Department of Environmental Conservation

Division of Environmental Remediation

Environmental Restoration
Record of Decision
Former Photech Imaging Site
Rochester, Monroe County, New York
Site Number B-00016-8

March 2006

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor*   DENISE M. SHEEHAN, *Commissioner*

DECLARATION STATEMENT
ENVIRONMENTAL RESTORATION RECORD OF DECISION

Former Photech Imaging Environmental Restoration Site
City of Rochester, Monroe County, New York
Site No. B-00-016

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Former Photech Imaging site, an environmental restoration site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Former Photech Imaging environmental restoration site, and the public's 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 releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Site Investigation/Remedial Alternatives Report (SI/RAR) for the Former Photech Imaging site and the criteria identified for evaluation of alternatives, the NYSDEC has selected excavation and off-site disposal of contaminated soils and groundwater monitoring. The components of the remedy are as follows:

- A remedial design program;
- Asbestos abatement, building and equipment decontamination, and building demolition;
- A design-phase investigation;
- Removal of the silver recovery system;
- Excavation and off-site disposal of contaminated soils;

- Development of a site management plan;
- Imposition of an environmental easement;
- Periodic certification of the institutional and engineering controls; and
- Implementation of a long-term groundwater monitoring plan.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is 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.

MAR 3 1 2006

Date

Dale A. Desnoyers, Director
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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 (NYSDOH), has selected a remedy for the Former Photech Imaging site. The presence of hazardous substances has created threats to human health and/or the environment that are addressed by this remedy.

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 provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated the property can then be reused.

As more fully described in Sections 3 and 5 of this document, manufacturing operations of photographic film and paper have resulted in the disposal of hazardous substances, including polycyclic aromatic hydrocarbons (PAHs) and metals. These hazardous substances have contaminated the groundwater and soil at the site, and have resulted in:

- a threat to human health associated with potential exposure to polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and metals in soils and groundwater.

- an environmental threat associated with the impacts of PAHs and metals in groundwater.

To eliminate or mitigate these threats, the NYSDEC has selected the following remedy to allow for commercial/industrial use of the site:

- A remedial design program to provide the details necessary to implement the remedial program;

- Asbestos abatement, building and equipment decontamination, and building demolition including removal of basements and tunnels;

- A design-phase investigation to delineate the extent of soil contamination, and to confirm the extent of groundwater contamination;

- Removal of the silver recovery system;

- Excavation and off-site disposal of contaminated soils;

- Development of a site management plan to address residual contamination and any use restrictions. The site management plan would also require an evaluation of the potential for vapor intrusion in any buildings to be developed on the site;

- Imposition of an environmental easement;

- Periodic certification of the institutional and engineering controls; and

- Implementation of a long-term groundwater monitoring plan .

The selected remedy, discussed in detail in Section 8, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

SECTION 2: <u>SITE LOCATION AND DESCRIPTION</u>

The former Photech Imaging Systems, Inc. property (Site) is located at 1000 Driving Park Avenue in a commercial/industrial-zoned area in the northwest quadrant of the City of Rochester, Monroe County. The site is comprised of 12.5 acres of land that include a total of 15 buildings comprising approximately 108,000 square feet of space. These buildings formerly housed various manufacturing, laboratory, office, and warehouse operations. A series of below ground tunnels connect several buildings. Various underground (UST) and aboveground storage tanks (AST), a below ground silver recovery system and associated wastewater system piping were formerly used at this facility. Other features of the Site include a former burn pit area, a retention pond basin, asphalt parking lots, and three wooden shed-like structures.

The Site is currently bound by: Driving Park Avenue to the south; Holleder Industrial Park to the north; Rochester Distribution Unlimited, Inc. to the east; and Electronic Media Solutions, Inc. to the west. Directly to the south of Driving Park Avenue is the Delphi manufacturing facility. The Delphi property is currently listed in the Registry of Inactive Hazardous Waste Sites as a class 2. The Photech Site is approximately 1000 feet east of Mt. Read Boulevard and 2 miles east of Interstate Route 390. Please refer to Figures 1 and 2 for a site location and a site plan.

SECTION 3: <u>SITE HISTORY</u>

3.1: <u>Operational/Disposal History</u>

The Site was originally developed in 1948 for manufacturing photographic film and paper. Several different companies have owned and operated the facility at the Site for photographic paper and film production since its construction in 1948. The most recent owner, Photech

Imaging Systems, Inc., ceased operations and abandoned the facility in 1991. Large amounts of chemicals, wastes, and various supplies and materials were left “as-is” on-site when the facility was abandoned. In 1994, the NYSDEC and the United States Environmental Protection Agency (USEPA) performed a bulk waste and chemical removal action at the Site. This work successfully removed bulk chemicals from the facility; however, tanks were not certified as “clean”; small containers of chemicals were left in some of the buildings; and residual chemicals remain in some process vessels and piping. Since the removal action, the buildings have been vandalized, with ceilings, walls, piping and equipment severely damaged. As a result, asbestos and chemical residues are suspected to be present in many interior areas of the buildings. Additionally, the roofs have failed on several of the buildings and there was a fire in 2004 in the former warehouse portion of the facility. Due to the extreme state of dilapidation, all of the structures will need to be razed prior to any site remediation or development.

3.2: Remedial History

Burn Pit Cleanup

Anecdotal information exists regarding a reported ‘cleanup’ performed by the former owners sometime in the 1970’s or 1980’s. This cleanup reportedly involved the removal and off-site disposal of solid waste from the former retention pond and burn pit area.

1986 Site Audit

An independent contractor completed a site audit in 1986. The audit included a detailed environmental inspection of the plant, a review of waste handling practices, and the completion of a limited number of soil borings, and limited groundwater sampling. The most significant findings of the 1986 audit included:

- The former underground wastewater silver recovery vault located adjacent to the Research and Development Building had not contributed to any soil or groundwater contamination in the immediate area;
- One or more of the underground fuel tanks leaked into the surrounding soil;
- The underground 500-gallon waste methanol tank piping had failed; and
- The facility waste handling practices required upgrading or modification to meet regulatory requirements.

Bulk Chemical and Waste Removal Projects

After closing in 1991, the previous owner of the Photech facility did not perform a facility closure to remove and dispose of chemical material and wastes. As a result, the Photech site contained an assortment of abandoned oxidizers, reactive chemicals, flammable liquids, corrosives, poisons, and shock sensitive chemicals that were stored both inside and outside of facility buildings. Many of these chemical materials were stored in deteriorating containers and in unsafe conditions. Subsequent to the closing of the facility, the NYSDEC completed several small interim remedial measures such as removing and disposing of hazardous wastes and relocating chemical products (i.e. glycols) to a more secure interior staging area.

In 1994, the NYSDEC and the USEPA performed a bulk waste and chemical removal action at the Site. A wide variety of hazardous wastes, process chemicals, and laboratory chemicals stored at the property were removed and shipped off-site for proper disposal. The contents of numerous drums and tanks stored on-site were emptied and/or removed from the site. This project successfully removed the bulk chemicals from the facility.

SECTION 4: <u>ENFORCEMENT STATUS</u>

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 Rochester will assist the state in its efforts by providing all information to the state which identifies PRPs. The City of Rochester will also not enter into any agreement regarding response costs without the approval of the NYSDEC.

SECTION 5: <u>SITE CONTAMINATION</u>

The City of Rochester has recently completed a site investigation/remedial alternatives report (SI/RAR) to determine the nature and extent of any contamination by hazardous substances at this environmental restoration site.

5.1: <u>Summary of the Site Investigation</u>

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI/RAR was conducted between November 1998 and May 2005. The field activities and findings of the investigation are described in the SI/RAR report. The following activities were conducted during the SI:

- Performed a Phase I site assessment in accordance with American Society for Testing and Materials (ASTM) E 1527-97. This assessment included several interviews with the former Plant Engineer for the Photech facility;

- Conducted an asbestos survey and sampling program inside the buildings. The sampling consisted of 26 wipe samples and 212 bulk samples for asbestos analyses;

- Conducted a building and equipment decontamination survey to assess residual chemical contamination inside the building. The sampling program consisted of 110 wipe samples and 32 bulk samples for chemical analysis;

- Cleaned, removed and disposed of four aboveground storage tanks (ASTs);

- Excavated and removed the buried spill containment drum from the former hazardous waste storage area;

- Installed forty (40) soil borings and ten (10) monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;

- Sampled shallow subsurface soils (0-9" below ground surface) at seventeen (17) locations; and

- Soil and groundwater sampling at ten monitoring well locations.

To determine whether the soil and groundwater contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on NYSDEC "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels". The site-specific cleanup level for cadmium in TAGM 4046 is 1 ppm. Cleanup of cadmium to this level will remediate silver in soils to levels that are protective of human health and the environment.

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

5.1.1: Site Geology and Hydrogeology

The overburden material and geology underlying the Site consists of variably textured lacustrine, glaciolacustrine, and till deposits that overlie Rochester Shale bedrock. The depth to bedrock ranges from 8 to 20 feet below ground surface. The deepest point for bedrock was adjacent to the underground tunnel at Well-06. This suggests that bedrock may have been blasted or excavated for construction of these tunnels. Ten groundwater monitoring wells were constructed at the bedrock/overburden interface. Groundwater occurs within the overburden at all locations and appears to flowing radially inward to the site towards Well-06. Groundwater flow direction appears to be influenced by the underground tunnels and drainage systems on-site. Rising head hydraulic conductivity values range from 1.42×10^{-4} cm/ s to 1.05×10^{-2} cm/s.

