsenic. Mercury contamination may be related to the maintenance of boiler systems in which mercury switches and thermostats were used. Low levels of mercury, lead and arsenic may also be associated with urban fill, particularly fill containing ash.

PCBs, specifically Aroclor 1254, were found in one soil sample taken during the site investigation and in two soil samples beneath the Lomasney Building during the 1998 Site assessment. PCBs are a group of 209 different synthetic organic chemicals that were used in industry due to their resistance to heat and electrical insulating properties. PCBs have generally low solubility in water, relatively low volatility in air, and tend to adsorb to oils, fats and carbon-rich materials, if available. In the environment, PCBs are relatively persistent, and are degraded only under certain conditions. PCBs bioaccumulate in animals, and concentrations in portions of the food chain can be 100,000 times higher than the levels found elsewhere in the environment.

### 4.1.3: Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in soil and groundwater, and compares the data with the Standards, Criteria, and Guidance values (SCGs) for the site. The following are the media which were investigated and a summary of the findings of the investigation.

## Soil

Volatile organic contaminants (VOCs) were found in three soil borings, B-6, B-7 and B-8, all located in the courtyard area where several underground petroleum storage tanks were located. At these locations, the concentration of total VOCs ranges from 49.5 ppm to 272 ppm, as compared to the SCG of 10 ppm for total VOCs. The primary constituents of this contamination are ethylbenzene, trimethylbenzenes, and xylenes.

The highest levels of lead and mercury, 4,130 ppm and 71.8 ppm, respectively, were found in soil boring B-7, located at the foot of the truck ramp leading to the Lomasney Building, at a depth of 2 to 4 feet. The SCGs for lead and mercury are 400 ppm and 0.1 ppm, respectively. Elevated levels of lead and mercury were also found in 2 surface soil samples elsewhere in the courtyard, and in 2 locations beneath the Lomasney Building. At these 4 locations, lead concentrations ranged from 440 ppm to 1,420 ppm and mercury concentrations ranged from 1.5 ppm to 16.8 ppm. Arsenic was also found in soil at several locations where the concentration exceeded the SCG of 7.5 ppm, with a maximum level of 20 ppm.

During the 1998 site assessment, PCBs were found in 2 surface soil samples collected beneath the Lomasney Building. Concentrations of Aroclor 1254 in those samples were 1.8 ppm and 18 ppm, compared to the SCG of 1 ppm for total PCBs. No PCB detections exceeding the 1 ppm level were detected during the Site Investigation.

## Groundwater

Volatile organic contaminants, arsenic and barium were found in well MW-2R, which is located in the area of soil contamination associated with the underground oil storage tanks. At this location, benzene was found at 92 ppb, compared to the SCG of 0.7 ppb. Toluene and xylenes were found at 50 and 94 ppb, respectively, compared to their SCG of 5 ppb each. These contaminants were not detected in any other site monitoring wells.

Lead was found in unfiltered samples from four site wells, with the highest levels in wells MW-5 (508 ppb) and MW-2R (214 ppb), as compared to the SCG of 50 ppb. Lead concentrations did not exceed the SCG in filtered samples from any wells, indicating that it is present in particulate, not dissolved, form. Barium and arsenic were found to be slightly above their SCGs in unfiltered samples taken from well MW-2R, in the area of the underground storage tanks.

## Asbestos Containing Material

Asbestos containing materials (ACMs) are those materials known to contain more than 1% asbestos. ACMs have been confirmed in the structures located at 366 Mill Street and 435 Main Street, and suspected ACMs have been observed in other structures. These materials include floor tiles, pipe insulation, ceiling panels and roofing materials.

## 4.2: Interim Remedial Measures

An Interim Remedial Measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the SI.

In March 1999, six underground petroleum storage tanks, one above ground storage tank, and one dry well were excavated and removed from the courtyard area of the site. These tanks ranged in size from 550 gallons to 10,000 gallons. Four of the tanks had holes in them, and approximately 40 cubic yards of visibly stained soil was excavated with the tanks for disposal off site.

Following the tank excavation, a Ground Penetrating Radar (GPR) survey was performed to determine the possible presence of additional subsurface structures. This led to the discovery of a curtain drain at the base of the truck ramp leading to the Lomasney Building. The drain and some surrounding soils were removed, and the remaining soils were targeted for sampling during the site investigation (see Section 4.1.3)

In November 1999, the U.S. Environmental Protection Agency (USEPA) performed an emergency removal action at the former Lomasney Combustion building. Free asbestos material in the upper floors and asbestos-containing pipe wrap in the basement area were removed, along with liquid wastes in tanks, pails and drums in the basement area.

## 4.3: Summary of Human Exposure Pathways

This section describes the types of human exposures that may present added health risks to persons at or around the site.

An exposure pathway is the manner by which an individual may come in contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Pathways which are known to or may exist at the site include:

- Skin contact with contaminated soils in the courtyard area and with soils that comprise the basement floor of the Lomasney Building. Because access to these areas is currently restricted by fencing and a locked gate, this is currently a route of exposure only for trespassers to the site. However, due to plans for residential development, this is a possible future exposure route for construction workers and residents of the site.

- Ingestion of contaminated soil. As above, this is currently an exposure route for trespassers to the site, but is a potential future route of exposure for workers and residents.

- Inhalation of contaminated soil. For contaminants found in surface soils in the courtyard, where dusts can be transported by wind, this is currently a completed exposure pathway for off-site receptors. For subsurface soils and contaminants found beneath the Lomasney Building, this is a potential future exposure pathway if those soils should become exposed.

- Skin contact and inhalation of contaminated groundwater in the courtyard area, especially during future construction activities.

## 4.4: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures and ecological risks which may be presented by the site. No significant pathways for environmental exposure have been identified at the site. The site is in an industrial / commercial area and is almost completely covered by buildings or pavement. The on-site contamination is confined to surface and subsurface soils, groundwater and the structures.

Groundwater contamination at the site is limited to a small portion of the courtyard area where the underground storage tanks were located. No evidence exists of groundwater contamination migration beyond the site boundary. Rainfall on the site is collected in the City 's storm sewer system, where it is conveyed to a treatment plant prior to discharge to the Hudson River. Therefore, the discharge of site contaminants to surface water is unlikely.

## SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past owners and operators, waste generators, and haulers.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the State to recover State response costs should PRPs be identified. The City of Poughkeepsie will assist the State in its' efforts by providing all information to the State which identifies PRPs. The City will also not enter into any agreement regarding response costs without the approval of the NYSDEC.

## SECTION 6: SUMMARY OF THE REMEDIATION GOALS AND FUTURE USE OF THE SITE

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all Standards, Criteria, and Guidance (SCGs) and be protective of human health and the environment. At a minimum, the remedy selected must eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous substance disposed at the site through the proper application of scientific and engineering principles.

The proposed future use for the Poughkeepsie 400 Block is residential. The goals selected for this site are:

- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Reduce, control, or eliminate to the extent practicable the contamination present within the soils/waste on site.
- Mitigate the impacts of contaminated groundwater to the environment.

- Provide for attainment of SCGs for groundwater quality at the limits of the site, to the extent practicable.

## SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost effective and comply with other statutory requirements. Potential remedial alternatives for the Poughkeepsie 400 Block Site have been identified, screened and evaluated. A summary of the detailed analysis follows.

As presented below, the time to implement reflects only the time required to construct the remedy, and does not include the time required to design the remedy or procure contracts for design and construction. The time required to perform asbestos abatement and building demolition is included in these estimates.

### 7.1: Description of Remedial Alternatives

The potential remedies are intended to address the contaminated soils and groundwater at the site.

A key component of the redevelopment of this parcel is the removal of the dilapidated buildings. With the exception of the no further action alternative (Alternative 1), building demolition and asbestos abatement are baseline costs regardless of the alternative proposed to address hazardous substances. The asbestos abatement and building demolition are estimated to cost approximately $723,500. Another baseline cost associated with building demolition is the removal of above-ground oil storage tanks and small quantities of chemicals from within the buildings. This environmental remediation cost is estimated to add another $34,600 to Alternatives 2 through 5.

#### Alternative 1
#### No Further Action

This alternative recognizes remediation of the site conducted under the previously completed IRM. Only continued groundwater monitoring would be necessary to evaluate the effectiveness of the remediation completed under the IRM.

This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

| | |
|---|---|
| Present Worth: | $45,000 |
| Capital Cost: | $ 0 |
| Annual Monitoring (30 years): | $2,900 |
| Time to Implement | 1 month |

#### Alternative 2
#### Low Permeability or Equivalent Cap

Under this alternative, areas where contaminant concentrations exceed SCGs would be covered by a low permeability cap consisting of a Geosynthetic Clay Layer (GCL) and 2 feet of soil, or

other equivalent barrier. A GCL is a manufactured soil blanket consisting of clay encapsulated between layers of fabric that are stitched together. This material is less than an inch thick, and is unrolled over a smooth foundation layer of soil to form a barrier that is equivalent to 12" of low permeability soil.

This cover would protect public health by preventing direct contact, inhalation and ingestion of contaminated soils. The GCL would minimize the infiltration of rainwater through contaminated soils and the associated impact on groundwater. Based on the conceptual development plan approved by the City, certain areas of the site are likely to be covered with building foundations and pavement. Because these would be as effective as two feet of soil in preventing exposure to contaminants and groundwater impacts, they are considered to be equivalent barriers, provided that they are properly maintained. This cover would be integrated into the site redevelopment plans and would be implemented once the major construction activities have been completed, so that the cover would not be disturbed during these activities.

Because contaminants would remain at the site beneath the barrier, institutional controls would be required to ensure that the cover is maintained, and that subsurface soils would not be brought to the surface. A covenant on the property deed, or similar instrument would be secured that requires NYSDEC and NYSDOH approvals for any subsurface activities, and for maintenance of the cover. Groundwater monitoring, estimated to be annual monitoring for a period of five years, and maintenance of the soil cover would also be required.

| | |
|---|---|
| Present Worth: | $ 924,100 |
| Capital Cost: | $ 864,100 |
| Annual Monitoring & Maintenance: | $ 3,900 |
| Time to Implement | 1 year |

**Alternative 3**
**Limited Excavation And Soil Cover**

Under this alternative, certain areas of contaminated soils would be excavated and disposed off-site. These areas would be where soil concentrations of total volatile organic contaminants (TVOCs) exceed 10 ppm, mercury concentrations exceed 2.5 ppm, and PCB concentrations exceed 10 ppm. The excavation action level of 2.5 ppm mercury is based on the level of mercury found near the site entrance, which is considered to be the site background location, and at other sampling locations at the site that are not affected by site operations. These locations appear to be impacted by contamination associated with general urban fill, with levels of lead, mercury and arsenic that exceed SCGs. The 10 ppm action level for TVOCs would also achieve SCGs for every individual VOC. Although the cleanup guideline is 1 ppm for PCBs in surface soils, existing surface soils would be covered with soil or an equivalent barrier, as described below, and therefore only the subsurface soil cleanup guideline would be relevant. These action levels would result in the excavation of approximately 400 cubic yards of material.