5.1.2: Nature of Contamination

As described in the SI/RAR report, many soil and groundwater samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants that exceed their SCGs are semivolatile organic compounds (SVOCs), and inorganics (metals).

The SI/RAR identified six areas of concern (AOCs) on the Site and evaluated each separately. These areas are shown in Figure 2 and are as follows:

AOC1 - East of Chemical Lab Building #11
AOC2 - Silver Recovery Vault Area
AOC3 - Eastern Portion of the Site
AOC4 - Miscellaneous Areas
AOC5 - Asbestos Containing Materials
AOC6 - Residual Chemicals inside buildings

SVOCs identified at the site include the following polycyclic aromatic hydrocarbons (PAHs) in soils: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenz(a,h)anthracene. PAHs can be associated with waste oil, creosote (preservative for railroad ties, telephone poles and piers), stripped paint, incinerator ash, incomplete combustion of fossil fuels, and natural sources such as in petroleum and smoke from fires, etc.

Inorganic elements (metals) identified at the site include: cadmium, chromium, lead, nickel, selenium, silver, and zinc.

Other contaminants detected on-site include very low levels of volatile organic compounds (VOCs) in soils and groundwater. No significant source of VOCs was detected on-site.

5.1.3: <u>Extent of Contamination</u>

This section describes the findings of the investigation for all environmental media that were investigated. The findings are presented by both areas of concern (AOCs) and by media. Please refer to Figure 2 which identifies the AOCs; Figures 3 & 4 which describe soil contamination; and Tables 3 & 4 which summarize groundwater contamination.

AOC1
<u>East of Chemical Lab Building #11:</u> Concentrations of the following metals: cadmium; nickel; selenium; and zinc, and the following PAHs benzo(a)anthracene; chrysene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene exceeded SCGs in shallow subsurface soils. PAHs detected in subsurface soils are as follows: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; indeno(1,2,3-cd)pyrene; and dibenzo(a,h)anthracene. The highest levels of PAHs were detected in the subsurface soil sample collected from the soil boring at Well 06 (WS-06). The extent of contamination has not been fully defined in this area. Additional investigation will be required after Building #11 is demolished. Please refer to Figure 3 for the estimated extent of soil contamination.

AOC2

Silver Recovery Vault Area: The liquid contents of the underground concrete silver recovery vault have high enough levels of silver to be considered a characteristic hazardous waste. The integrity of the recovery vault is suspect. Leakage from this silver recovery system appears to have resulted in releases to adjacent subsurface soil and groundwater. Some of the subsurface soil samples in proximity to the underground silver recovery vault contain concentrations of benzo(a)pyrene, cadmium, copper, nickel, selenium and silver that exceed SCGs. The highest site-wide concentrations of metals in soils are located adjacent to the silver recovery vault. These highest concentrations are as follows: cadmium at 6,320 ppm and silver 846 ppm. Groundwater in the vicinity is contaminated with cadmium, chromium, silver, and selenium at concentrations that exceed SCGs. The full extent of metals and SVOC contamination in this area has not been fully defined. Additional investigation will be required after Building #1 is demolished. Please refer to Figure 3 for the estimated extent of soil contamination.

AOC3

Eastern Portion of the Site: Former operations at various areas on the eastern portion of the Site appear to have contributed to intermittent contamination of shallow subsurface soil, subsurface soil, and groundwater on the eastern portion of the Site. It appears that the extent of contamination is generally irregular. In many cases, soil and groundwater sample results did not exceed SCGs. The operations include the following areas:

Former open burn pit area: The burn pit was located within the limits of the former retention pond. SCGs were exceeded in subsurface soils for cadmium, nickel, selenium and zinc;

Former retention pond: Solid waste was burned and/or dumped in a portion of the pond area. SCGs in subsurface soils were exceeded for cadmium, chromium, lead, nickel, selenium and zinc. Groundwater is contaminated with lead, silver and zinc;

Former film incinerators: Subsurface soils are contaminated with the following PAHs and metals that exceed SGCs: benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, nickel and selenium. Groundwater is contaminated with 1,1-dichloroethane, arsenic, beryllium, chromium, copper, iron, lead, silver and zinc.

Former transformer pad area: Shallow subsurface soils are contaminated with cadmium and silver above SCGs and the following PAHs: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene. No PCBs were detected.

Retention pond cement culvert discharge area: Shallow subsurface soils are contaminated with cadmium above SCGs and the following PAHs that exceed SCGs: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene.

Former UST(s): Subsurface soils are contaminated with benzo(a)pyrene above SCGs.

Former concrete drywell area: Groundwater is contaminated with 1,1,-dichloroethane and selenium.

Please refer to Figure 4 for the estimated extent of soil contamination

AOC4

Miscellaneous Areas: Operations at various miscellaneous areas of the Site (i.e., areas not included as part of other AOCs) appear to have contributed to intermittent contamination of shallow subsurface soil, subsurface soil, and groundwater at the Site. It appears that the extent is generally irregular. In many cases, soil and groundwater sample results did not exceed SCGs. The operations include the following areas:

Former hazardous waste storage area: There is a shed located along the western property line that included a buried spill containment drum. Shallow subsurface soils are contaminated with selenium at 2.47 ppm in the vicinity of the former spill containment drum. Please refer to Figure 2 for the spill containment drum location.

Former Waste Methanol tank area: Groundwater is contaminated with cadmium and zinc.

AOC5

Asbestos Containing Materials: The purpose of the facility-wide asbestos survey was to identify areas with regulated asbestos-containing materials (ACM) within the buildings. The asbestos survey found ACM present inside most of the buildings at the Photech facility. Specific information on the sampling conducted, locations, quantities, and types of materials can be found in the asbestos survey report in Appendix F of the SI/RAR report. Asbestos abatement will need to be performed prior to demolition of all on-site structures.

AOC6

Residual Chemicals: Many of the buildings contain waste/process materials and have impacted building materials. Based on bulk sampling, some of the waste/process materials will require disposal as characteristic hazardous waste.

Contaminants by Media

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

Table 1 summarizes the degree of contamination for the contaminants of concern in shallow subsurface soil, subsurface soil, and groundwater and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Shallow Subsurface Soil

(0-9" below ground surface)

VOCs

Very low levels of VOCs were detected at 10 of 15 shallow subsurface soil samples locations. The concentrations were all estimated to be less than 6 ppb and are well below SCGs.

SVOCs

SVOC test results indicate that PAHs exceed SCGs in 7 of 16 shallow subsurface soil sample locations. The following PAHs exceed SGCs: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and dibenzo(a,h)anthracene. These sample results are in AOC1 and AOC3 in the following locations: the scupper drain discharge location near Building #11 (AOC1); the former transformer pad (AOC3); and the cement culvert discharge area north of the former retention pond (AOC3).

Metals

Metals detected exceeded SCGs in 15 of the 17 shallow subsurface soil locations analyzed for metals. The metals of concern that exceeded SCGs include: cadmium, nickel, selenium and silver. Zinc concentrations exceed the TAGM 4046 SCG of 20 ppm in 15 of the shallow subsurface soil locations. Sample results at one or more of the locations along the east side of Building #11 in proximity to scupper drain discharge (AOC1) have concentrations of cadmium, nickel, selenium, and zinc exceeding SCGs. Concentrations of selenium and zinc exceed SCGs near the former hazardous waste storage shed (AOC4); concentrations of silver and cadmium exceed SCGs at the transformer pad (AOC3); and concentrations of cadmium exceed SCGs at the cement culvert discharge area north of the former retention pond (AOC3).

Please refer to Figures 3 & 4.

Subsurface Soil

Subsurface soil samples were collected from forty(40) soil boring locations and ten(10) monitoring well locations. Samples were tested for one or more of the following parameters: VOCs, SVOCs, TCLP metals, target analyte list (TAL) metals, total petroleum hydrocarbons (TPH), and alcohols. The detected concentrations of these parameters were compared to SCGs in NYSDEC TAGM 4046.

VOCs

Very low levels of VOCs were detected in 9 of 42 soil samples. The concentrations of specific and total VOCs were well below SCGs. There is no apparent source areas of VOCs in subsurface soils.

SVOCs

Sample results indicated that concentrations of PAHs exceeded SCGs in 4 of the the 38 samples analyzed for SVOCs. Total PAH concentrations ranged from an estimated 1.6 ppm to 140 ppm at these locations. The highest concentration of PAHs was detected in the soil boring for Well-06 (WS-06) in AOC1 near Building #11. The following PAHs exceeded SGCs: benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; indeno(1,2,3-cd)pyrene; and dibenzo(a,h)anthracene. The other locations where PAH concentrations exceeded SCGs are as follows:

Sample GS-16, silver recovery vault: Total PAH concentration of 1.6 ppm (AOC2);

Sample GS-07, former fuel oil USTs: Total PAH concentration of 1.7 ppm (AOC3); and

Sample GS-50, former film incinerator: Total PAH concentration of 5.1 ppm(AOC3).

Please refer to Figures 3 & 4 for these sample locations.