The remaining soils and backfilled excavations would be covered with a soil or equivalent barrier to prevent exposure to residual low-level contamination. This cover would not be a low permeability cap as described in Alternative 2, but rather a cover of two feet of soil or an equivalent barrier to prevent direct exposure. A low permeability cap would not be required

because the source of site groundwater contamination would be removed by excavation. To enhance the effectiveness of the soil cover, a marker layer, consisting of a highly visible, non-biodegradable plastic mesh, would be placed over the contaminated fill before the cover is applied. This would alert future residents and workers of the bottom of the clean cover soil and the presence of low-level contaminated fill beneath it. This cover would be integrated into the site redevelopment plans and will be implemented according to a schedule that minimizes the potential disturbance of the cover during site development.

Because contaminants would remain at the site in concentrations exceeding the SCGs, institutional controls, groundwater monitoring, and maintenance, as described above, would also be required.

| | |
|---|---|
| Present Worth: | $978,100 |
| Capital Cost: | $ 918,100 |
| Annual Monitoring & Maintenance: | $ 3,900 |
| Time to Implement | 1 year |

**Alternative 4**
**Full Excavation**

Under this alternative, all soil or fill which exceeds an SCG for a contaminant would be excavated and removed from the site. Although all such exceedances have not been fully delineated, it is estimated that at least 12,000 cubic yards of material would have to be removed. This would correspond to excavation action levels of 0.1 ppm for mercury, 7.5 ppm for arsenic, and 400 ppm for lead, in addition to the PCB and TVOC cleanup guidelines identified in Alternative 3. This removal would be limited by the depth of the water table, which is present at an average of five feet below grade. These excavations would be backfilled with clean material.

Because no soil contaminants would remain that exceed SCGs, no soil cover or institutional controls would be necessary.

| | |
|---|---|
| Present Worth: | $ 2,396,000 |
| Capital Cost: | $ 2,396,000 |
| Annual Monitoring & Maintenance: | $ 0 |
| Time to Implement | 18 months |

**Alternative 5**
**Soil or Equivalent Cover and Groundwater Treatment**

This alternative would provide for groundwater treatment, in conjunction with a soil cover, to address soil and groundwater contamination at the site.

VOC contamination in the courtyard area would be remediated by a soil vapor extraction (SVE) and air sparging (AS) system. Soil vapor extraction (SVE) uses a blower attached to several wells to draw air through soils above the water table. This flow of air allows VOCs to evaporate from the soils and into air between soil particles. Contaminants are then drawn into the collection wells and treated prior to discharge. Air sparging is the process of injecting air into the saturated soils below the water table, which causes VOCs in the saturated soil to evaporate into the injected air.

The VOC-laden air is then collected in the vapor extraction system and treated prior to discharge. This technology would address only VOC contamination, and would not remediate metals or PAHs. To prevent possible exposure to metals and PAHs, a soil or equivalent cover would be placed over contaminated soils, as described in Alternative 3.

It is estimated that three years of operation would be required to remediate VOCs to their SCGs. The cost of this operation is included in the capital cost estimate. Because other contaminants would remain at the site in concentrations exceeding the SCGs, institutional controls and long term monitoring and maintenance would also be required.

| | |
|---|---|
| Present Worth: | $ 1,160,000 |
| Capital Cost: | $ 1,100,000 |
| Annual Monitoring &Maintenance: | $ 3,900 |
| Time to Implement | 36 months |

## 7.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of environmental restoration projects in New York State (6 NYCCR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion.

**The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.**

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

The primary SCGs for the site are groundwater quality standards and soil cleanup objectives. Soil cleanup objectives are established based on protecting human health from direct exposure, protecting groundwater quality from contaminant leaching, and for certain metals, background concentrations.

The No Further Action Alternative (Alternative 1) would not attain any SCGs. The soil capping alternative (Alternative 2) would not achieve the soil cleanup guidelines, but would meet the performance criteria for capping solid waste. Limited excavation and cover (Alternative 3) would achieve soil cleanup objectives in portions of the site, and is expected to achieve groundwater quality standards by removing the source of contamination that caused localized groundwater impacts. Alternative 4 (Full Excavation) would achieve both groundwater quality standards and soil cleanup objectives. Alternative 5 (Soil Cover and Groundwater Treatment) would achieve groundwater quality standards and soil cleanup objectives for VOCs, but would not attain soil objectives for metals and PAHs.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Alternative 1 (No Action) would not protect human health because the potential for contaminant exposure would continue to exist. Alternatives 2 (Low Permeability Cap), 3 (Limited Excavation and Soil Cover), 4 (Full Excavation) and 5 (Soil Cover and Groundwater Treatment) would equally protect human health by eliminating possible routes of exposure.

**The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.**

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

No Action (Alternative 1) would have the least adverse impact on the community and environment, and would require the least amount of time to implement. Alternatives 2 and 5 (Low Permeability Cap and Soil Cover with Groundwater Treatment) would have the next least degree of impacts because no excavation of contaminated soils would occur. Alternative 3 (Limited Excavation and Soil Cover) would have a somewhat greater degree of short term impact because about 400 cubic yards of contaminated soil would be excavated. Alternative 4 (Full Excavation) would have the greatest amount of short term impact, and the greatest potential for short-term exposure to contaminants.

Other than the No Action Alternative, Alternatives 2 and 3 would require the least amount of time (approximately 1 year) to implement, which includes building demolition. Full Excavation (Alternative 4) would require significantly more time (about 18 months) to implement. Alternative 5 would require the greatest amount of time (approximately 3 years) to install and operate the Soil Vapor Extraction system until SCGs are attained for VOCs.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Alternative 1 would provide the least degree of long term effectiveness. Alternatives 2, 3 and 5 would rely on a cap, soil cover or other barrier to prevent human contact with contaminants. As a result, some form of Institutional Controls would be necessary to ensure the integrity of the cover. These measures are effective and reliable in the long term, but they require monitoring. Of these, Alternatives 3 and 5 would have significantly lower residual risks because the highest levels of contaminants would be removed. Alternative 3 would provide better long term effectiveness because the highest levels of both metal and VOC contamination would be removed. Alternative 4 (Full Excavation) would provide the greatest long term effectiveness because all contaminants of concern would be removed.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the substances at the site.