Metals

Metals contamination in subsurface soil at the Site is predominant in AOC2 (silver recovery vault area) and AOC3 (eastern portions of the site). The metals in subsurface soils that exceed SCGs at the site are: cadmium, chromium, lead, nickel, selenium, silver, vanadium, and zinc. The highest concentration of metals is located adjacent to the silver recovery pit (AOC2) in sample GS-17 with cadmium at 6,320 ppm and silver 846 ppm. SCGs for selenium (3.2 ppm) and nickel (23.9 ppm) were also exceeded at this location. In addition, the soil sample from the boring for Well-01 (WS-01) had cadmium concentrations of 720 ppm. TCLP analysis of this sample did not fail hazardous waste characteristics.

SCGs for cadmium, chromium, lead, nickel and zinc were exceeded at one or more of the following four locations within AOC3.

Sample GS-01, former open burn pit area: cadmium, nickel, selenium, and zinc;

Sample GS-03, former retention pond area: chromium, nickel, selenium, and zinc;

Sample GS-39, former open burn pit area: cadmium, lead, nickel, and zinc; and

Sample GS-50, former film incinerator: nickel and selenium.

Please refer to Figures 3 & 4.

Groundwater

Two rounds of groundwater samples were collected from each of the ten well locations. The first round of sampling was conducted in January 2000 and samples were analyzed for one or more of the following parameters: VOCs, SVOCs, Metals, and alcohols. The second round of sampling was conducted in May 2005 and samples were analyzed for VOCs and metals. Please refer to Figure 5 for well locations and Tables 3 and 4 for groundwater contaminant concentrations.

VOCs

With the exception of Well-09 and Well-08 very low levels of VOCs were detected in site groundwater. SCGs were exceeded for 1,1-dichloroethane in Well-09 and trichloroethene in Well-08.

SVOCs

Very low levels of the following PAHs were detected in Well-06: naphthalene; benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; and indeno(1,2,3-cd)pyrene. Concentrations were reported as "J" values and are estimated to be just above SCGs.

Metals

The following metals were detected above SCGs in the first round of sampling: arsenic, cadmium, chromium, lead, nickel, selenium, and silver. In the second round of sampling the only metals exceeding SCGs were cadmium and silver. The variability of these sampling events may be due to sample turbidity. The second round of sample data does appear to be more consistent with the on-site soils data. In both rounds, the highest concentration of metals was in Well-01 near the silver recovery vault (AOC2).

5.2: <u>Interim Remedial Measures</u>

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/RAR.

Several IRMs were conducted in conjunction with the completion of the SI/RA project. The objective of the IRMs were to mitigate any potential human health and environmental risks related to aboveground and underground tanks. The IRMs included closure of the following four aboveground storage tanks (ASTs):

- A 10,000-gallon steel fuel oil AST
- A 10,000-gallon virgin methanol AST
- A 2,500-gallon virgin methanol AST
- A 2,500-gallon waste methanol AST

The scope of the IRMs also included removal of suspected underground structures: A 500-gallon steel waste chemical tank; a concrete vault structure of unknown size; and a containment drum used to collect runoff and drainage from the former hazardous waste storage shed structure.

All of the ASTs and their associated secondary containment structures were removed and disposed of off-site. Confirmatory soil sample results beneath the ASTs showed no contamination.

The two suspected underground structures could not be located. Three test pits were excavated identifying a former concrete tank saddle and straps and some associated piping. No tanks or vaults could be located. Confirmatory soil sample results did not show any contamination.

The spill containment drum and its contents were removed from the former hazardous waste storage area and disposed of off-site. Confirmatory soil sample results did not show any significant contamination.

5.3: <u>Summary of Human Exposure Pathways</u>:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 7.0 of the SI/RAR report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.
The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

There are no confirmed complete pathways that are known to exist either on-site or off-site at this time. Public water serves the area; therefore, ingestion of contaminated groundwater used for drinking water is unlikely. The following receptor populations potentially may be exposed to site contaminants:

- Persons in contact with SVOCs and metals in shallow subsurface soils identified in AOC1, AOC3 and AOC4;

- Future site workers in contact with SVOCs and metals in shallow subsurface and subsurface soils during excavation/construction activities; and

- Future site workers and future building occupants in contact with SVOCs, VOCs and metals from contaminated groundwater.

The primary potential pathways of exposure to site contaminants include the following:

- Direct contact or incidental ingestion of contaminated soils;

- Inhalation of contaminated dust generated during construction activities;

- Direct contact or accidental ingestion of contaminated groundwater; and

- Inhalation of VOCs in the indoor air of future site buildings through vapor intrusion.

Potential exposure pathways require remediation and/or controls. Since it is planned that this property will be redeveloped, remediation and/or controls will also be required to mitigate the potential future exposure pathways.

5.4: <u>Summary of Environmental Impacts</u>

This section summarizes the existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

The site is in a commercial/industrial setting and there are no significant environmental resources located (i.e. wetlands, streams, habitats) in the vicinity of the site. Soils contamination appears to be limited to the site boundaries.

Site contamination has impacted the groundwater resource in the overburden/bedrock unit. Groundwater is not used as a drinking water source. Furthermore, the City of Rochester has an ordinance prohibiting groundwater use as a potable drinking water source.

SECTION 6: <u>SUMMARY OF THE REMEDIATION GOALS AND THE PROPOSED USE OF THE SITE</u>

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the site through the proper application of scientific and engineering principles.

The proposed future use for the Former Photech Imaging Site is commercial/industrial.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to metals and PAHs in on-site soils and groundwater;
- the release of contaminants from soil or groundwater into indoor air of future overlying buildings through vapor intrusion;
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and
- the release of contaminants from shallow subsurface soil into storm drainage systems through storm water erosion.

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards;

- Soil cleanup levels in TAGM 4046 for surface and subsurface soils; and

- The site-specific cleanup level for cadmium in TAGM 4046 is 1 ppm. Cleanup of cadmium to this level will remediate silver in soils to levels that are protective of human health and the environment.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements. Potential remedial alternatives for the Former Photech Imaging Site were identified, screened and evaluated in the RA report which is available at the document repositories identified in Section 1.

A summary of the remedial alternatives that were considered for this site are discussed below. The present worth represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved.

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated groundwater and soils at the site.

AOC1: East of Chemical Lab Building #11

AOC1 - Alternative #1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

AOC1-Alternative #2: Institutional Action with Delineation

Present Worth:	$350,865
Demo and Asbestos Cost	$306,000
Capital Cost:	$31,030
Annual OM&M	$900

Under this alternative, institutional controls (i.e., environmental easements) , and development of a site management plan (SMP) including a health and safety plan (HASP) would be implemented to protect against exposure and also control Site use. In addition, this area of concern would be fully delineated under a design-phase investigation. Asbestos abatement, decontamination, and demolition of Building #11 would be completed prior to the investigation work because it is assumed that soil contamination extends beneath this building. This remedy could be designed and implemented in 12 to 18 months.

AOC1 - Alternative #3: Soil Cover

Present Worth	$416,770
Capital Cost	$101,500
Demo and Asbestos	$306,000
Annual OM&M	$9,270

Under this alternative, the institutional controls, SMP, and design-phase investigation work described above would be implemented for this area of concern. In addition, a cover consisting of a minimum 1-foot of clean soil and/or a low permeability paved surface would be placed over the area of impacted soil. The soil cover would be underlain by a warning/demarcation layer to identify the presence of potentially contaminated soil beneath it, and to provide a physical barrier against unintended penetrations. Periodic monitoring of the area would be conducted to ensure this area is not being disturbed. Asbestos abatement, decontamination, and demolition of Building #11 would be completed prior to implementation. This remedy could be designed and implemented in 12 to 18 months.

AOC1 - Alternative #4: Soil Removal and Disposal

Present Worth	$495,655
Demo and Asbestos Cost	$306,000
Capital Cost	$175,820
Annual OM&M	$900

Under this alternative, the institutional controls, SMP, and design-phase investigation work described above would be implemented for this area of concern. The design-phase investigation would be conducted to determine the extent of contamination within the footprint of Building #11, and to provide a better estimate for soil removal quantities. An estimated 2,000 tons of contaminated soil would be removed to meet site cleanup levels , and the excavation would be backfilled with clean material. This soil quantity estimate assumes soil beneath Building #11 would be excavated and removed and it includes a 20% contingency. This alternative would include asbestos abatement, decontamination, and demolition of Building #11. This remedy could be designed and implemented in 12 to 18 months.

AOC2: Silver Recovery Vault Area

AOC2 - Alternative #1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

AOC2 - Alternative #2: Institutional Action

Present Worth $27,035
Capital Cost $13,200
Annual OM&M $900

Under this alternative (i.e. environmental easements) , and development of a SMP including a HASP would be implemented to protect against exposure to contaminants in the area of the silver recovery vault area. This alternative could be implemented in less than 6 months.

AOC2 - Alternative #3: Soil/Liquid Removal and Groundwater Monitoring

Present Worth $753,826
Demo and Asbestos Cost $114,000
Capital Cost $501,156
Annual OM&M $32,030

Under this alternative, the institutional controls described above would be implemented for this area of concern. Initially, asbestos abatement, decontamination and demolition of Building #1 would be completed. A design-phase investigation would be conducted to determine the extent of contamination within the footprint of Building #1, and to provide a better estimate for soil removal quantities. Approximately 30,000 gallons of liquids in the silver recovery vault, silver recovery UST, wastewater AST, and associated piping would be removed and disposed of off-site. All equipment associated with the silver recovery system would be removed and disposed of off-site. An estimated 2000 cubic yards of contaminated soil would be removed to meet site cleanup levels , and the excavation would be backfilled with clean material. This soil quantity estimate assumes soil beneath Building #1 would be excavated and removed and it includes a 20% contingency. A large portion of the contaminated groundwater would be removed while dewatering the open excavations. Upon completion of the removal action, a groundwater monitoring program would be initiated to evaluate the effectiveness of the soil removal action. If residual groundwater contamination does not meet levels acceptable to the NYSDEC, further groundwater remediation would be evaluated. . . This remedy could be designed and implemented in 18 to 24 months.

AOC3: Eastern Portion of Site

AOC3 - Alternative #1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

AOC3 - Alternative #2: Institutional Action

Present Worth $27,035
Capital Cost $13,200
Annual OM&M $900

Under this alternative, institutional controls (i.e., environmental easements) ,and development of a SMP including a HASP would be implemented to protect against exposure and also control site use. This alternative could be implemented in less than 6 months.

AOC3 - Alternative #3: Soil Cover

Present Worth $119,180
Capital Cost $105,280
OM&M Cost $13,900

Under this alternative, the institutional controls and SMP described above would be implemented for the eastern portion of the Site. In addition, the area would be delineated in a design-phase investigation and a cover consisting of a minimum 1-foot of clean soil and/or a low permeability paved surface would be placed over the area of impacted soil. The soil cover would be underlain by a warning/demarcation layer to identify the presence of potentially contaminated soil beneath it, and to provide a physical barrier against unintended penetrations. Periodic monitoring of the area would be conducted to ensure this area is not being disturbed. This remedy could be designed and implemented in 12 to 18 months.

AOC3 - Alternative #4: Soil Removal and Disposal

Present Worth $594,635
Capital Cost $580,800
Annual OM&M $900

Under this alternative, the institutional controls and SMP described above would be implemented for this area of concern. A design-phase investigation would be implemented to delineate the extent of soils contamination and to provide a better estimate of soil excavation quantities. For cost estimation purposes it is assumed that 8,000 tons of soil with contaminant concentrations above site cleanup levels would be removed and disposed off-site, and the excavation would be backfilled with clean material. This soil quantity estimate assumes soil removal beneath buildings and it includes a 20% contingency. The design-phase investigation would allow for a more accurate cost estimate. This remedy could be designed and implemented in 12 to 18 months

AOC4: Miscellaneous Areas

AOC4 - Alternative #1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

AOC4 - Alternative #2: Institutional Action

Present Worth $27,035
Capital Cost $13,200
Annual OM&M$ $900

Under this alternative, institutional controls (i.e., environmental easements) , and development of a SMP including a HASP would be implemented to protect against exposure and also control site use. This alternative could be implemented in 6 months or less.

AOC4 - Alternative #3: Institutional Action and Continued Groundwater Monitoring

Present Worth $155,470
Capital Cost $16,800
Annual OM&M $32,030

Under this alternative, institutional controls (e.g., environmental easements , and development of a SMP would be implemented to protect against exposure and control site use. In addition, the existing monitoring wells at the Site would be monitored over time to ensure contaminant concentrations in groundwater are not increasing.

AOC4 - Alternative #4: Soil Cover

Present Worth . . . . $ 226,470
Capital Cost $73,900
Annual OM&M $33,830

Under this alternative, the institutional controls, SMP, and groundwater monitoring described above would be implemented for the Miscellaneous Areas. In addition, the areas of impacted soil would be delineated and a cover consisting of a minimum 1-foot of clean soil and/or a low permeability paved surface would be placed over the areas of impacted soil. The soil cover would be underlain by a warning/demarcation layer to identify the presence of potentially contaminated soil beneath it, and to provide a physical barrier against unintended penetrations. Periodic monitoring of the capped areas would be conducted to ensure this area is not being disturbed. This remedy could be designed and implemented in 12 to 18 months.

AOC4 - Alternative #5: Soil Removal and Disposal

Present Worth $166,935
Capital Cost $153,100
Annual OM&M $900

Under this alternative, the institutional controls, and SMP described above would be implemented for this area of concern. In addition, the areas of impacted soil would be fully delineated in a design-phase investigation. An estimated 1,400 tons of contaminated soil would be excavated and disposed of off-site to meet the site cleanup levels. The excavation would be backfilled with clean material. This remedy could be designed and implemented in 12 to 18 months.

AOC5 and AOC6 - Alternative #1: Asbestos Abatement, Building decontamination and Building Demolition

Present Worth Asbestos Removal $1,169,380
Present Worth Building Decon. $279,000
Present Worth Building Demo. $844,380
Total Present Worth $2,292,760
Total Capital Cost $2,292,760
Annual OM&M $0

Due to the extreme dilapidated state of the on-site buildings and the risks associated with leaving the structures in place, it would be required to demolish all remaining buildings on-site. The above costs do not include demolition of Buildings #11 and #1. Demolition costs are included in the remedial alternatives for AOC1 and AOC2 respectively. The building demolition would be conducted in three phases. Phase I would involve asbestos abatement and off-site disposal of asbestos containing materials; Phase II would be removal of chemical contaminated equipment and materials; and the final phase would be demolition of the buildings.

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of environmental restoration projects in New York State. A detailed discussion of the evaluation criteria and comparative analysis is included in the RA report.

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

1. 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.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other

standards and criteria. In addition, this criterion includes the consideration of guidance which the NYSDEC has determined to be applicable on a case-specific basis.

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.

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 engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

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

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

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

This final criterion is considered a “modifying criterion” and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the SI/RAR report and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the NYSDEC addressed the concerns raised. In general, the public comments received were supportive of the selected remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the NYSDEC has selected the following alternatives for AOCs 1-6 as the remedy for this site.

- AOC1: Alternative #4 - Soil removal and disposal;

- AOC2: Alternative #3 - Soil/liquid removal and disposal and groundwater monitoring;

- AOC3: Alternative #4 - Soil removal and disposal;

- AOC4: Alternative #5 - Soil removal and disposal; and

- AOC5 & AOC6 - Asbestos abatement, building decontamination, and building demolition.

The elements of this remedy are described at the end of this section. The selected remedy is based on the results of the SI and the evaluation of alternatives presented in the RAR.

These alternatives have been selected because, as described below, they satisfy the threshold criteria and provide the best balance of the primary balancing criteria described in Section 7.2. These alternatives will achieve the remediation goals as specified in the following analysis.

AOC1: East of Chemical Lab Building #11

The selected alternative for AOC1 (East of Chemical Lab Building #11) is soil removal and disposal (alternative 4). All of the remedial alternatives will be easily implemented; however, alternative 1 will not meet the threshold criteria and was not further considered. Alternatives 2, 3, & 4 will meet the threshold criteria and were further evaluated. Alternative 2 will not have any short-term impacts and alternative 3 and 4 need a HASP to control short-term impacts. Alternatives 2, 3 and 4 will be effective in the long-term; however, alternatives 2 and 3 will require active management and will inhibit site development. Alternative 4 will be the only alternative that reduces the volume of contamination on-site because the soils will be removed from the site. Although alternative 4 will be more expensive than the alternatives 2 and 3, it will be a permanent remedy and should not inhibit the planned Site development by restricting certain areas from constructing buildings.

AOC2: Silver Recovery Vault Area

The selected alternative for AOC2 (Silver Recovery Vault) is soil/liquid removal and disposal with groundwater monitoring (alternative 3). All of the alternatives will be easily implemented; however, alternative 1 will not meet the threshold criteria and was not further considered. Alternatives 2 & 3 will meet the threshold criteria and were further evaluated. Alternative 2 will not have any short-term impacts and alternative 3 will need a HASP to control short-term impacts Alternatives 2 and 3 will be effective in the long-term; however, alternative 2 will require active management and will inhibit site development. Alternative 3 will be the only alternative that reduces the volume of contamination on-site because the soils and liquid wastes will be removed from the site. Alternative 3 will be the most expensive alternative; however, it will be a permanent remedy and should not inhibit the planned Site development by restricting certain areas from constructing buildings.

AOC3: Eastern Portion of the Site

The selected alternative for AOC3 (Eastern Portion of the Site) is soil removal and disposal (alternative 4). All of the remedial alternatives will be easily implemented; however, alternative 1 will not meet the threshold criteria and was not further considered. Alternatives 2, 3, & 4 will meet the threshold criteria and were further evaluated. Alternative 2 will not have any short-term impacts and alternative 3 and 4 will need a HASP to control short-term impacts. Alternatives 2, 3 and 4 will be effective in the long-term; however, alternatives 2 and 3 will require active management and will inhibit site development. Alternative 4 will be the only alternative that reduces the volume of contamination on-site because the soils will be removed from the site. Alternative 4 is the most expensive alternative; however, it will be a permanent remedy and should not inhibit the planned Site development by restricting certain areas of the site from constructing buildings.