No action would not provide any reduction in toxicity, mobility or volume of contamination. The cap and cover alternatives (Alternatives 2, 3 and 5) would reduce the mobility of contaminants, but not the toxicity or volume. Of these, Alternative 5 would provide a reduction in volume of VOCs, and Alternative 3 would provide a reduction in volume of metals and VOCs. Alternative 4 would provide the greatest reduction in volume and mobility of all contaminants because they would be removed from the property and placed in a secure landfill.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

All of the alternatives under consideration use standard construction techniques and the associated materials and approvals should be readily available. Alternative 1 (No Action) would be the easiest alternative to implement. Alternatives 2, 3, and 5 would be somewhat more difficult to construct, and would require implementation of administrative measures to maintain the integrity of the cap or cover. Alternative 4 (Full Excavation) would be the most difficult to construct, but would not require the implementation of institutional controls.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 2.

8. Community Acceptance - Concerns of the community regarding the SI report and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised.

In general the public comments received were supportive of the selected remedy.

Several comments were received, however, pertaining to the integration of the site remedy with the approved development plan for the site. The specific development plans were provided to the NYSDEC and coordination meetings were held during the comment period with the City of Poughkeepsie and the site developer. Because the development plans have been finalized, specific coordination issues have been identified that are incorporated in this ROD (see Section 8.1 below) and discussed in the Responsiveness Summary. Other coordination issues cannot be addressed until the remedial design proceeds, and so are not addressed in this ROD.

## SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the results of the SI, and the evaluation presented in Section 7, the NYSDEC is selecting Alternative 3, Soil Cover with Limited Excavation, as the remedy for this site.

This selection is based on the evaluation of the five alternatives developed for this site and the primary balancing criteria. A soil cover with limited excavation will remove the highest levels of soil contaminants from the site, and will leave low levels of contamination that are associated with background levels of urban fill. The risks associated with this contamination will be effectively and reliably managed with a soil cover and institutional controls. The source of localized groundwater contamination will be removed, and groundwater quality standards are expected to be achieved.

With the exception of the no action alternative, each of the alternatives would protect public health. The low permeability cap (Alternative 2) would not attain any soil cleanup objectives, and groundwater quality standards would require an unreasonably long time frame to be achieved.

A soil cover and groundwater treatment (Alternative 5) is more costly than the recommended alternative, but would provide less SCG compliance because the soil cover with limited excavation will remove more metal contaminants.

Although full excavation (Alternative 4) would provide the greatest compliance with soil cleanup guidelines and best long-term effectiveness, it would create significantly more short term impacts, and is more difficult and costly to implement. Because the soil cover with limited excavation (Alternative 3) will remove a high proportion of contaminants from the site, the added benefit of full excavation would be minimal.

## 8.1 Documentation of Significant Changes

The primary change from the PRAP involves the timing of the remediation with respect to development. The PRAP stated that the soil cover would be installed after development activities were complete, to avoid disturbance of the cover during construction. Based on public comment, this has been changed to state that the cover will be coordinated with the site redevelopment plans and will be implemented according to a schedule that protects the health of site residents and minimizes the potential disturbance of the cover during site development. This change recognizes that some grading of the existing fill may be performed in connection with the soil removal operation to reduce the amount of backfill required and to avoid extensive regrading of contaminated fill by the developer. Because the specific final grades, foundation layouts, paved areas and landscaped areas are known, the regrading and installation of soil cover can be performed in certain areas prior to site development.

After re-evaluation of the SI data, the mercury cleanup goal has been changed from 2.1 ppm to 2.5 ppm. Although the background sample contained 2.1 ppm of mercury, three other site samples (HB-4, MW-5 and B-2) contained levels between 2.1 ppm and 2.5 ppm. These locations did not exceed soil cleanup guidelines for VOCs or lead, suggesting that the mercury levels are characteristic of urban fill. This 20% difference in the mercury cleanup guideline from the PRAP value is also within the generally accepted range of analytical precision for environmental samples, according to the USEPA (Assessment and Remediation of Contaminated Sediments, EPA-905-B94-002)

The elements of the selected remedy are as follows:

- A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the SI will be resolved.

- Demolition of buildings located at the site. Abatement of asbestos as necessary, or in accordance with variances pursuant to applicable state and federal laws. Removal of any remaining wastes in drums, pails and aboveground tanks from buildings to be demolished.

- Excavation of soils in which soil concentrations of Total Volatile Organic Contaminants (TVOCs) exceed 10 ppm, mercury concentrations exceed 2.5 ppm, and PCB concentrations exceed 10 ppm in areas to be covered.

- Installation of a cover consisting of two feet of soil and a visual demarcation layer, or concrete or asphalt, that provides an effective barrier to contaminant exposure. This cover will be coordinated with the site redevelopment plans and will be implemented according to a schedule that protects the health of site residents and minimizes the potential disturbance of the cover during site development.

- Implementation of institutional controls, such as a covenant on the property deed(s), that will require the NYSDEC and NYSDOH to approve of activities that could impact the cover layer or create exposures to the fill beneath it.

- Since the remedy will result in untreated hazardous substances remaining at the site, a groundwater monitoring program will be instituted. This program will be sufficient to demonstrate the effectiveness of the selected remedy in achieving groundwater quality standards, and will be a component of the operation and maintenance plan for the site.

The estimated present worth cost to implement the remedy is $ 978,100. The cost to construct the remedy is estimated to be $918,100, of which $723,500 is associated with building demolition and asbestos abatement. The estimated average annual operation and maintenance cost for 30 years is $3,900.

## SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the 400 Block of Main Street environmental restoration process, a number of Citizen Participation activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.

- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

- In November 1999 a Fact Sheet was prepared which summarized the results of the Site Investigation, discussed the evaluation of alternatives and proposed remedy for the site, and

announced the public meeting and comment period. The Fact Sheet was distributed to the site mailing list and was placed in the document repositories.

- On December 7, 1999 a public meeting was held to present the Proposed Remedial Action Plan to the community and to receive comments on it. An opportunity for the public to provide written comments was initially provided between November 22, 1999 and January 7, 2000.

- In response to requests from the public, the comment period was extended to January 21, 2000. An announcement of this extension was mailed to the public contact list on January 7, 2000.

- In March 2000 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

## Table 1
## Nature and Extent of Contamination

| MEDIUM | CATEGORY | CONTAMINANT OF CONCERN | CONCENTRATION RANGE (ppb, except as noted) | FREQUENCY of Exceeding SCGs or Background | SCG or Background (ppb, except as noted) |
|---|---|---|---|---|---|
| Groundwater | Volatile Organic Compounds (VOCs) | Benzene | ND to 92 | 1 of 6 | 0.7 |
| | | Toluene | ND to 50 | 1 of 6 | 5.0 |
| | | Trimethylbenzene | ND to 10 | 1 of 6 | 5.0 |
| | | Xylenes (total) | ND to 94 | 1 of 6 | 5.0 |
| Groundwater (unfiltered) | Metals | Arsenic | ND to 31 | 1 of 6 | 25 |
| | | Barium | ND to 1,090 | 1 of 6 | 1,000 |
| | | Lead | ND to 508 | 4 of 6 | 50 |
| | | | | | |
| Soils | Volatile Organic Compounds (VOCs) | Benzene | ND to 1.7* | 1 of 20 | 0.060* |
| | | Ethylbenzene | ND to 39* | 3 of 20 | 5.5* |
| | | Xylenes (total) | ND to 118* | 3 of 20 | 1.2* |
| | | Total VOCs | ND to 272* | 3 of 20 | 10* |
| Soils | Semivolatile Organic Compounds (SVOCs) | Benzo(a)Anthracene | ND to 0.380* | 1 of 10 | 0.224* |
| | | Benzo(a)Pyrene | ND to 0.340* | 1 of 10 | 0.061* |
| Soils | Polychlorinated Biphenyls (PCBs) | Total PCBs | ND to 18* | 2 of 15 | 1.0* (surface) 10* (subsurface) |
| Soils | Inorganic Contaminants | Arsenic | ND to 20* | 15 of 23 | 7.5* |
| | | Cadmium | ND to 20* | 1 of 23 | 10* |
| | | Lead | ND to 4,130* | 9 of 23 | 400* |
| | | Mercury | ND to 71.8* | 13 of 23 | 0.100* |
| | | Selenium | ND to 2.6* | 1 of 23 | 2.0* |
| | | | | | |

*** Parts per million (ppm)**

**Table 2**
**Remedial Alternative Costs**

| Remedial Alternative | Capital Cost | Annual O&M | Total Present Worth |
|---|---|---|---|
| 1. No Action | $0 | $2,900 | $45,000 |
| 2. Soil or Equivalent Cover | $864,000 | $3,900 | $924,100 |
| 3. Soil Cover with Limited Excavation | $918,000 | $3,900 | $978,100 |
| 4. Full Excavation | $2,396,000 | $0 | $2,396,000 |
| 5. Capping and Groundwater Treatment | $1,100,100 | $3,900 | $1,160,100 |

Note: Alternatives 2 through 5 include baseline costs of $723,500 for building demolition and asbestos abatement, and $34, 600 for liquid waste removals.

# APPENDIX A

## Responsiveness Summary

# RESPONSIVENESS SUMMARY

**400 Block of Main Street Site**
**City of Poughkeepsie, Dutchess County**
**Site No. B-00148-3**
**March 2000**

The Proposed Remedial Action Plan (PRAP) for the 400 Block of Main Street was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on November 22, 1999. The PRAP outlined the remedial measure proposed for the remediation of the contaminated soil and groundwater at the 400 Block of Main Street. The preferred remedy is limited excavation and a soil cover.

The release of the PRAP was announced by a notice to the public contact list, informing the public of the PRAP's availability.

A public meeting was held on December 7, 1999 which included a presentation of the Site Investigation (SI) and analysis of alternatives, as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. Written comments were received from David Auffarth, Peter Butenoff, James McIver, Drayton Grant, and David Clouser. The public comment period for the PRAP ended on January 21, 2000.

This Responsiveness Summary responds to all questions and comments raised at the December 7, 1999 public meeting and to the written comments postmarked by January 21, 2000.

## Verbal Comments

The following are the questions and comments received at the public meeting, with the NYSDEC's responses:

**Comment #1** - Where did the curtain drain that was removed lead to?

**Response #1** - The curtain drain was a self-draining structure, like a dry well, that drained directly into the surrounding soils.

**Comment #2** - Was any off-site groundwater sampling performed?

**Response #2** - No. The results from monitoring well MW-5, located downgradient of the underground tank area, indicated that no migration of contamination has occurred, and so sampling further downgradient was not necessary.

**Comment #3** - Could previous residents of the site been exposed to contaminants? Should they be tested for exposure effects?

**Response #3** - The contamination was found primarily below the surface in the courtyard area, and in the soil floor of the Lomasney Building basement. Previous residents could only be exposed to these contaminants if they had been digging in the area of the leaking tanks, or had been trespassing in the basement of the Lomasney Building. Because these are unlikely circumstances, testing for exposure is not warranted.

**Comment #4** - Could the movement of soils as part of the remediation result in exposures or cause the contaminants to move faster?

**Response #4** - During remediation and construction activities that involve working in contaminated soils, real-time monitoring will be performed to ensure that contaminants are not released to workers and to the community. A Community Health and Safety Plan will be approved by the NYS Department of Health that will contain health-based action levels for the control of dust and volatile organic chemicals.