AOC4: Miscellaneous Areas

The selected alternative for AOC4 (Miscellaneous Areas) is soil removal and disposal (alternative 4). All of the remedial alternatives will be easily implemented; however, alternative 1 will not meet the threshold criteria and was not further considered. Alternatives 2, 3, 4 & 5 will meet the threshold criteria and were further evaluated. Alternative 2 will not have any short-term impacts and alternative 3, 4 and 5 will need a HASP to control short-term impacts. Alternatives 2, 3, 4 and 5 will be effective in the long-term; however, alternatives 2, 3 and 4 will require active management and will inhibit site development. Alternative 5 will be the only alternative that reduces the volume of contamination on-site because the soils will be removed from the site. Alternative 5 will be cost effective when compared to alternatives 3 and 4; furthermore, it will be a permanent remedy and should not inhibit planned Site development.

The estimated present worth cost to implement the remedy is $4,276,141. The cost to construct the remedy is estimated to be $4,123,636. This includes $2,712,760 for building demolition, decontamination, and asbestos abatement; and $1,410,876 for remedial costs. The estimated average annual operation, maintenance, and monitoring costs for the first 5 years is $32,030 and $900 per year thereafter .

The elements of the selected remedy are as follows:

- A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program;

- Asbestos containing materials and chemical contaminated equipment and materials will be removed from all on-site buildings and disposed of off-site. All buildings will subsequently be demolished;

- A design-phase investigation will be implemented to determine the extent of contamination in all areas of concern and within the former building footprints. All monitoring wells will be sampled to confirm the extent of groundwater contamination;

- Liquids from the silver recovery vault and associated tanks and piping will be removed and disposed of off-site;

- Contaminated soils will be excavated and disposed of off-site at a permitted facility;

- Development of a site management plan to:(a) address residual contaminated soils that may be excavated from the site during future redevelopment. The plan will require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations; (b) evaluate the potential for vapor intrusion for any buildings developed on the site; (c) identify any use restrictions; and (d) provide for the operation and maintenance of the components of the remedy;

- Imposition of an institutional control in the form of an environmental easement that will (a) require compliance with the approved site management plan; (b) limit the use and development of the property to commercial/industrial uses only; (c) restrict the use of groundwater as a source of potable water which is consistent with the current City of Rochester ordinances; and (d) require the property owner to complete and submit to the NYSDEC an periodic certification;

- The property owner will provide periodic certification, prepared and submitted by a professional engineer or such other expert acceptable to the NYSDEC, until the NYSDEC notifies the property owner in writing that this certification is no longer needed. This submittal will contain certification that the institutional controls and engineering controls, are still in place, allow the NYSDEC access to the site, and that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan; and

- Since the remedy may result in untreated hazardous substances remaining at the site, a long term groundwater monitoring program will be instituted. Site-wide groundwater will be monitored on a regular basis until the NYSDEC determines it is no longer necessary. This program will allow the effectiveness of the soil removal to be monitored and will be a component of the operation, maintenance, and monitoring for the site. The need for groundwater remediation and/or continued monitoring will be periodically evaluated. Groundwater monitoring will continue until the remedial objectives have been achieved, or until the NYSDEC determines that continued monitoring is no longer required.

SECTION 9: <u>HIGHLIGHTS OF COMMUNITY PARTICIPATION</u>

As part of the Former Photech Imaging site environmental restoration process, a number of Citizen Participation activities were undertaken 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:

- Repositories for documents pertaining to the site were established;
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established;
- A fact sheet was sent out on February 14, 2006 to the all parties on the public contact list;
- A public meeting was held on March 7, 2006 to present and receive comment on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

TABLE 1
Nature and Extent of Contamination
Range of sampling dates: July 1999 - May 2005

SHALLOW SUBSURFACE SOIL (0-9" BGS**)	Contaminant of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Acetone	ND to 0.006 J	0.2	0 of 15
	Trichloroethene	ND to 0.003 J	0.7	0 of 15
Semivolatile Organic Compounds (SVOCs	Benzo(a)anthracene	ND to 2.4	0.22	7 of 16
	Chrysene	ND to 2.5	0.4	7 of 16
	Benzo(b)fluoranthene	ND to 1.7	1.1	1 of 16
	Benzo(k)fluoranthene	ND to 2.1	1.1	2 of 16
	Benzo(a)pyrene	ND to 2.3	0.061	7 of 16
	Dibenzo(a,h)anthracene	ND to 0.680	0.014	5 of 16
Inorganic Elements (Metals)	Cadmium	ND to 17.9	1	4 of 17
	Nickel	4.73 to 13.5	13	2 of 17
	Selenium	0.520 to 4.12	2	4 of 17
	Silver	1.04 to 462	***	0 of 17
	Zinc	18.6 to 255	20	15 of 17
SUBSURFACE SOIL	**Contaminants of Concern**	**Concentration Range Detected (ppm)[a]**	**SCG[b] (ppm)[a]**	**Frequency of Exceeding SCG**
Volatile Organic Compounds (VOCs)	Acetone	ND to 0.094	0.2	0 of 42
	1,2-Dichloroethane (tot.)	ND to 0.030	0.3	0 of 42
	2-Butanone	ND to 0.075	0.3	0 of 42
	Trichloroethene	ND to 0.018	0.7	0 of 42
Semivolatile Organic Compounds (SVOCs	Benzo(a)anthracene	ND to 10*	0.022	1 of 38
	Chrysene	ND to 8.7*	0.4	1 of 38
	Benzo(b)fluoranthene	ND to 5.2*	1.1	1 of 38
	Benzo(k)fluoranthene	ND to 5.6*	1.1	1 of 38
	Benzo(a)pyrene	ND to 7.9*	0.061	3 of 38
	Indeno(1,2,3-cd)pyrene	ND to 4.5*	3.2	1 of 38
	Dibenzo(a,h,)anthracene	ND to 1.9*	0.014	1 of 38
Inorganic Elements (Metals)	Cadmium	ND to 6,320	1	10 of 48
	Chromium	3.40 to 69.2	10	9 of 48
	Lead	4.20 to 1300	500	1 of 48
	Nickel	6.72 to 38.9	13	6 of 48
	Selenium	0.725 to 5.66	2	16 of 48
	Silver	ND to 846	***	0 of 48
	Zinc	14.8 to 450	20	43 of 48

TABLE 1
Nature and Extent of Contamination (Continued)

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1-Dichloroethane	ND to 11	5	2 of 20
	Trichloroethene	ND to 16	5	2 of 20
Semivolatile Organic Compounds (SVOCs)	Naphthalene	ND to 14	10	1 of 10
	Benzo(a)anthracene	ND to 6 J	0.002	1 of 10
	Chrysene	ND to 6 J	0.002	1 of 10
	Benzo(b)fluoranthene	ND to 3 J	0.002	1 of 10
	Benzo(k)fluoranthene	ND to 4 J	0.002	1 of 10
	Benzo(a)pyrene	ND to 4 J	0.002	1 of 10
	Indeno(1,2,3-cd)pyrene	ND to 2 J	0.002	1 of 10
Inorganic Elements (Metals)	Arsenic	ND to 95.1	25	**10 of 20[c]**
	Cadmium	ND to 40000	10	6 of 20
	Chromium	ND to 128	50	**7 of 20[c]**
	Lead	ND to 454	25	**10 of 20[c]**
	Nickel	ND to 186	100	**4 of 20[c]**
	Selenium	ND to 13.8	10	1 of 20
	Silver	ND to 2960	50	4 of 20

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

[b] SCG = standards, criteria, and guidance values;

Bold c = These metals were either ND or below SCGs in the May 2005 groundwater sampling event (see tables 3 and 4)
* = Highest SVOC concentrations in subsurface soil at boring location Well 06
** bgs = below ground surface
*** = The site-specific cleanup level for cadmium in TAGM 4046 is 1 ppm. Cleanup of cadmium to this level will remediate silver in soils to levels that are protective of human health and the environment.

ND = Compound Not Detected
J = Estimated Value

Table 2
Remedial Alternative Costs

Area of Concern	Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
AOC1	No Action	$0	$0	$0
	Building #11 Demolition, Institutional Action, and site Investigation	Total Cost $337,030	$900	Total Cost $350,865
		Demo/Asbestos $306,000		Demo/Asbestos Cost $306,000
	Building #11 Demolition and Soil Cover	Total Cost $407,500	$1,500	Total Cost $416,770
		Demo/Asbestos $306,000		Demo/Asbestos Cost $306,000
	Building #11 Demolition and Soil Removal	Total Cost $481,820	$900	Total Cost $495,655
		Demo/Asbestos $306,000		Demo/Asbestos Cost $306,000
AOC2	No Action	$0	$0	$0
	Institutional Actions	$13,200	$900	$27,035
	Building #1 Demolition, Soil Removal and Groundwater Monitoring	Total Cost $615,156	$32,030	Total Cost $753,826
		Demo/Asbestos $114,000		Demo/Asbestos Cost $114,000
AOC3	No Action	$0	$0	$0
	Institutional Action	$13,200	$900	$27,035
	Soil Cover	$105,280	$1,800	$119,180
	Soil Removal	$580,800	$900	$594,635
AOC4	No Action	$0	$0	$0
	Institutional Action	$13,200	$900	$27,035
	Institutional Action and Groundwater Monitoring	$16,800	$32,030	$155,470
	Soil Cover and Groundwater Monitoring	$73,900	$33,830	$226,470
	Soil Removal	$153,100	$900	$166,935