**Comment #5** - Will the partial removal of fill and cover ensure that future residents of the site will not be exposed?

**Response #5** - These actions, combined with institutional controls that prevent digging into the remaining fill, will prevent exposures to future residents.

**Comment #6** - Will the developers advise potential future homeowners that the site was formerly contaminated?

**Response #6** - The institutional controls will include a Declaration of Restrictions or Covenant on the property deed that will notify prospective homeowners of the residual contamination at the site. This control will follow the deed in perpetuity.

**Comment #7** - During the fire that destroyed buildings on the eastern Main Street portion of the site, the above-ground storage tanks were crushed and their contents were released. Have the impacts of this release been investigated?

**Response #7** - It is likely that any fuel oil contained in the tanks would have been burned in the fire. It was not possible to investigate this area of the site due to the structural instability of the building rubble. During the removal of the rubble, contingencies will be provided for the removal of oil-contaminated soil, if it exists.

**Comment #8**- It is likely that removal of 400 cubic yards of soil will not be enough to clean up the site. The final cost is likely to be much higher.

**Response #8** - There is some uncertainty in the estimate of soil to be removed under the selected alternative, and the associated cost. Contingencies will be provided to cover any additional costs due to this uncertainty.

**Comment #9** - There is concern for the grading and drainage associated with placing a soil cover over the site.

**Response #9** - The NYSDEC shares this concern. The final grades and drainage structures must be carefully engineered to ensure proper drainage.

**Comment #10** - The PRAP and Fact Sheet state that New York State reimburses "up to 75%" of the cost of brownfield projects. What determines the actual level of reimbursement?

**Response #10** - New York State reimburses 50% of building demolition and asbestos abatement costs, and 75% of the cost for remediating hazardous substances. Based on current estimates for building demolition and asbestos abatement ($723,500) and remediation ($194,600), the reimbursement rate is estimated to be 55.3%. This will be adjusted based on actual construction costs.

**Comment #11** - How were the limits of the proposed excavation established, and how accurate is the estimated excavation volume? It does not appear that a sufficient number of samples were taken to delineate the limits of excavation.

**Response #11** - The limits of excavation are somewhat conceptual, and additional sampling will be necessary during the design phase of the remedy to delineate the final extent. The volume and cost estimates are believed to be within 30% of their true values, which is typical of "study-phase" estimates and consistent with applicable USEPA guidance documents.

**Comment #12** - How will the remediation interface with construction of the residential properties? What if the developer abandons the project? Does the remediation prevent the construction of basements?

**Response #12** - The remediation and development projects should be closely coordinated. The DEC has met with the developer's design engineers to begin this coordination effort. The DEC expects that the soil removal will be performed before housing construction begins, and that the soil cover will be placed afterwards. If the developer abandons the project, the DEC will require the City of Poughkeepsie to place a soil and/or asphalt cover over the entire site. Basements can be constructed at the site, provided that proper precautions are taken during excavation.

**Question #13** - What would happen if, in the future, the buildings are torn down and something else is built?

**Response #13** - The covenant on the deed will inform future owners in perpetuity of the residual contamination beneath the site, and the demarcation layer is expected to remain intact. The covenant will also require that any changes in the use of the site or excavation below the demarcation layer will require the notification of the NYSDEC and NYSDOH. These will provide the administrative and technical means of preventing future exposures to low levels of contaminants remaining at the site.

**Question #14** - How are properties located downhill from the site protected from contaminant migration?

**Response #14** - Contaminated soils do not appear to have been washed downhill from the site. Higher-level contamination at the site is limited to discrete areas, and has not migrated extensively

even within the site. Surface drainage is collected in the City storm sewer, further limiting the potential for off-site migration to neighboring properties. Contaminated groundwater has not migrated off the site.

**Question #15** - If the auto parts store and paint supplier next to the site were to have a fire or other contaminant release, would that be handled as a separate site?

**Response #15** - Yes, it would be handled as a separate site with a separate owner.

**Question #16** - How does this site compare to the other brownfield sites in the City of Poughkeepsie?

**Response #16** - This site, the Hamilton Reproduction Site, and the Qual Krom Site each have unique characteristics, and it is difficult to compare them. The 400 Block is more similar to the Hamilton Site, where a leaking underground storage tank also caused a release of petroleum. However, the Hamilton Site had releases of chlorinated solvents, which the 400 Block did not. Neither of the other sites had releases of mercury or PCBs. The Qual Krom Site is the only site in which off-site migration of contaminants occurred. The Hamilton Site is being cleaned up for future industrial use; whereas the Qual Krom and 400 Block sites will be remediated for future residential use.

**Question #17** - What will happen to other buildings on Main Street if a two foot soil cover is placed on the site?

**Response #17** - The grading and drainage structures will have to be carefully engineered to avoid any drainage impacts to neighboring properties.

**Question #18** - Could other buildings on Main Street leak contamination that would re-contaminate the clean soil cover?

**Response #18** - Although it is possible for off-site releases to impact the site, the same factors that prevented the 400 Block contamination from migrating off-site would likely prevent this. These factors include the presence of storm sewers to intercept overland water flow.

**Comment #19** - Is there a difference between hazardous substances and hazardous wastes, and what are the health effects associated with each?

**Response #19** - Hazardous wastes and hazardous substances have specific legal and regulatory definitions that cannot be briefly stated. Generally, hazardous substances have a broader definition, and contain more chemicals than the hazardous waste list. Petroleum products are a hazardous substance when they are released, but are specifically exempted from the hazadous waste definition. For the other contaminants of concern at this site, mercury, lead and PCBs, there is a specific test and threshold concentration that defines a hazardous waste. The levels of these contaminants found at the site do not appear to be at levels that would define them as hazardous wastes.