Table 3
Former Photech Imaging, Inc.
VOCs, SVOC, and Metals in Groundwater (February 2000)

Volatile Organic Compounds	SCG (ppb)	Well-01	Well-02	Well-03	Well-04	Well-05	Well-06	Well-07	Well-08	Well-09	Well-10
acetone	50	6 J	ND	3 J	4 J	4 J	3 J	ND	ND	4 J	ND
1,1-dichloroethane	5	ND	ND	ND	2 J	1 J	ND	ND	ND	**8**	2 J
1,1-dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	1 J	ND
tot. 1,2-dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	1 J	ND	ND
1,1,1-trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	2 J	ND
trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	**16**	1 J	ND
toluene	5	ND	1 J	ND	ND	ND	1 J	ND	ND	ND	ND
xylene (total)	5	1 J	1 J	ND	ND	ND	1 J	ND	ND	ND	ND
SVOCs											
naphthalene	10	ND	ND	ND	ND	ND	**14**	ND	ND	ND	ND
benzo(a)anthracene	0.002	ND	ND	ND	ND	ND	**6 J**	ND	ND	ND	ND
chrysene	0.002	ND	ND	ND	ND	ND	**6 J**	ND	ND	ND	ND
benzo(b)fluoranthene	0.002	ND	ND	ND	ND	ND	**3 J**	ND	ND	ND	ND
benzo(k)fluoranthene	0.002	ND	ND	ND	ND	ND	**4 J**	ND	ND	ND	ND
benzo(a)pyrene	0.002	ND	ND	ND	ND	ND	**4 J**	ND	ND	ND	ND
indeno(1,2,3-cd)pyrene	0.002	ND	ND	ND	ND	ND	**2 J**	ND	ND	ND	ND
Metals											
arsenic	25	**37**	**33.2**	**36.6**	**34.6**	**49.2**	**41.1**	**47**	**95.1**	**26.7**	**34.9**
cadmium	10	**40000**	ND	ND	ND	**15.5**	ND	ND	ND	ND	ND
lead	25	**165**	**146**	**118**	**142**	**276**	**191**	**322**	**454**	**82.7**	**153**
silver	50	**2960**	ND	ND	ND	ND	ND	**92.3**	**118**	ND	ND

Units = µg/l J = Estimated Value
ND = Not Detected Shaded values exceed SCGs

Table 4
Former Photech Imaging, Inc.
VOCs and Selected Metals in Groundwater (May 2005)

Volatile Organic Compounds	SCG (ppb)	Well -01	Well -02	Well -03	Well -04	Well -05	Well -06	Well -07	Well -08	Well -09	Well -10
acetone	50	ND	ND	ND	ND	ND	3 J	1 J	ND	ND	ND
1,1-dichloroethane	5	ND	ND	ND	3.1 J	1.2 J	ND	ND	1.5 J	**11**	2.2 J
1,1-dichloroethene	5	ND	ND	ND	2.3 J	0.7 J	ND	ND	ND	2.8 J	ND
cis-1,2-dichloroethene	5	ND	ND	ND	ND	ND	ND	ND	1.5 J	ND	ND
1,1,1-trichloroethane	5	ND	ND	ND	3.7 J	0.56 J	ND	ND	0.73 J	0.86 J	1.2 J
trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	**14**	0.87 J	ND
Metals											
Cadmium	10	**91.9**	**8.4**	ND	**14.2**	**74.1**	ND	**6.5**	ND	ND	**19.5**
Lead	25	ND	ND	ND	ND	ND	ND	15.6	ND	ND	7
Silver	50	**88.7**	ND	ND	ND	ND	ND	ND	ND	ND	ND

Units = µg/l
ND = Not Detected
J = Estimated Value
SVOCs were not analyzed
Shaded Values exceed SCGs

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Former Photech Imaging Environmental Restoration Site
City of Rochester, Monroe, County, New York
Site No. B-00016-8

The Proposed Remedial Action Plan (PRAP) for the Former Photech Imaging site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 14, 2006. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the Former Photech Imaging site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 7, 2006, which included a presentation of the Site Investigation (SI) and the Remedial Alternatives Report (RAR) 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. The public comment period for the PRAP ended on March 30, 2006.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the NYSDEC's responses:

COMMENT 1: How much dirt is over the dolomite shelf? Four to six feet?

RESPONSE 1: The depth to bedrock (dolomite) at the site ranges from 8 to 20 feet. The depth to bedrock is deepest adjacent to the underground tunnels on the site which suggest that bedrock was blasted or excavated to construct these tunnels.

COMMENT 2: Are the costs for decontamination and asbestos abatement included in your demolition numbers?

RESPONSE 2: The building decontamination costs are included with the demolition and asbestos abatement costs.

COMMENT 3: Is there any recourse to recover money from Photech? Why is this project costing taxpayer dollars? Can the former owner be located?

RESPONSE 3: The USEPA attempted to recover funds for the removal action that was conducted in1994 and reached a settlement with the former owner for $50,000. The NYSDEC has not identified a viable responsible party available to pay for the costs of investigation and cleanup of the former Photech site. However, the NYSDEC will continue to explore cost recovery avenues after the ROD is issued.

COMMENT 4: The Photech buildings should be demolished and the land redeveloped to get the property back on the tax rolls.

RESPONSE 4: Thank you for your support of the proposed remedy. The proposed remedy does include demolition of all of the on-site buildings and excavation and removal of contaminated soils. Upon completion of remediation, the City of Rochester plans to have the property redeveloped for commercial/industrial use.

COMMENT 5: Is there any off site migration of groundwater contaminants? Are there any chlorinated hydrocarbons in the bedrock?

RESPONSE 5: The data generated during the site investigation do not indicate that groundwater contamination is moving off-site. The monitoring wells are constructed within the bedrock/overburden interface interval. Low levels of chlorinated solvents have been detect in two on-site wells at levels ranging from 8 to16 ppb.

COMMENT 6: The former City Commissioner Forbes wanted to reopen this site. How much in federal dollars were spent on this site? How much money did the City of Rochester spend on acquisition and investigation of this site?

RESPONSE 6: The public records indicate the City of Rochester acquired the Former Photech property through tax foreclosure proceedings. Photech defaulted on $9.2 million of a $9.3 million bond issued by the County of Monroe Industrial Development Agency (COMIDA). Additionally, Photech defaulted on $1,670,000 in property taxes and loans to the City of Rochester; and $429,000 in property taxes to Monroe County. The United States Environmental Protection Agency spent $426,000 on the removal action in 1994. The New York State Department of Environmental Conservation spent $95,400 for the removal action and chemical inventory in 1991. Finally, the City of Rochester has spent $312,000 on site investigations and IRMs. The total costs in defaulted bonds, loans and taxes; land acquisition; site investigation; and cleanup to date are $12.2 million.

COMMENT 7: What will the site look like after remediation?

RESPONSE 7: Upon completion of the remedy, the site will be a vacant grassy lot. Some site improvements, such as roads and utilities, may be constructed after the buildings have been demolished and contaminated soils have been excavated.

COMMENT 8: Who owns the woods behind the building?

RESPONSE 8: The wooded area immediately to the north of the buildings is part of the Former Photech site.

COMMENT 9: Where were tests conducted to identify groundwater contamination?

RESPONSE 9: Groundwater was sampled from ten monitoring wells located throughout the property. These wells were sampled in February 2000 and May 2005. The sample results indicated metals in groundwater in the vicinity of the silver recovery pit and low levels of volatile organic compounds in the vicinity of the former on-site pond.

COMMENT 10: Is it true that Dolomite rock is not very porous? If the contaminated soils were excavated, would the rock be preventing off-site contaminant migration?

RESPONSE 10: The upper bedrock is weathered and contains many fractures. Groundwater flows through these fractures and is the primary route for contaminants to migrate off-site. The rock will not prevent contaminants from moving offsite; however, once the contaminated soils are removed, the levels of contaminants in groundwater are expected to decrease. A long-term groundwater monitoring plan will be implemented to monitor the effectiveness of the soil removal.

COMMENT 11: In 1944, there used to be a pond of ammonia by the old ice factory on the property which is currently the Delphi site. Third grade kids from School #34 used to tour the ice factory and the pond.

RESPONSE 11: Comment noted. This information will be forwarded to the project manager for the Delphi site.

COMMENT 12: In the presentation, a missing underground storage tank was mentioned. The investigation identified the tank foundation and straps but did not locate the tank. After building demolition, will it be easier to verify that the tank was removed?

RESPONSE 12: The remedy will require large amounts of contaminated soil to be removed. These large excavations should verify that the missing underground tank was previously removed.

COMMENT 13: How long will this clean up take?

RESPONSE 13: Once the City of Rochester has received its grant to implement the remedy, the design and cleanup should take 18 to 24 months.

COMMENT 14: What is the route of storm water drainage from the site? Where will wastewater that is generated from the site cleanup go? Where will future stormwater drainage go?

RESPONSE 14: Stormwater from the site currently flows into the sewers on Driving Park Avenue. Wastewater generated during the remediation will either be collected and treated on-site prior to sewer discharge, or it will be shipped off-site for disposal. These details will be finalized in the design of the remedy. Future stormwater drainage will be designed as part of any future site development and will not be part of the remedy.