**Question #20** - There is a concern that the covenant on the deed or Declaration of Restrictions will inhibit the development of the site and sale of housing units. What sort of language will be included in the covenant?

**Response #20** - The NYSDEC has provided draft language to the City and the developer for review. Such controls have been implemented on other sites and real estate development has successfully proceeded. The NYSDEC is willing to work with all parties to develop an approach that addresses the common concerns of public health protection and successful development.

**Question #21** - Two of the lots are proposed for sale to the Congress Tavern for use as a parking lot. Will it be possible to place additional fill on top of the soil cover for drainage and/or landscaping?

**Response #21** - Yes.

## Written Comments

**Letter #1** - A letter dated November 30, 1999 was received from David Auffarth, owner of the Congress Tavern, which included the following comments:

**Comment 1A:** The remedy should benefit the entire 400 block of Main Street, not just the portion that the City of Poughkeepsie owns.

**Response 1A:** There is presently no evidence of environmental contamination in other properties located along the 400 block of Main Street. No spills have been reported, and no contamination was found in the groundwater monitoring well located in the upgradient portion of the site.

**Comment 1B:** The environmental and "biohazards" must be removed immediately, not when the City can find money to fund it.

**Response 1B:** Much of the primary chemical hazards, the leaking underground storage tanks and the free asbestos in the Lomasney Building, have already been removed. The remaining chemical contamination does not currently pose a risk to public health, and there is no urgency to have it removed. The NYSDEC and City agree that the collapsed and abandoned buildings are an eyesore, and should be removed promptly. However, unless an emergency condition exists, the contracting process for this work must follow the procedural requirements of Municipal Finance Law.

**Comment 1C:** Alternative #1 (No Action) should not even be considered as a remedy.

**Response 1C:** The No Action Alternative must be evaluated to be consistent with State and federal laws. As stated in the PRAP, Alternative 1 is not a viable remedy for the site.

**Comment 1D:** The leaking underground storage tanks may be related to oil spills into the Fallkill Creek.

**Response 1D:** The petroleum spills to the Fallkill Creek have been investigated by the NYSDEC Spill Response Program. These occurred further downstream than the 400 Block Site, and sources for these have been identified. Evidence from the site investigation also indicates that oil from the 400 Block Site has not migrated beyond the limits of the courtyard area. Together, these facts indicate that the 400 Block Site is not the source of discharges to the Fallkill Creek.

**Comment 1E:** The cost estimate is unrealistic.

**Response 1E:** The cost estimate for building demolition and asbestos abatement, which comprises a large percentage of the overall project cost, is based on bids received by the City of Poughkeepsie, and is considered to be a firm estimate. As indicated in Response #11 above, the estimate for soil removal is believed to be within 30% of its actual value.

**Comment 1F:** Has any investigation been conducted on other properties on the 400 Block of Main Street, and will a cover be placed on those properties also?

**Response 1F:** As discussed in Response 1A above, there is no evidence that a problem may exist at other properties along the 400 block of Main Street. Therefore, no investigation was undertaken, and no off-site soil cover has been considered.

**Comment 1G:** There is a 10-foot grade difference between Main Street and the Courtyard area. How will this be graded when the cover is applied?

**Response 1G:** A grading plan must be developed during the design phase that ensures proper drainage on the site. This will be closely coordinated with the development plan for the site.

**Comment 1H:** In areas proposed for parking lots, will the application of an asphalt or concrete barrier be included as the remedial measure that is partially funded by the State?

**Response 1H:** Yes, the final cover in each area, to the extent that it is known at the time of the remedy, will be installed as part of the remedy.

**Comment 1I:** Will the City be allowed to use the site for residential development, or is it too contaminated?

**Response 1I:** Yes, the site will be suitable for residential development. The PRAP and ROD explicitly state that the selected remedy is compatible with residential use of the site, and this is confirmed by the New York State Department of Health.

---

Letter #2 A letter dated January 6, 2000 was received from Peter Butenhoff, owner of Pruden Auto Parts, which included the following comments:

**Comment 2A:** Adding two feet of additional cover soil and or paving over areas of the site raises concerns for drainage that could affect adjacent properties.

**Response 2A:** The NYSDEC agrees that drainage is a key concern to be addressed during the design of the soil cover. A grading plan and drainage structures must be designed to ensure proper drainage from the site.

**Comment 2B:** Properties that are lower than the 400 Block Site may receive contaminant flows beneath the soil cover.

**Response 2B:** By removing the source of contaminants above background levels, the potential for contaminant impacts to adjacent properties will be minimized. There is no evidence that contaminants currently present at the site are migrating, and it is therefore unlikely that any residual contamination would impact adjacent properties.

**Letter #3** A letter dated January 21, 2000 was received from James McIver, which included the following comments:

**Comment 3A:** The PRAP does not incorporate the detailed development plans that have been approved for the site. Certain aspects of the PRAP conflict with the development plans, as detailed below.

**Response 3A:** The NYSDEC did not receive the detailed plans for the site until after the PRAP was issued. The purpose of the Brownfields program is to remediate contaminated sites so that they can be redeveloped, but State Brownfield funds cannot be used to assist, subsidize or conduct such development. The NYSDEC agrees that remediation should be performed in a manner that does not conflict with development activities at the site, to the extent that it is practical and cost-effective. This coordination of remediation and development does not affect the selection of the fundamental site remedy.

**Comment 3B:** The proposed excavation of contaminated soil should include the placement of water, sewer and other utility lines that are part of the site development plan. This would eliminate the need to re-trench through the cover layer during site development, and reduce the potential exposure to site workers.

**Response 3B:** State Brownfield funds cannot be used to reimburse the City of Poughkeepsie for these elements of site development. The City has the option of including these items in the remediation construction plans, but they would not be eligible for State reimbursement. Similarly, the design and construction oversight of these items would not be eligible for reimbursement.