COMMENT 15: When the site is marketed for development, will stormwater drainage be an issue when buildings and parking lots are constructed?

RESPONSE 15: Any future site development will address stormwater as part of the development plan and will not be part of the remedy.

COMMENT 16: Is there an old creek bed in the woods, in the back of the site?

RESPONSE 16: The former on-site pond discharged to a wetland area on the northeast portion of the site.

APPENDIX B

Administrative Record

Administrative Record

Former Photech Imaging
Site No. B00016-8

1. Proposed Remedial Action Plan for the Former Photech Imaging site, dated February 2006, prepared by the NYSDEC.

2. Fact Sheet “DEC Proposes Cleanup at Former Photech Imaging Site Seeks Public Input”, February 2006.

3. “Environmental Site Investigation/Remedial Alternatives Report Former Photech Imaging Systems, Inc.,” January 2006, prepared by Day Environmental, Inc.

4. Groundwater Analytical Data, Columbia Analytical Service, June 20, 2005.

5. “Phase II Sampling and Analysis Plan Subsurface Investigation and Survey,” prepared by Brownfield Restoration Group, October 7, 1999.

6. Fact Sheet “Investigation Update at the Former Photech Site”, August 1999.

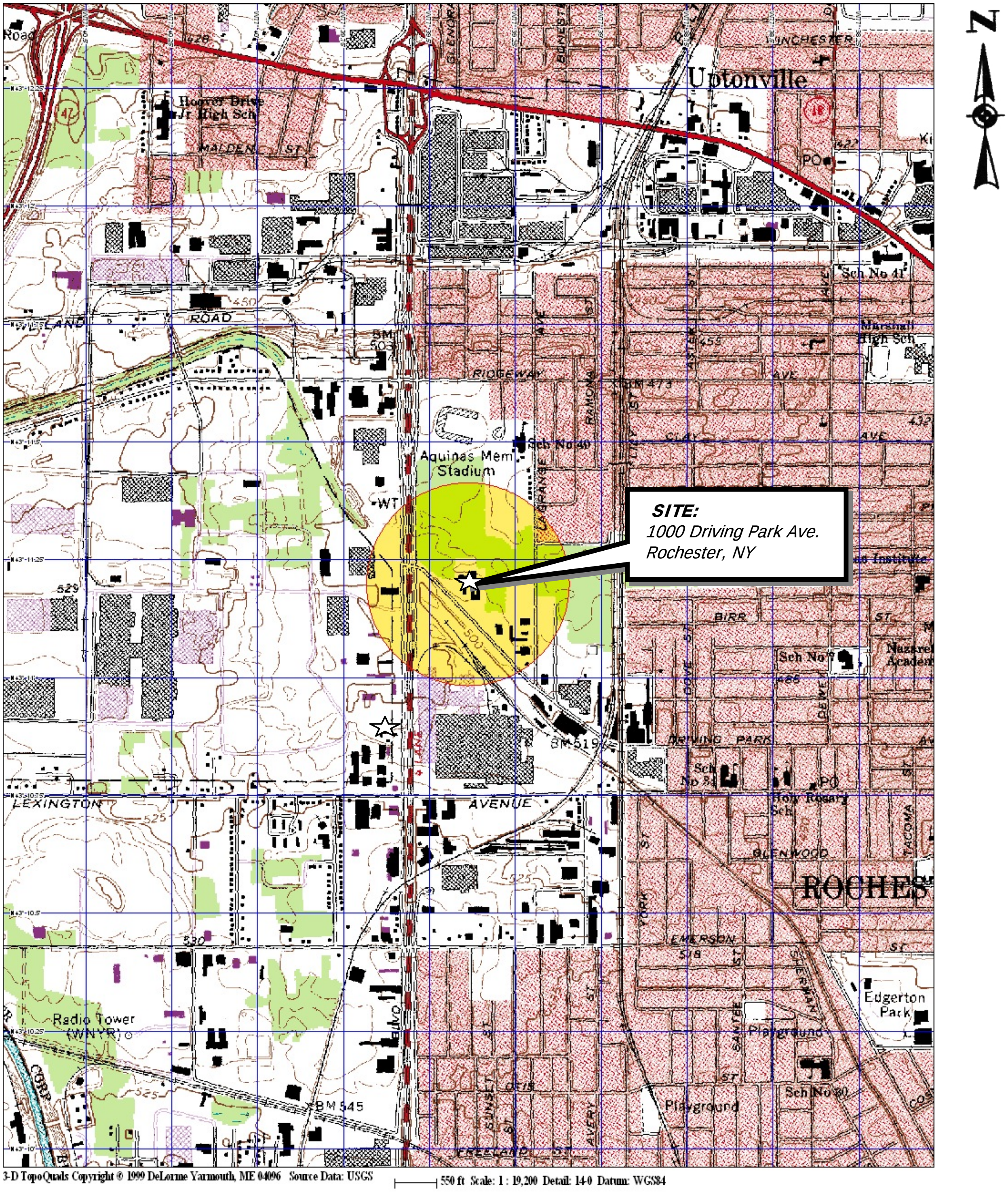
7. “Tank Closure and Removal Scope Clarification,” prepard by Brownfield Restoration Group, July 26, 1999.

8. “Phase II Sampling and Analysis Plan Building and Equipment Decontamination Survey.” prepared by Brownfield Restoration Group, June 11, 1999.

9. Fact Sheet “Investigation to Begin at the Former Photech Site”, December 1998

10. “Revision 2 Work Plan Site Investigation and Remedial Alternatives Project for the Former Photech Imaging Systems Property,” November 1998, prepared by IT Corporation.

11. “Citizen Participation Plan for the Former Photech Imaging Systems, Inc. Site,” November 30, 1998.



Drawing Produced From: 3-D TopoQuads, DeLorme Map Co., referencing USGS quad map Rochester West (NY) 1995 and Rochester East (NY) 1995. Site Lat/Long: N43°11.19'– W77°39.38'

DATE		PROJECT TITLE **1000 DRIVING PARK AVENUE ROCHESTER, NY** **ENVIRONMENTAL RESTORATION PROJECT**	PROJECT NO. **FIGURE 1**
DRAWN BY			
SCALE **1" = 2000'**		DRAWING TITLE **PROJECT LOCUS MAP**	

Figure 4
Total PAHs and Metals in Soils for AOC3
Former Photech Imaging, Inc.