**Comment 3C:** Placement of the barrier protection layer should incorporate the grading plans for the development of the site.

**Response 3C:** The NYSDEC agrees in part with this comment. If the existing fill must be relocated to achieve the design subgrades, this will be performed as a remedial element. However, if more than 2 feet of soil is required over the subgrade to achieve the final site grades, that is considered to be an element of development, which would not be eligible for State funding (see Response 3B).

**Comment 3D:** Because the existing site grades will not be known until building demolition is complete, the final site grades and cover should be designed after demolition is completed. The design should incorporate the proposed building layout, foundation design requirements access and egress requirements, paving, drainage and other development considerations.

**Response 3D:** The NYSDEC agrees that the building demolition process will determine the existing grades and thereby affect the final grading plan. The NYSDEC will consider the subgrade requirements for the development site features, to the extent they can be incorporated in the remedial design without incurring additional costs which are related to site development.

**Comment 3E:** The remedy should be implemented in stages to coordinate with the proposed development schedule, in which houses are built as they are sold. Capping and placement of the soil cover should be done in a phased manner to avoid disturbance of the cover as development proceeds.

**Response 3E:** The NYSDEC and NYSDOH disagree with this approach. Although there will be a Community Health and Safety Plan to minimize exposures, residents living in constructed units could face potential exposure to remediation activities on adjacent lots if they lived on the site during remediation. The City and State would incur higher construction costs for re-mobilization and higher unit costs for most work items. The NYSDEC also acknowledges that excavation of foundations after capping would disturb the site cover and create contaminated material for disposal. The NYSDEC will continue to work with the site developer to produce an approach that addresses these concerns and is protective of public health and the environment, without shifting ineligible costs to the State.

---

**Letter #4** A letter dated January 21, 2000 was received from Drayton Grant, which generally supports the alternative proposed in the PRAP, but recommends certain refinements, as summarized in David Clouser's January 21, 2000 letter (letter #5). No response to this letter is necessary.

---

**Letter #5** A letter dated January 20, 2000 was received from David Clouser, which included the following comments:

**Comment 5A:** The PRAP does not incorporate the approved site development plan, and thereby proposes measures that are not necessary when the development is considered. Specifically, the PRAP does not consider the regrading specified in the development plans and the associated impacts on the disposal of contaminated soil and the import of clean soil.

**Response 5A:** See the responses to 3A and 3C above.

**Comment 5B:** The excavation required for the future site driveway could be used as backfill material for the contaminated soil to be removed from the site courtyard. Two feet of cover soil is not necessary where buildings and pavement will be installed.

**Response 5B:** The NYSDEC agrees that a comprehensive site grading plan may reduce the amount of soil to be imported to backfill excavations. Such a plan will be developed after building demolitions are complete, existing grades are known, and the amount of required cut and fill can be determined. The PRAP and ROD state that asphalt and concrete are equivalent barriers to two feet of soil, and so soil cover will not be installed under pavement and concrete areas.

**Comment 5C:** No import of soil is necessary for future lawn areas if soil excavated from building foundations is used as fill in landscaped areas. Additional cover protection would be provided by additional fill installed as part of the development.

**Response 5C:** The NYSDEC disagrees with this comment. Based on the site history and sampling results, the NYSDEC expects that fill beneath foundation areas will contain contaminants at levels that would not be suitable for long-term residential exposure. The required amount of clean soil will be installed in landscaped areas as part of the site remedy, not as part of the site development. Additional soil installed during development would provide additional protection.

**Comment 5D:** The remediation proposed for this site, based on future residential use, results in higher remediation costs than would be customary for continued commercial and industrial use of the site.

**Response 5D:** The DEC disagrees with this comment. The remedy for this site is selected based on the requirements of 6NYCRR 375-1.10(b), which specifies a goal of restoring sites, regardless of future use, to pre-disposal conditions to the extent feasible and authorized by law. The application of the remedy selection criteria at 6NYCRR 375-1.10 resulted in the selection of Alternative #3, as discussed in the PRAP and ROD. The difference in remediation cost, if any, is unknown. It is noted that the selected remedy, removal of contaminant source areas and the installation of cover over residual background contamination, has also been selected as the remedy for commercial and industrial properties in New York State.

# APPENDIX B
## Administrative Record

**400 Block of Main Street Site**
**City of Poughkeepsie, Dutchess County**
**Site No. B-00148-3**
**March 2000**

1. Index

2. Record of Decision, February 2000, NYSDEC

3. Proposed Remedial Action Plan, November 19, 1999, NYSDEC

4. Meeting Invitation and Fact Sheet, November 1999, NYSDEC

Reports

5. Summary Report of Subsurface Investigation, August 19, 1999, Ecosystems Strategies Inc.

6. Environmental Site Assessment, January 8, 1999, Ecosystems Strategies Inc.

Correspondence

7. Letter to Michael O'Toole from G. Anders Carlson, November 19, 1999 (PRAP concurrence letter)

8. Letter to George Heitzman from David Auffarth, November 30, 1999 (Comment letter)

9. Letter to George Heitzman from James McIver, December 20, 1999 (Comment letter)

10. Letter to George Heitzman from James McIver, January 5, 2000 (Request for extension of comment period)

11. Letter to George Heitzman from Peter Butenoff, January 6, 2000 (Comment letter)

12. Letter to George Heitzman from James McIver, January 21, 2000 (Comment letter)

13. Letter to George Heitzman from Drayton Grant, January 21, 2000 (Comment letter)

14. Letter to Drayton Grant from David Clouser, January 20, 2000 (Comment letter)

15. Letter to Michael O'Toole from G. Anders Carlson, March 2, 2000 (ROD concurrence letter)