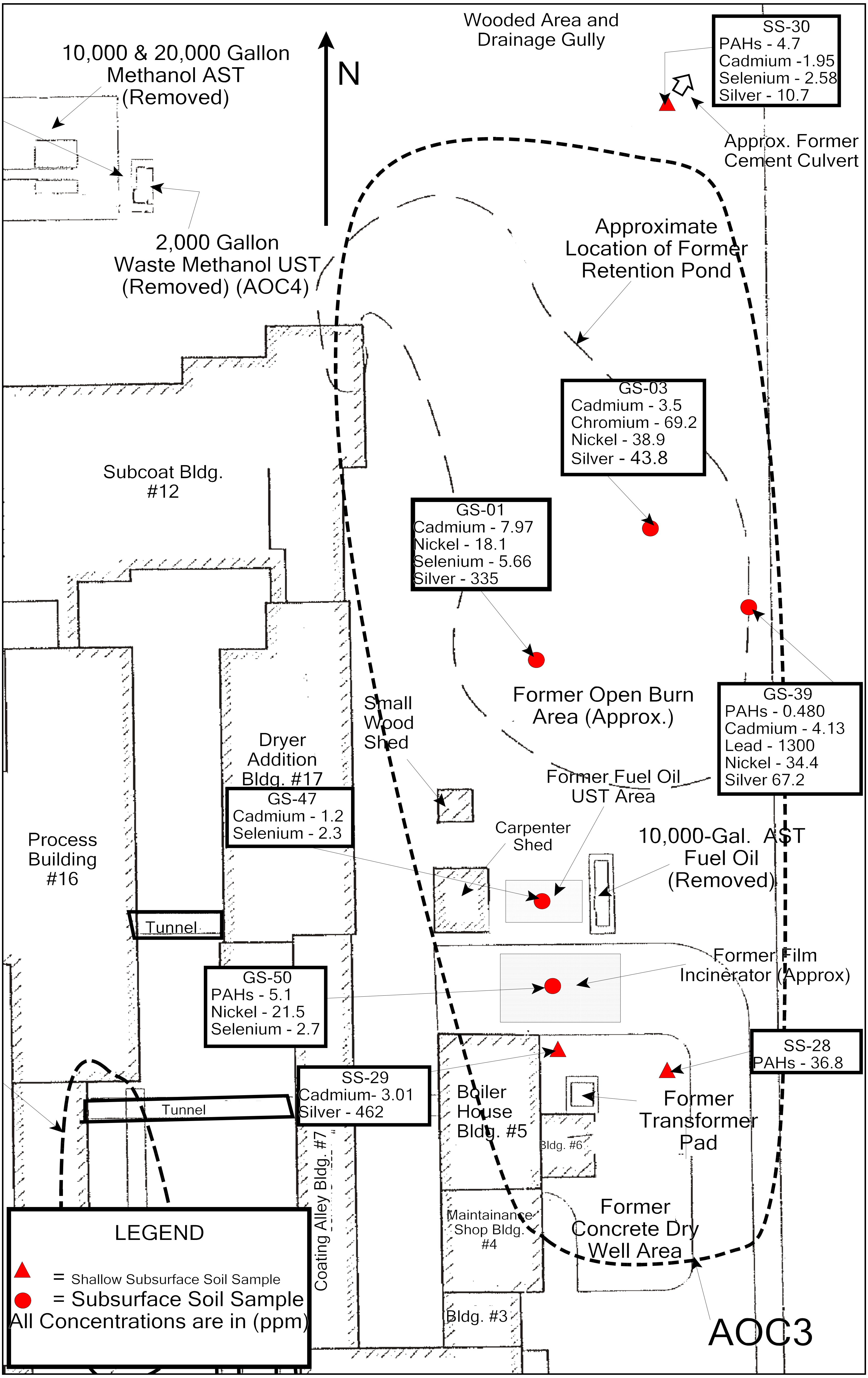
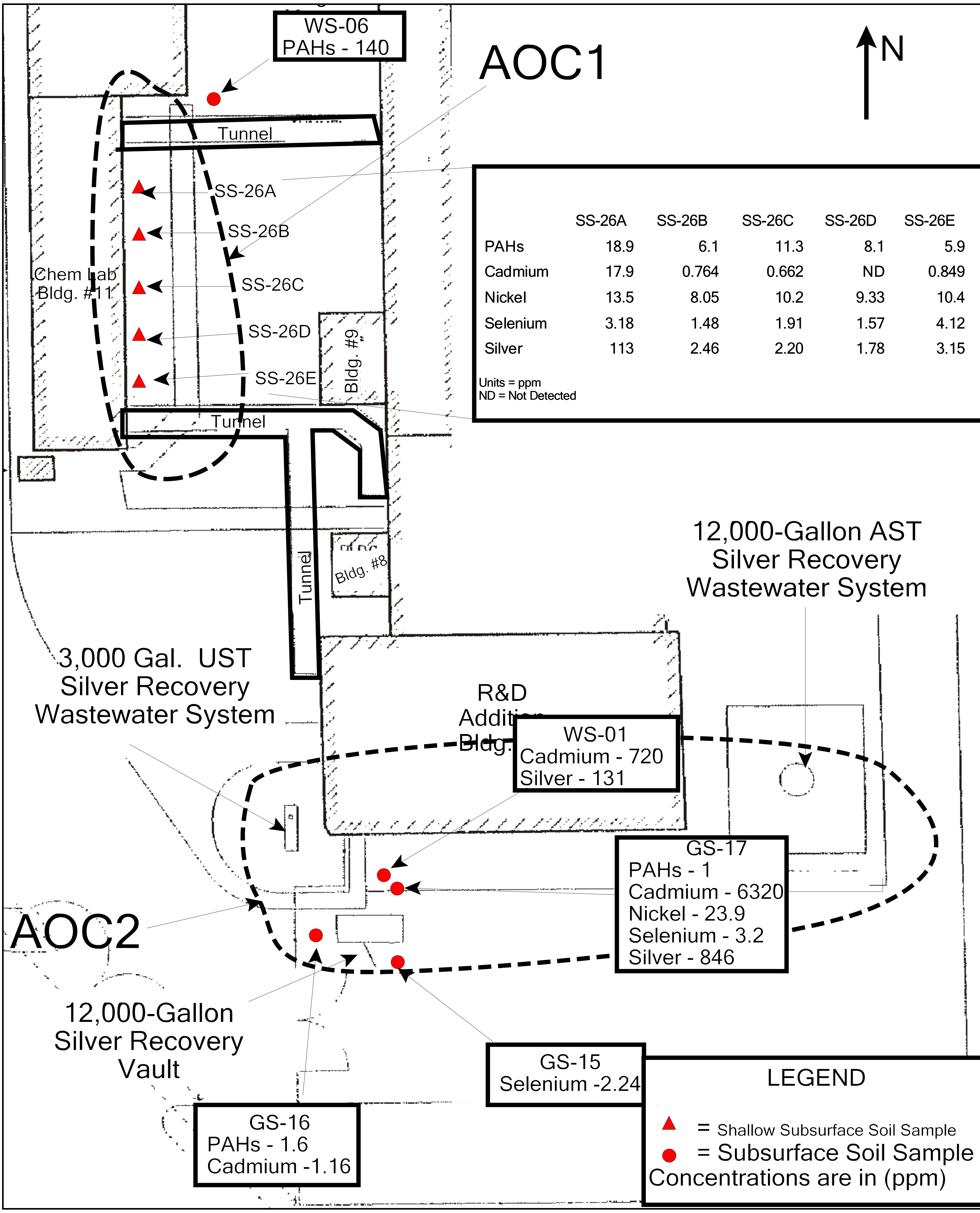


Figure 3
Total PAHs and Metals in Soils for AOC1 and AOC2
Former Photech Imaging, Inc.



	SS-26A	SS-26B	SS-26C	SS-26D	SS-26E
PAHs	18.9	6.1	11.3	8.1	5.9
Cadmium	17.9	0.764	0.662	ND	0.849
Nickel	13.5	8.05	10.2	9.33	10.4
Selenium	3.18	1.48	1.91	1.57	4.12
Silver	113	2.46	2.20	1.78	3.15

Units = ppm
ND = Not Detected

Figure 2
Site Layout
Former Photech Imaging, Inc.

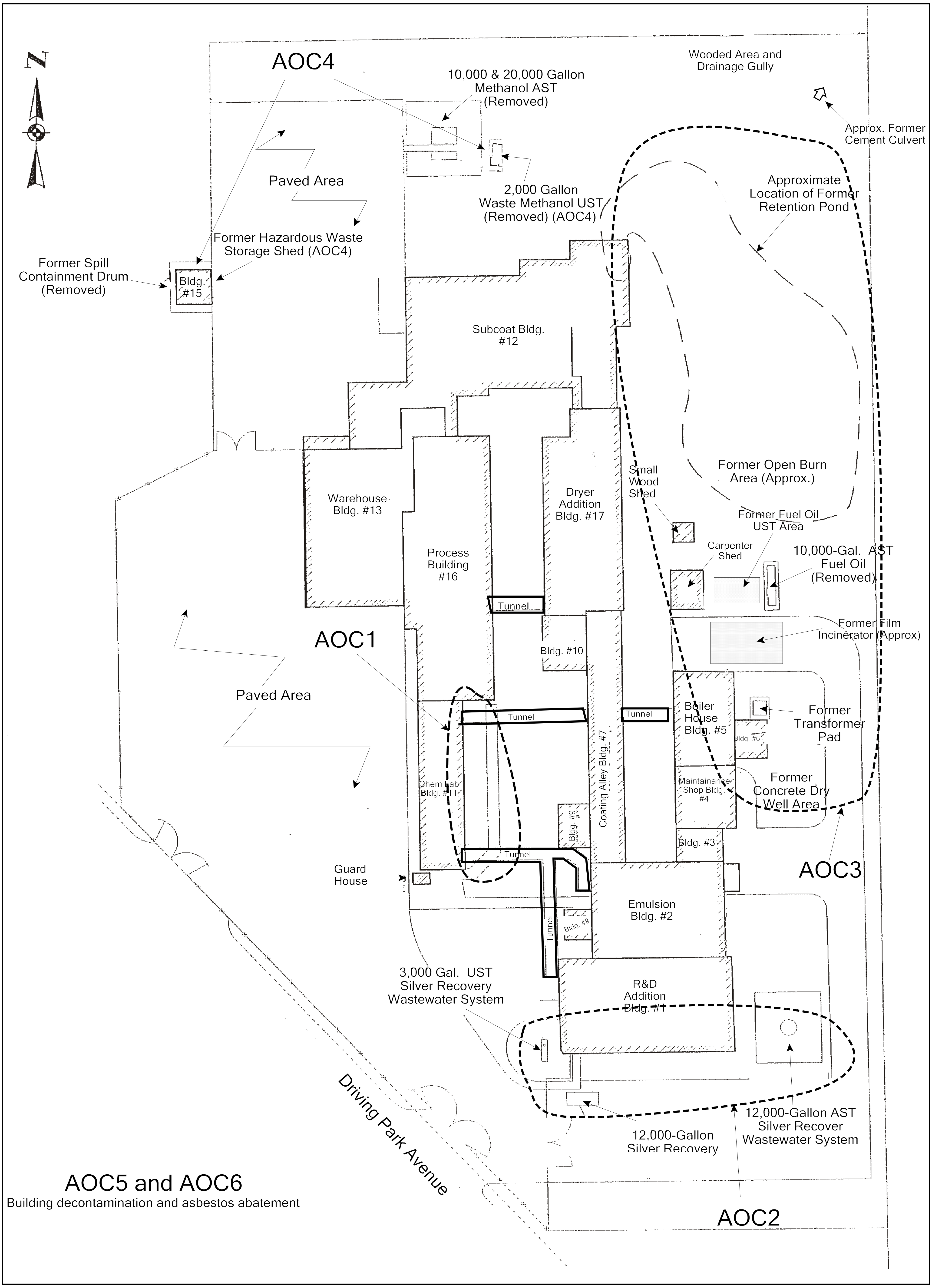


Figure 5
Former Photech Imaging, Inc.
Groundwater Potentiometric Surface Map